

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

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by the Indexers

VOLUME 36

ABBREVIATIONS

- Ja, January
- F, February
- Mr, March
- Ap, April
- My, May
- Je, June
- Jl, July
- Ag, August
- S, September
- O, October
- N, November
- D, December

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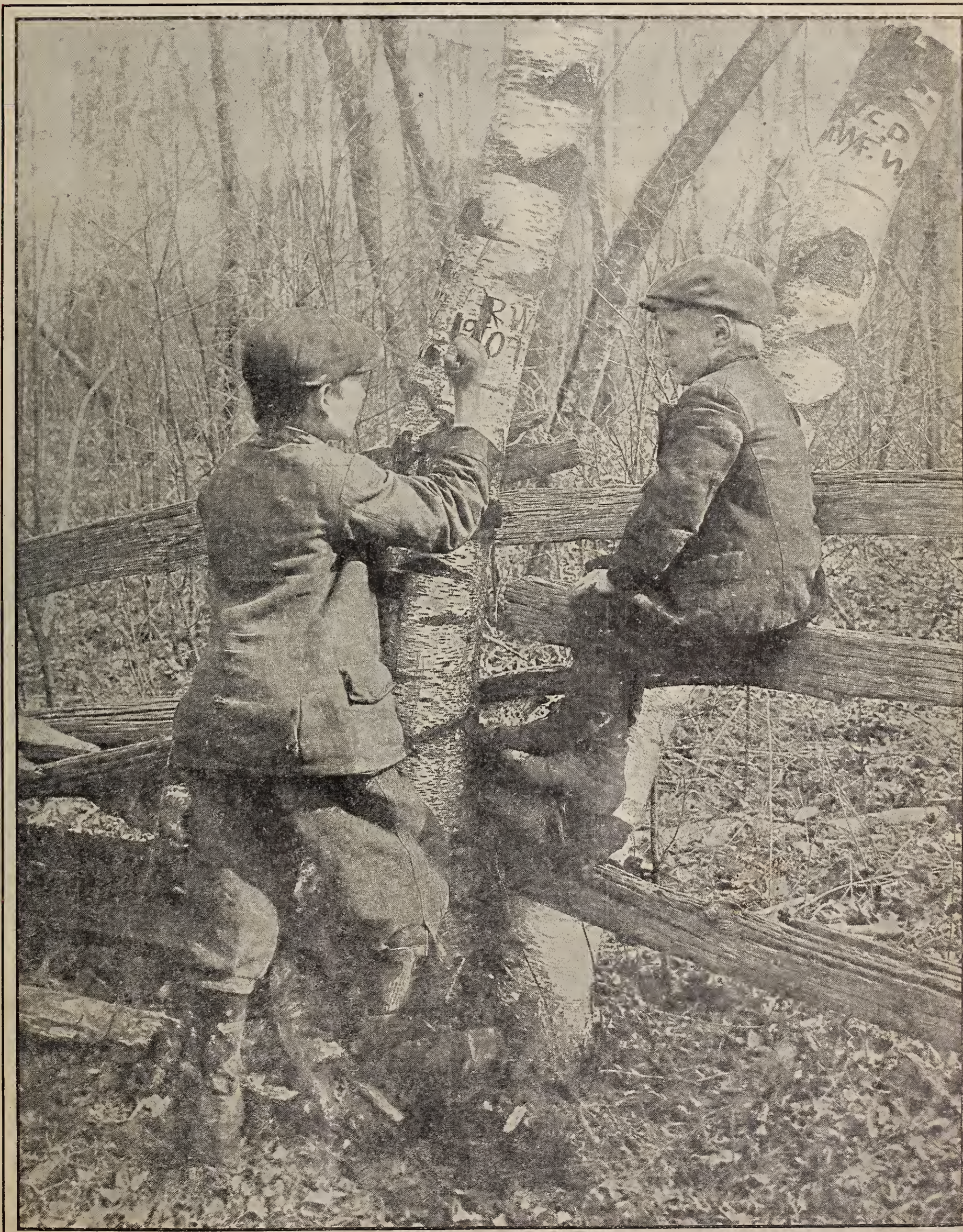
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FARM AND FIRESIDE

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ESTABLISHED 1877

SATURDAY, OCTOBER 12, 1912



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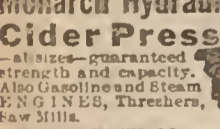
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With the Editor

THE man or woman who entertains angels unawares is not in half as sorry case as he who has an opportunity to entertain one and turns him away. This is sent out as a warning to the people of the farms and farming communities to be on the lookout for Nicholas Vachel Lindsay, lest, perchance, they find themselves in the latter class by failing to recognize his quality when he comes among them.

Lindsay is a sort of prophet, a sort of tramp, a sort of wandering minstrel, a sort of farm-hand, a sort of latter-day, American Tolstoy, a real poet, one of the finest of literary artists, and one who loves the common people and goes among them, not to help them, but to be helped by them. He could live on Broadway if he wanted to do so. But he prefers the open sky to the electric signs, the plowed fields to the asphalt pavements.

When I last heard of him, he was in Colorado "In Camp." He expects to spend a year, as he says, "as a farm-hand half the time, a rhyming tramp and troubadour the rest." When he comes to your door, O fortunate one, it will test your sense of manhood. Maybe you won't be able to tell him from any other Weary Willie. Not at first, that is. But Lindsay will give you a chance to hear a poet read his own verses. He will enable you, if you have imagination, to understand the sort of thing which happened long, long ago when the baron sat in his castle hall and feasted with his retainers—who were really only hired men—and made a seat at the long table in the long hall for the wandering minstrel who came along and sang his poems.

Lindsay is a wandering minstrel with an up-to-date message for everybody. Remember that, if he comes to your door some day asking a job or a night's lodging. Here's his statement of his "Gospel of Beauty":

"The new 'Creed of the Beggar,' by that vain and foolish mendicant, Nicholas Vachel Lindsay. Printed for his personal friends in his home village, Springfield, Illinois. It is his intention to carry this gospel across the country, beginning June, 1912; returning in due time."

Remember, this is what he says. I don't think him a vain and foolish mendicant, or anything like it. I think he's a man you ought to be glad to see and to take to the parsonage so that the minister may have the opportunity of asking him to occupy the pulpit—which is just what Lindsay will be wanting to do. For he is a preacher. What does he preach? Let him tell you:

"I come to you penniless and afoot, to bring you a message. I am starting a new religious idea. This idea does not say 'No' to any creed you have heard. After this let the denomination to which you now belong be called in your heart 'The Church of Beauty' or 'The Church of the Open Sky.' The Church of Beauty has two sides: The Love of Beauty and the Love of God."

He will tell you how he thinks this gospel of his can be lived. He believes in living it right here and now. He thinks that every place and every neighborhood can be made beautiful and livable, and fair in the Divine eye, and that it is the best life in the world to make that very thing come to pass.

I THINK he would have more money if he had time to earn it; but he is too busy to work. I know that he could sit down and write in Springfield, Illinois, and earn a great deal of money—for all the magazine editors know his work. But he is trying to learn life, as well as to teach living. "The farmers are teaching me much, whether I teach them anything or not," says he, in a personal letter, from which I am quoting without permission.

"I am going through much of the Western States," says he, "to the coast and return. I have already crossed Missouri, Kansas and Colorado. I want the rural, non-sectarian religious world to take me just as seriously, as a mendicant evangelist afoot, as it can possibly be persuaded to do. I have just one sermon—it is the expansion of the 'Gospel of Beauty.' And here are some things from the "Gospel of Beauty"—according to Nicholas Vachel Lindsay:

"The things most worth while are one's own hearth and neighborhood."
"We should make our own home the most democratic, the most beautiful and the holiest in the world."

"They (the people) should labor in their little circle expecting neither reward nor honor. In their darkest hours they should be made strong by the vision of a completely beautiful neighborhood and the passion for a completely democratic art. Their reason for living should be that joy in beauty which no wounds can take away, and that joy in the love of God which no crucifixion can end."

NOW I have in my list of readers—in the great FARM AND FIRESIDE family, one reader whom I shall call Uncle Zimri. He is a real person, but I hope he won't recognize himself under that name. Uncle Zimri, if he reads this so far forth, will do so with a growing wonderment as to what it is all about. He will regard Lindsay as "wuthless," if not crazy, and he will marvel that I take him seriously. I rather doubt my ability to make Uncle Zimri understand—but I'll try.

You see, Uncle Zimri, Lindsay's gospel is just a poet's highfalutin way of expressing what I've been trying to put forth in these pages. Making the most of the neighborhood—I don't know what that means to you, and I don't know what it means to him, but to me it means the new kind of rural school and farm we are going to have. It means the teaching to all the children the beauties of biology, animal husbandry, agronomy, domestic science and manual training. It means that every country child will learn about the things by which he can, and probably must, make his living—learn them from the bottom, theoretically and practically.

And this means that every child will learn the operation of thinking about things, rather than merely mumbling over words.

That's making the most of the neighborhood and of the hearth.

I once saw an artist sharpen a pencil, leaving the powdered graphite on a sheet of white paper. Absent-mindedly he took his finger and smeared this black powder about. In a moment it took form. Eyes, nose and mouth grew out of the smear—and finally a beautiful face appeared.

I think that's what Nicholas Vachel Lindsay means by the application of the gospel of beauty to the neighborhood. Things lie about in a rather unhandsome way in many of our neighborhoods, and the thing that will make them change from pencil-sharpenings into pictures is just this—thought.

Don't forget Lindsay. Take him, and listen to what he has to say. A lot of it won't be true—but he will think it true, and he will do you good. Even you, Uncle Zimri.

Robert Quirk

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BI-WEEKLY

What is Skim-Milk Worth?

IT DEPENDS on how it is used, of course; but if the average dairyman were offered thirty cents a hundred for it he would regard the offer as one likely to be a losing one for the buyer. And yet the buyer might make money on it as feed for pigs. If he had pigs and no other feed but corn, it would undoubtedly pay him to buy skim-milk at thirty cents a hundred to feed with the corn. The South Dakota Experiment Station has proven that when a ration of 153 pounds of skim-milk or buttermilk is fed with a bushel of corn it adds nearly six pounds to the gain of the hogs. This, at present prices, will just about pay out at thirty cents a hundred for the milk. But the hogs will grow faster, sell younger and have less chance to die of disease. In other words, the time factor and the health factor will both be favorably affected by the use of the milk.

The moral is: Feed the skim-milk and buttermilk to the hogs unless you have some use for them which will make them worth more than thirty cents a hundred. Moral No. 2 is: Feed a balanced ration. All the milk does is to balance the ration furnished by the corn. This it does by supplying protein which corn lacks. The proof of this is found in the fact that milk alone is not as good as a feed as the corn alone. The rule is: Not over three pounds of skim-milk or buttermilk—or say three pints—should be fed with a pound of shelled corn or corn-meal. If you feed more milk, you waste a part of it. A lead-pencil is as much an essential part of a feeder's equipment as a scoop-shovel.

The Plague-Bearing Rodents

DR. T. B. McCLINTIC, of the United States Marine Hospital Service, died at Washington on August 13th of Rocky Mountain Spotted Fever. He had been studying the disease in the Bitter Root Valley of Montana, and for two years had been fighting on the ground a battle with the rodents from which the dread disease is carried to human beings by wood-ticks. Doctor McClintic was a martyr to science and to the spirit of service to the people which so marks the medical profession.

The Rocky Mountain Spotted Fever seems fairly well localized, but it is not impossible that it may at any time start on a destroying march across the country. Wherever the wood-ticks that infest ground-squirrels and other rodents become infected with the disease, persons bitten by the ticks are exposed to the fever.

Ground-squirrels, chipmunks, mice, rats, pine-squirrels, woodchucks, field-mice, wood-rats, meadow-mice, pocket-gophers, rabbits and weasels are all possible agents for the spread of this disease.

Still more threatening as a phase of the rat evil is bubonic plague, which after ravaging all Asia and a good part of Africa threatens us on both our western and southern shores. It will come through a rat when it comes—a rat infected with the plague and escaping from some ship from South America, the West Indies or Asia. The fleas from this rat will bite other rodents, they in turn will take the plague, and thus it will spread to our people.

It is a real danger and a great danger.

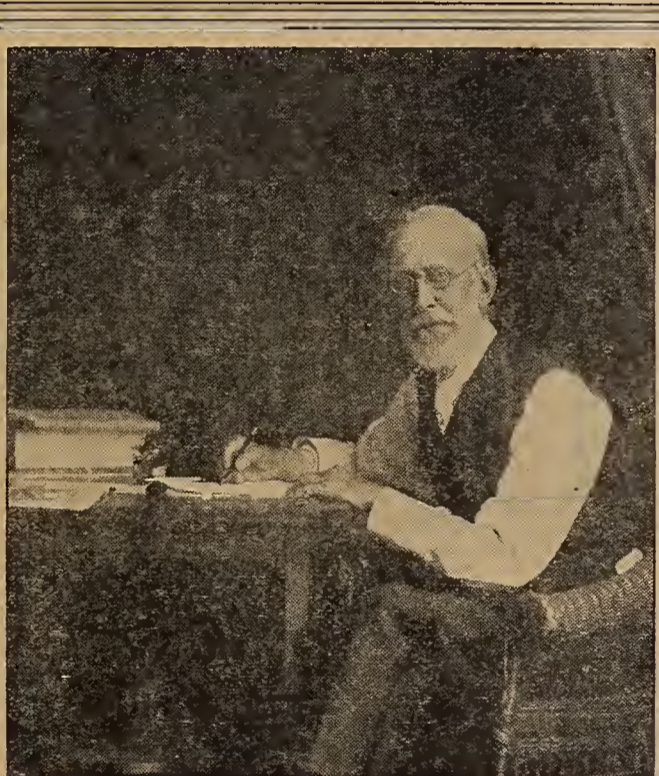
We can all help. Fight rats. Kill all sorts of rodents. Make relentless war on them. And the fight should be organized in every community.

The Canadian government elevator at Ft. William, Ontario, is to be built by a Minneapolis firm at a contract price of \$1,179,503. Canada never had any Populists, but she has the government elevator in spite of that fact. We have had the Populists, but our terminal markets are still in the undisputed control of the politicians and the middlemen.

Again clover talks. This time from the farm of Charles Ebeling, Osceola County, Michigan. From three and three-fourths acres of alsike clover cut last year, fourteen tons of number one hay was harvested; late in August another cutting was made from which ten bushels of first-class seed was thrashed.

Salaries of Rural Mail-Carriers

ON SEPTEMBER 1st the salaries of rural mail-carriers were increased. On standard routes this advancement of salaries amounted to \$100 a year. Those carriers who have been mistakenly opposing parcels post are now able to see that the new law will give them additional compensation somewhat in proportion to the larger service they will render. One of these days the position of carrier will become a much more



THE Market Outlook page is a winner. So the readers of Farm and Fireside declare, and we are pleased. This department has succeeded because the men who have been writing for it tell the right things, and they do that because they know the subjects they are discussing. Mr. John Pickering Ross, who is here shown, has from his earliest days been a student of sheep. He has fed them, cared for them and learned the effect they have on the farm and its work. Besides this, he has been in constant touch with the markets of the world. His remarks, therefore, on the Market Outlook page carry a special message to the readers of Farm and Fireside.

important and lucrative one than many of us are able to foresee. The best of it is that, according to the Postmaster-General, "the additional cost will be more than offset by an increased revenue, thus insuring the maintenance." The increase is provided for in the parcels-post law. The details of the law are now being worked out by a special committee.

Another Index

ANOTHER index is being prepared for the readers of FARM AND FIRESIDE. It will include facts about the past year's issues. As long as the readers of the paper demand the INDEX, it will be printed at the close of each volume. This year, as formerly, the INDEX will be sent to those who ask for it. It is sent free for the asking. A number of requests have already been entered on our books, and to supply those the INDEX will be sent as soon as it is ready. Send your communications to the Index Editor, FARM AND FIRESIDE, Springfield, Ohio. Give us your complete address.

Railways and Fertility

THAT the population of this nation is growing faster than is the production of food is true. But we need not therefore implicitly accept the prophecies of gentlemen like Mr. James J. Hill of the Great Northern, Northern Pacific and Burlington railway systems, Mr. W. C. Brown of the New York Central, President Finley of the Southern, Mr. Yoakum and others that we shall soon face something like national starvation. People enter occupations which are the most available and most profitable. As farming becomes more and more profitable, it will command the attention of more and more people, and the volume of food produced will increase. We shall not starve for a while. Before that occurs we shall doubtless see farm products so high as to attract enough hands to the fertile acres so that our national larder will be supplied.

Most of these gentlemen are railway men. It may be in order to suggest that the railways can do much more than they ever have done to stimulate production. The transportation of lime, phosphates, nitrates, potash and the manure from the cities to the land is a railway function. In many parts of the country the railways do not seem to have thought that they are charged with any duty to themselves or the public in the making of low rates on these things. Lime is needed in millions of tons for our acid soils. It would seem good business for the railways not only to transport lime at cost, but to encourage its production for agricultural purposes along their lines. Phosphate rock is the basis of most fertilizing operations. It usually comes from far. Should it not be brought to the farms with no thought of profit in the mere carrying? The railways carry the feeds to the cities from which manure is made. It would seem good business for them actively to interest themselves in the matter of getting the manure back to the land. Every ton used would result in vastly greater tonnage from the farms, and increased food-supply as well.

Neighborhood Welfare

THE police scandal and the revelations as to protected crime and vice in New York City have brought down on the heads of certain owners of property the condemnation of the press.

These landlords have been leasing their property for immoral and criminal uses. For this privilege which they have sold to their tenants they have received exorbitant rentals—much higher than they could have obtained from any legitimate business.

They, of course, are as bad as the people they have rented to—even if some of them are high in church and business and social circles. Their only exculpation must be ignorance, and in such a case ignorance is hard to believe in the face of all the circumstances, unless it be that carefully cultivated ignorance which accepts the rent with tight-shut eyes—and such simulated ignorance is itself criminal.

This is in a great city. But are owners of farms any less blameworthy when they accept tenants, or keep them, who are by their character objectionable? Is it not the duty of the landlord to see that his use of his land is good for the people who live near it, as well as for his own pocketbook? In other words, has a man a right, merely by reason of his ownership of land on which he does not live, to admit into a neighborhood people who are not fit for fellowship in the society of the neighborhood? What are the duties of the landlord in the premises? Has he any duties? Or, can he without blame "do as he will with his own"?

Interesting questions, are they not? But to us they seem to have but one answer. That answer will hold the rural landlord guilty if those New York landlords are guilty, and innocent if they are innocent.

The South Pole as an Asset

By Charles Barnette Wolf



"I feel that a letter from here may be of interest"

tourists. Lots of towns would jump at the chance to claim it as an asset. As an asset to your town it is a trifle too far south—about eight thousand miles—but you needn't go into details in that respect. Other towns don't—especially in the growing West. In the West there are towns that haven't even a laundry that claim the Rocky Mountains and the Pacific Ocean as assets.

It is hardly probable that you have many readers down here, as this isn't much of an agricultural country as yet. On the same grounds one might base the opinion that your readers elsewhere have few acquaintances in this locality. Still, I feel that a letter from here may be of interest and am hastening to write one before we leave.

We expect to leave here in a few days, as our dogs are restless to be on the move. Naturally their interest in the pole is transient, and apparently they do not think much of this region as an asset to the dog family. The whole one hundred and ten are sitting around the pole now howling with chilblains.

No One Has Gone Any Farther South

We have been here a week now looking around and are inclined to think this is the farthest south anyone has yet been. I doubt if anyone could beat it who is not familiar with the country. It will doubtless be a source of wonder to many why the South Pole wasn't discovered before. I have thought of this myself and have given the matter deep study. I have come to the conclusion that explorers failed to discover it in the past because they stopped too far north.

Now there was my old friend Borchgrevink. He came down this way several years ago, and a few months later he was picked up in New Zealand crazy as a woman who has lost her ticket. He told a weird tale of how he and a man by name of Hansen reached the spot where the pole ought to have stuck up, but couldn't see a thing of it. And then came the queerest part of his tale.

He said they chopped a hole in the ice and pulled out about thirty miles of it and cut it off. With untold suffering, while the thermometer stood at 387 below zero, they dragged it two thousand miles on snow-shoes. Just as they were about to load it into their boat Hansen stopped to blow on his fingers and fell into the sea with the whole business in his arms.

Poor Borchgrevink was never the same after that. He was honest in his belief that he and Hansen discovered the pole, but he was mistaken. What they found was a section of the old Atlantic cable which broke many years ago and was always supposed to have floated south. We found the hole they took it out of four hundred miles north of here. A piece of the cable was still sticking out of the hole.

Then there was Arctowsky. He was a Belgian gentleman, and his first name was Hendryk, or something like that. He came down here first to study the flora and fauna. If he had been content with that, he might have had quite a collection by this time. In our mind's eye we can see him now, with his mittens and ear-muffs laid aside, picking the flora with an ice-pick and romping with the fauna between times to keep warm.

But he wasn't satisfied. He concluded it was all level ice for five hundred miles around the pole, and he went home and got his auto. He thought he could dash up to the pole in it and shake hands and get back in a couple of days. Where is Hendryk Arctowsky now? Ask of the polar bear that stands on yonder mount and licks his chops and sniffs the air. Ask the antarctic fox that sits in yonder cave and whets its teeth on the sole of a hobnailed boot.

Picture Hendryk Arctowsky's last moments, with gasoline frozen and provisions gone, sitting beside his auto eating the rubber tires in a final stew and thinking of the meat he used to get at home! Picture him beneath his machine, on his back, making a last futile effort to unscrew a frozen nut with a frozen monkey-wrench!

But let us hope that such lingering agony was not his fate. Let us rather trust that when his iron auto started on the final hundred miles it leapt at the magnetic pole, like a carpet-tack at a toy magnet, and

I HAVE just run the South Pole to cover with one hundred and ten Eskimo dogs and four men, and brought it to bay at a point where escape is impossible. It put up a game fight at first and denied that it was the pole, but when surrounded it broke down and confessed. It is one of the finest little South Poles we have seen yet in all our travels.

You will probably be surprised to know that it is due south of your town. This is quite a distinction, and you should mention it in your booster literature. It ought to be an attraction to

stopped—and Hendryk Arctowsky went on and on and on and burst into the happy hunting-grounds untouched by the pangs of hunger or cold or the profane tooth of prowling beasts, and that we may meet him there in equally good condition. But I am drifting from my theme.

We found the pole in fairly good condition. It seems to have wintered well and does not show the signs of rotting off that many feared it might. Whoever put it up did a first-rate job and probably earned his money. There doesn't appear to have been any loot in the contract, and a grand-jury investigation will probably not be necessary. This is considered unusual at the present day.

The pole would probably have stood for several years yet, but to make sure of it we have turned it end for end and painted it red and blue. It looms up against its white background like a mortified thumb in a medical clinic. We have also let the belly-band of the antarctic circle out a couple of notches, and to-morrow we expect to knock the pole star to pieces and pack the fragments in a nail-keg for souvenirs. If there is anything down here that you want, wire me, and we will bring it up.

I haven't a word of complaint to make of the pole itself, but am of opinion that the person or persons who chose the site showed very poor judgment in not selecting a more accessible one. The pole is centrally located—in a way,—but it is off the beaten path of travel, and the weather around it is poor for tourists. Convenience and picturesqueness seem to have been



"Hansen stopped to blow on his fingers and fell into the sea"

sacrificed for central location, and the grandeur is thereby marred. It was marred for our party to the extent of eight or nine toes and several ears.

This is undoubtedly a very old country. Apparently when the earth came hot off the bat of creation this was the first spot to cool. At any rate it is quite cool at present. It must have started to cool early to be so free from humidity. Humanity probably camped here when the rest of the world was too hot to homestead. One thing that makes me think this was the cradle of the race is that the dogs have dug up a large chunk of whalebone that resembles a rocker.

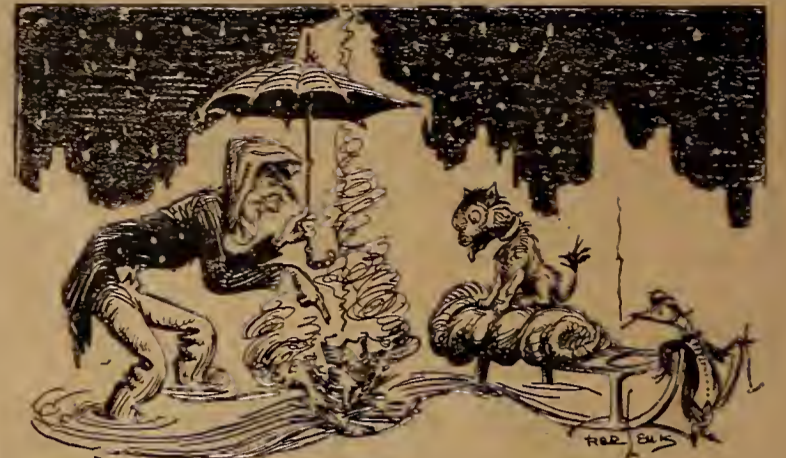
The South Pole Resembles California

In many respects this country reminds me of California. "There isn't a night the whole year through but what you can sleep comfortably under blankets"—generally eighteen or twenty of them. This is a great country for "ten-acre tracts." There are lots of them from which "a man could easily take off \$40,000 worth" of ice three or four times a year, and "with a few chickens and a cow he could live nicely and soon become independent." He would probably

have to live with the cow to keep her from coming in every evening with two gallons of ice-cream. Hay is scarce.

They tell me the past season has been an "unusual season" down here. They always tell a fellow when he is new to the country that the bad weather they are having is "unusual." This keeps him in good cheer till he gets used to it and the unusualness of it wears off, and in a short time he gets so he can stuff a tourist as artistically as an old-timer. Winter came dragging along last year about the first of April and continued all summer, and then summer started in and lasted all winter, and they were so much alike that it was hard to raise any garden. Many object to the climate on that account.

At present the country is very thinly settled and business is dull. Crops were poor last year, owing to late frosts. Money is scarce. The banks here are principally snow-banks and many of them are unable to liquidate. A number of the small ones failed last summer. The people think business will pick up as soon as the campaign is over, but many



"We have been compelled to camp out"

of the new arrivals have cold feet and want to get away. The principal industry here is the production of ice, and the country is suffering from overproduction. Owing to the country's isolation, there is very little ice shipped in; but it doesn't help matters much, as local conditions give the large producer a monopoly anyhow, and the small concern is quickly frozen out. It is the same with the cold-storage business. Some of the largest cold-storage establishments in the world are to be found here, and all of them seem to be under one management. I did not learn the manager's name.

I have been thinking for some days that when this country becomes more thickly settled a stove foundry would do well here, and possibly a woolen mill. The coal-mining industry also ought to pay when the influx of settlers starts. There is still plenty of homestead land waiting to be taken up. Much of it would raise splendid crops if climatic conditions were different. Possibly if large areas of it were put under cultivation—with an ice-plow—the weather would change, as it has in the Middle West.

Hotel Facilities are Poor

What this country needs most is better railroad facilities and more first-class hotels. We were unable to obtain accommodations at any price and have been compelled to camp out. It isn't the camping season either.

They say they will have better facilities when the country settles up—but it isn't settling up as fast as it might. I believe it would settle up much faster if more people would move in. However, this is merely an opinion. The problem of settling up a country is an old one and must be met by different methods in different localities. Lots of times people move into a country, and still it doesn't settle up. Sometimes it can't settle up, and the people won't settle down. Sometimes even the people don't settle up. Sometimes the country settles up and the people settle down, and that settles it.

The definite location of the pole ought to have a beneficial effect on business. Doubt as to where it was made real estate unsteady. If the people will now do their house-cleaning and put in a little garden and forget about their taxes, we ought to have better times.

Social conditions should also improve with the knowledge that the earth is, after all, a small affair and has no appendix or summer kitchen or anything left to explore. It is a mere island in a sea of space—too small to fight on or quarrel about. We should be more sociable and not get puffed up because we have been around some. The wicked should also be convinced that it is safest to be good, since there is no place left to hide.

It used to be that a fellow could cross the Mississippi River and change his name and be a respected citizen—or at least a congressman. That day is long past now. Railroads and steamships and telegraphs and telephones and autos and flying-machines are so numerous that a fellow gets caught while he is changing his name, and long before he gets started on his career as a respected citizen he is doing time in a suit of clothes that makes him look like a zebra.

I must close now and retire. This is a great country to sleep in. The winter nights are long, and there isn't much to do. Sometimes a fellow will go to bed at dusk in April and not wake till sunup in October. As a general thing one arises refreshed and with an appetite for breakfast.

But, as I said, the climate is poor for the crops that are relished by man. In fact, there are only a few crops in which the animals take delight. But, as the animals here are few, that part of the discussion is fruitless. The point that is prominent (other than the pole itself) is the fact that breakfasts, even though we do have appetites, are difficult to obtain in Waldorf-Astoria style.

P. S.—They say the earth stands at a slant, with the south end lower than the north. I am also informed the center of the earth is in molten form. I am figuring on a plan now to tunnel straight into the tip end several hundred miles and let the insides run out. I believe it would put a stop to earthquakes.



"Ask of the polar bear"



Hendryk romped, time and again, with Flora and Fauna, the little South Pole twins

Defeating Jack Frost

A Personal Message to Every Northern and Southern Gardener for This Winter and Next Spring

By Charles Alma Byers

IT IS only another way of stating the early-bird axiom to say that it is the truck-gardener who can get his products to the market earliest that reaps the richest harvest. With this realization spurring them on, there is always the keenest rivalry between the more progressive of the truck-gardeners, and after they are thus led to gamble with Jack Frost with dire results. Situations of this kind invariably, sooner or later, produce a genius, and it is afterward only strange that the said genius was not developed sooner, since his "scheme" or invention always seems so simple.

To an enterprising gardener by the name of A. G. O'Brien, who lives at Signal Hill, near Los Angeles, California, belongs this distinction in the truck-gardening business, and extremely simple indeed is his way of successfully coping with the belated and uncertain visitations of the frost imp. Since his idea is not patentable however, he will be able to badly beat his rivals but once, and that, of course, was the first time he put it into practice, which was the past winter. Already his idea is being extensively copied in southern California, and it will be but a short time until it is in common use throughout the country.

The O'Brien idea simply consists in covering the area planted with tender vegetables or berries with muslin. The plot of ground is first surrounded with boards, an inch thick and a foot wide, set edgewise and strongly braced. Stakes are then driven over the area in rows, running diagonally, at intervals each way of about five feet, the tops of which stakes are on a level with the top edge of the enclosing boards. Galvanized wires are stretched over the enclosure, likewise running diagonally, and fastened to the tops of the stakes. Next comes the preparation of the muslin. The cloth, a yard wide and of cheap quality, is purchased by the bolt. It is stitched together in long strips of double width, and then along either edge of these strips are inserted eyelets or fastened small loops of cloth. These eyelets or loops fit either over hooks in the enclosing boards or are employed in the lacing together of the various strips. The arrangement is such as to facilitate the removal of the muslin when irrigating, cultivating, and picking is required.

O'Brien first experimented with but two acres of cucumbers. He planted his seed in the fall, and

marketed his crop shortly after the Christmas holidays. When he appeared in the Los Angeles market with the very much out-of-season product, the produce dealers at first stared at him in wonder, and then, recovering from their surprise, proceeded to eagerly snap up the cucumbers at almost fabulous prices. From the two acres he realized a profit of nearly \$4,000.

News of the success of the experiment spread rapidly, and in but comparatively a short while the district became liberally dotted with the cloth-covered gardens. Many of the dry-goods stores were depleted of their stock of cheap muslin, and as fast as the cloth could be prepared gardens of cucumbers and strawberries were transformed into strange-looking plots of white. The Japanese truck-gardeners were particularly quick to adopt the idea, and early spring found not less than fifty acres of garden truck, principally cucumbers and strawberries, thus covered with this sort of cloth.

The cost of covering an acre of ground in this man-



Here the cloth is partly removed to allow irrigation and cultivation

ner is about \$200. Since the market for out-of-season garden products is always so promising however, this first cost is easily forgotten. The profit realized by Mr. O'Brien from his first crop of cucumbers thus grown, in fact, makes this cost seem almost *nil*. But hereafter no man will probably ever enjoy such a monopoly. Be that as it may, however, there is sure to be a big profit in it. The growers who were able to adopt the idea soon enough to beat the regular truck-gardeners in the spring market of 1912 will reap net profits ranging from \$900 to about \$1,400 per acre, from either cucumbers or strawberries. These same growers are already planning for the coming winter, and those who have studied the matter carefully believe they will be able to sell midwinter strawberries, which they are confident they can raise, at an average price of twenty cents per box, which means that the profit will be about \$1,500 per acre.

While the principal excuse for covering the gardens with cloth is to prevent damage from possible frosts, which, however, are far from common during a winter in this section of southern California, the growers are finding that the adoption of the plan is proving extremely beneficial in aiding irrigation work and in equalizing temperatures. The amount of cultivation is lessened and the work of picking facilitated.

The Easterner will find the idea adaptable only for early spring planting, but for that alone it should prove highly profitable. It should enable him to plant something like a month earlier, and in vegetable-growing a month's start is often very important. The cloth, being provided with eyelets or loops, can be easily removed when not in use, and thus rolled up and stored away.



The cloth-covered fields where midwinter cucumbers and strawberries are grown

Your Share of a Buried Treasure

By C. H. Claudy

DIGGING in the ground for the buried loot of long-dead pirates and buccaneers has always had fascination, even for the most prosaic. Hardly a man but would dig, and dig hard and deep, if there were but the wildest probability that he could find a pot of gold or a chest of doubloons seven paces east and nine and a half north of the tip of the shadow of his oldest apple-tree! Reaping where another has sown,



Two horses, twelve bales, twenty miles per day

getting something for little or nothing,—these be joyous events to us all! Indeed, they may be to the farmer.

But there is a form of treasure buried in earth and mud which every man who uses a road, every farmer who owns a horse, every planter who hauls crops to market, can dig up, if he only will. The treasure is there, buried deep in the mud and slime of rotten roads,—he can have it if he will.

This is not mere fanciful play on words. It is a fact. If you who read this live on or near any kind of a road not improved, you can go and dig up perfectly good money, if you only will.

Accompanying this statement are two pictures. They are actual photographs of actual scenes. One shows a man driving two horses and a wagon to market, his "heavy" load consisting of one bale of cotton. He does not carry more than one bale of cotton because his horses are not strong enough. He can make only one trip a day because the market—or railway station—is nine miles from the place where his cotton was baled. He is a small planter, and he has only twenty-four bales of cotton for his crop. He does not expect to make a fortune on his cotton, but he does want to make a profit.

It takes his two horses and his one driver twenty-four days to haul his crop to market. You can add up any wage you want for the driver and estimate for yourself the cost of feeding the horses. You also know the value of one man's labor and that of two horses on a small farm or plantation. This value is lost to the small planter because his horses and his man are engaged in fighting the mud.

But let us be very conservative and say the driver gets fifty cents a day and that it costs another fifty cents a day to feed and stable the horses. It costs the planter, then, a dollar a bale to haul his crop to market and another dollar a day to hire a second team and man to do farm work for the twenty-four days his own team is busy hauling. The farmer, then, is really "out" almost fifty dollars to get his work done and his cotton hauled to market, and this takes no account of the wear and tear on his team and his wagon and the liability he runs of injury to his horses.

Now look at the other picture. Here a farmer has two horses and one driver, but because he has a road and not a mud-wallow to drive over he can carry twelve bales of cotton in one load, and he can make two trips per day, carrying twenty-four bales in one day, from his home to the railway station. That means a big saving to him.

His expense by the day is the same as the other man's; that is, fifty cents to the driver, fifty for the horses and the same for a team to work on the farm while his team is in use hauling. Total, \$2.

The difference, \$46, is this man's share of treasure buried in mud. He has a good road. He has dug up his loot. The first man has trampled almost half a hundred dollars into the mud with every step his horses take!

And this is for one crop and one hauling!

Now, of course, bad roads are not always as bad as those shown in the first picture, nor are good roads always so good as those shown in the second picture. Nor is the amount of money set forth here as an example anything but imaginary. The man may get a dollar a day or ten cents a day, the horses may take two dollars a day for fodder and care, or cost next to nothing. No matter what the actual costs may be, you can't get away from the fact that one man and two horses need twenty-

four days on the bad road to do the same work the same man and the same horses can do in one day on the good road.

But here are some figures which are *under* the established facts; they minimize rather than emphasize the true conditions. There are more than 200,000,000 tons of farm products hauled over the roads of the United States every year. The average distance—the mean of the great and the least—from farm to market, is 9.4 miles. The average costs of hauling in the United States is from twenty-three to twenty-five cents per ton per mile. The average cost on the good roads only of this country is from ten to twelve cents per mile.

Multiply 9.4 (average distance) by twenty-three cents (average cost per ton per mile) by 200,000,000 (minimum tonnage hauled), and the result is the tidy sum of \$432,400,000 spent yearly in hauling by the farmers of this country. If the cost of hauling were cut in half, they would save \$216,200,000, which would build nearly 100,000 miles of good roads, all by itself!

Please note carefully that the average cost of hauling is more than cut in half on the good roads of this country. When Captain Kidd buried treasure, he had gold and precious stones, jewels and money, objects of art and silver and gems of all kinds.

Look once more at these pictures, then at your own road. Remember, roads do not build themselves. They do pay for themselves when built, but some man has to finance and build them first. What are you going to do about your share of buried money? Do you answer?



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The Market Outlook

The Small Corn Ration

I DO NOT think we are reckoning on too much corn. The crop will be immense and in quantities, where corn is not generally reckoned on. I fully expect to buy corn here at Sioux City for forty cents, and even less if the frost holds off until October 1st. Corn is spotted all over, as regards maturity, but even now (as I write) seventy per cent. of my own corn is safe, and I should say that thirty-five to forty per cent. of the country around me is safe. The demand for corn and hay will not be heavy, as the shortage of cattle is here, and it's here to stay for a while.

Hay and pasture are the best I have ever seen. Alfalfa seeded in April is yielding three-fourths ton to the acre. Even now I notice that the farmers are slacking up and getting careless in their hay-making. Isn't it strange how soon they forget a year like last year? One would naturally think every scrap of feed would be saved and stored up. I am trying my level best to scratch up all available roughage so that I can keep more cattle, as, unless we have a presidential panic, the next seven months will be great months for the men who handle live stock, and disappointing ones for the grain farmers. Secretary Wilson thinks we will have cheaper beef on account of large crops. Well, maybe we will. I know, personally, if the 350 head of cattle I have contracted for at \$6.25 sell next June for \$8.50 locally, which is \$1.25 less than this year, I'll be well satisfied.

I believe the pasture problem to be the greatest one to-day before the American farmer on high-priced land. It all comes back to the same point. The man who gets ahead in farming is the man who keeps just a few years ahead of the crowd. They laughed at me a few years ago, down at Ames, when I claimed it cost too much to crowd high-priced corn, ad libitum, into steers, and now the Montana station comes out with a bulletin showing the most profitable results from a small corn ration and cheap roughage and pasture. Economy of production will in a few years turn our best lands into pasture, not, as now, our poorest—with pasture a misnomer ten months out of the twelve.

I am receiving a good many letters from agricultural papers, asking for articles. One received the other day was amusing. It said, "Kindly write us what kind of cattle the farmers should buy to make money. Take a column if you like. We pay \$2.50 per column."

I'd give \$1,000 for that information.
W. S. A. SMITH, Iowa.

Hog-Market Changes

THE bullish appearance that the hog-market wore the early part of September was changed suddenly about the middle of the month. Up till that time the demand of the eastern shippers was large, and this in turn encouraged speculation. The large packers with goodly supplies in their cellars took a secondary place in the market and let the shippers and speculators carry the prices upward. In the meantime demand for cured meats increased, and the stocks left the cellars at a good figure, much of it going to the Southern States. Later on eastern shippers were able to obtain supplies at home, and so did not compete at Chicago. This also discouraged speculation and left the large packers the primary factors in the market. With their large stocks gone, there was no benefit to them to maintain the high prices, and with no competition they were able to

force the market down quite rapidly. The choice medium weights which had received the greatest advance suffered the most, while packer stuff declined but half as much.

It appears that the packers are endeavoring to bear down the price so that before long they may begin to fill their cellars again at as moderate a figure as possible after the winter run has begun to swell the receipts.

At present the market remains on a fresh-meat basis and but little of the slaughtered meat is placed in the cellars; more going out than is entering. With the disappearance of the shipper, the sorting out of the prime shipping weights has been discontinued, and the offerings go to the killers in the mixed hunches much as they are received.

While prices were on the upward trend, everyone in the market circles was bullish about the immediate future, but since the turn they are equally bearish. They seem to have overlooked the supply and demand for cured pork and the supply in the East just ready for market.

In the provisions-market the demand has been strong, and considerable stock has changed hands at slightly lower prices. The South continues to be a heavy buyer. In case there is a considerable decline in prices, Europe can be expected to be a heavy buyer, as the supply there is short.

L. K. BROWN, South Dakota.

Why Western Lambs Pay

BY THE middle of September the sheep-market had assumed a much livelier tone in all its branches, and prices were moving steadily upward. Buffalo, New York, had choice lambs touching the \$8.25 mark; Chicago, \$7.70, and Kansas City, on a day on which its pens were crowded with the largest run it had ever known—30,500 sheep and lambs,—cleared out nearly everything at good prices, top lambs reaching \$7.40, with

For Business Farmers

ON PAGE 18 appears the third instalment of the series of articles by Mr. H. J. Minnhinnick, the telephone expert. These articles are for the farmer who is up-to-date in his buying and selling methods. Good telephones are needed everywhere. These articles show why some telephones are bad.

culls in good demand at \$6.25. Choice feeder lambs ranged from \$6.25 to \$6.60; feeder yearlings from \$5.50 to \$5.85; ewes and wethers, \$4.50 to \$4.65.

Quite a competition seems to have arisen between packers and feeders for lambs and yearlings which usually would have been left for the latter. This mostly ends in these, as well as many light-weight ewes and wethers, getting onto the table of the incautious housewife as "real lamb, madam," which means thirty to thirty-five cents a pound for chops, with other cuts in proportion. The following from Clay, Robinson & Co's Live Stock Report, for the week ending September 14th, shows the state of the market at that time for the past three years:

	Sheep	Lambs
	Top	Top
This week	\$4.75	\$7.70
Last week.....	4.65	7.45
Year ago.....	4.10	6.25
2 years ago.....	4.65	7.20
3 years ago.....	5.25	7.55

For some time past I have been trying to discover a plausible reason why western sheep, and especially lambs, have been commanding from ten to twenty-five cents per hundredweight more than natives, the latter being generally the output of the farmers of the corn belt and of some of the Southern States. The answer is, I think, to be found in the fact that the range sheepmen have learned the lesson that the best investment they can make is that which secures to them the best pure-bred rams of whichever of the mutton breeds they prefer regardless of cost, while the farmer still is too proud to adhere to the old-fashioned belief that the nondescript \$5 or \$10 ram is good enough. I have just met with an instance of one of the very best known importers and breeders of sheep for stud purposes, who has this season sold, mostly to western men, sixty Shropshire rams at an average of something over \$80, and a number of ewes at about \$50. Plenty of guaranteed pure-bred rams, not fancy prize animals, but—and which is better—good, sound, healthy and true-to-type, just the kind which are sure to stamp on their progeny their most desirable qualities as producers of mutton and wool, can be had for from \$30 to \$40. Such sheep as these will serve for a flock of fifty ewes, and put anywhere from twenty-five to fifty cents per hundredweight more on their lambs than can be hoped for in the best of scrubs. Where neighbors have small flocks of ewes, how easy would it be to combine to buy two or three of such rams at from two to four years old, and change about from season to season. In this way the lamb product of any neighborhood will become favorably known.

JOHN PICKERING ROSS, Illinois.

Some Chances for the Rural Commission Dealer

COMMISSION work can be successfully handled on the farm by young men or women, and it can be undertaken by an individual or by a group of persons. The group seems to be most successful, for commission work is rather a large proposition for one to handle alone.

One person can scarcely do everything and make enough to succeed, particularly the first winter. Then, too, illness or pleasures or other things may make it impossible for the individual to carry out the contract, and failure to "deliver the goods" is, of course, fatal to the success of the undertaking. It is better for two or more congenial young people to take up this work.

Where some young person in the neighborhood goes to the city regularly, the method is very simple. The customers are secured, the goods packed and the young person in the city looks after the delivery in person. Often a large hamper can be checked. Thus express and freight charges are saved and there are no middlemen's profits to come from the produce. It goes without saying that everything must be exactly as represented, or the whole thing will fail at once. It also goes without saying that everything must look attractive. In summer carrying butter through the hot sun on a train would be out of the question, but in winter it will be hard and firm and good-looking when delivered, even though it may have been several hours on the way.

No one who has tried this will say that it is easy or pleasant work, but it is profitable. One group of young people who ship barrels of produce to city hoarding-houses and to private customers have found it anything but pleasant in bitter weather, when the country must be ransacked to get the right articles, but it is very paying, and they can stand the discomfort. When the weather is mild, the work is not hard, but cold or warm in winter these young folks are regular and prompt with their shipments. They pack everything so attractively that it cannot fail to sell, and the quality is always the best. Cottage cheese, grated horseradish, country sausage, home-made fruit cake, preserves, pickles, nuts, apples, winter vegetables, pop-corn, eggs, butter, lard, smoked meats, game, Christmas greens, pears and all the other available products of the farm find their way to those well-packed hampers and barrels. They were wise enough to cater to people who are willing to pay fancy prices for fancy articles. Their winters are now more profitable than their summers, though they do not work quite so hard, nor so steadily as in hot weather.

Commission work trains the mind and hands and the patience of the young person as nothing else can. To want to give the most possible for the money and have the produce of the highest quality is the aim of the successful amateur produce-dealer, and that in itself is one of the most profitable things about the whole business. The utilizing of the things usually counted worthless on the farm is another. Both of these lead young folks to see that it is not the size of the farm that counts so much as turning every crop to account, making winter as profitable as summer. Mrs. W. C. KOHLER.

Examine closely every can of mill-grain fed to stock, for often loose nails, tacks, tin, etc., from chutes or thrasher get in the feed and are liable to be swallowed unnoticed by a bolting eater and cause death.

One Way of Doing It

THERE has been considerable comment on the methods of commission men. The commission man is not to blame, in my way of thinking, because no farm products should be raised unless they are contracted for.

In our community we have three canning-factories, and a salting station also, for pickles, at each place. These towns are seven, five and four miles from my place. What the farmers ought to do is to hustle around and find out what they can get for what they plant and then try to grow as much as possible on a single acre. An acre well cared for is better than four acres of poor land poorly tended. I put a good big double handful of manure in each hill of pickles I planted, and I have about one acre. Some work, but it pays. I have one of the best pickle-patches in our community and all due to doing the things that ought to be done at the right time. I also have tomatoes and beans contracted by the canning-factory. No commission man can do me this year. These goods are all paid for as fast as delivered. Anything a farmer cannot hold should be contracted for before grown. I contracted my strawberries for sixty cents a crate, and a neighbor of mine got seventy cents—the canning-factory furnished the crates.

You don't need to contract hay, corn, oats. You can hold that for your price. Hogs should be raised on contract. They cannot be held with profit after a certain age and weight. When goods are made in factories, they are sold according to what it costs to make them.

Why should a farmer take so many chances on what he is to get for his products?
W. R. PAIGE.

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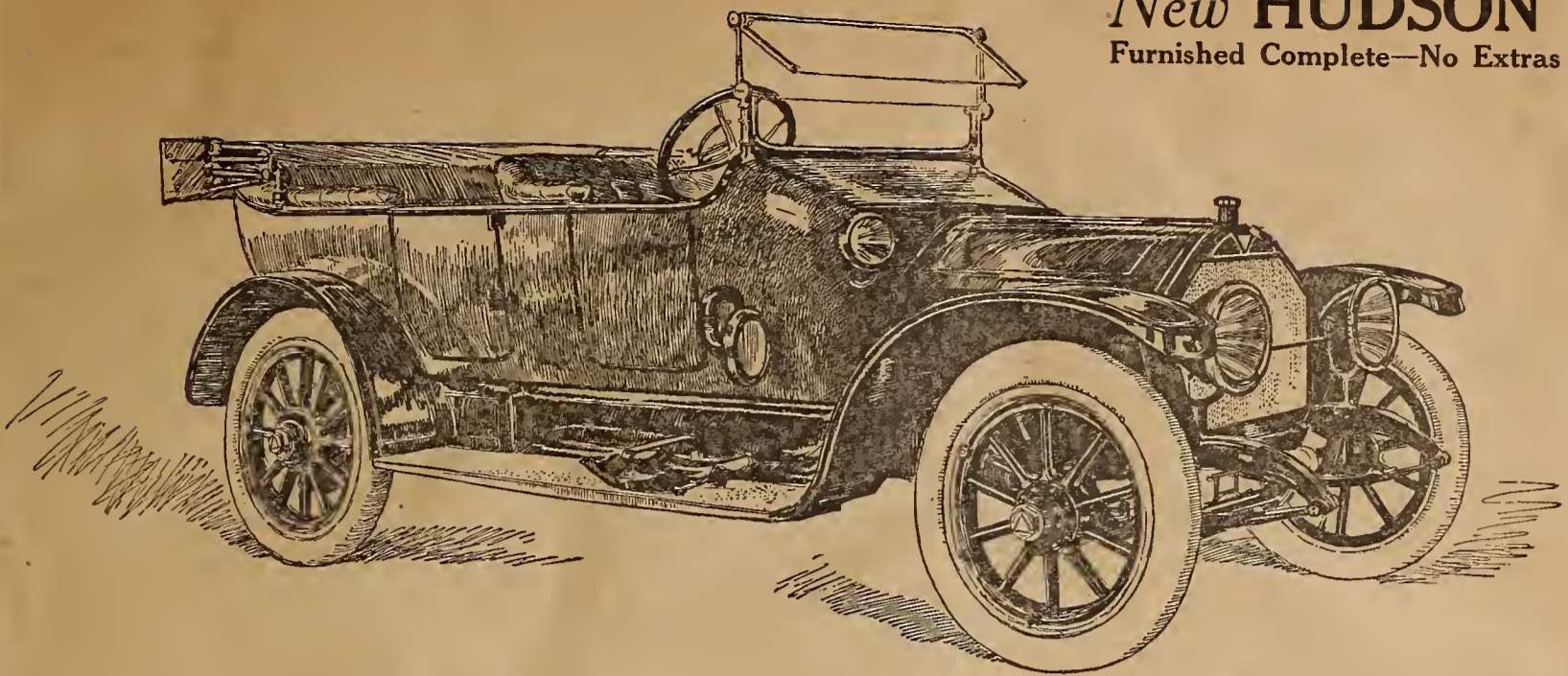
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But, working alone, he is not capable of building an automobile equal to the New HUDSON "37."

A New Idea

For more than two years Mr. Coffin has been organizing this staff of engineers. There are 48 now. They have been gathered from all the automobile building nations—from France, Germany, England, Belgium and Austria. They came from 97 different factories. Combined they have had a hand in building more than 200,000 cars.

It is carrying out the idea of team work which is the foundation upon which all successful concerns are now built.

Experts specially fitted to do certain kinds of work combined their knowledge. Therefore the HUDSON "37" represents more than that which any one man could do. Even Mr. Coffin, with his wide knowledge and recognized ability in creating new ideas, would fall short in an endeavor to build a car equal to the HUDSON "37."

Automobiles have heretofore been designed usually by one man, just as Mr. Coffin, in all

his previous cars has depended principally upon his own ability.

Into the cars of any one man is combined the experience and ability of the individual. There also is incorporated into such cars all the errors and hobbies, some of them impracticable, that any individual is very apt to overlook.

Are Mistakes Probable Under Such Conditions?

We fortify ourselves against error by focusing upon every detail the combined skill and experience of as many experts as we can obtain.

We do not limit ourselves. Whenever a man is found who can do work better than any one else and we have need for such work, that man is induced to join this organization.

That is why there are 48 engineers in this company—the largest number employed by any automobile manufacturer in the industry, and that is why HUDSON cars go out without mistakes. That is why there has been no error

in judgment. Experience is not bought at the expense of the buyer after the car is in his hands. It is paid for out of the combined experience of the men who build the car. We pay it in salaries and not in replacements. Yet many of these men are substantially interested in the Hudson Motor Car Company.

The Hudson Motor Car Company is not owned by individuals who do not contribute to the success of the business. With the exception of one holder of a small amount of stock, everyone interested in this Company is actively engaged in its operation. Consequently no earnings must be made for brains that are not responsible for those earnings.

There is no large overhead—no water. That accounts, in addition to the value of brains in the engineering—in addition to the elimination of error, for the fact that in the HUDSON "37" is given a quality not obtainable in any other car and never possible under any other conditions.

Electric Self-Cranking—Electrically Lighted

Some Will Advise You to Wait

Some may say to you "The HUDSON '37' is a new car. Wait and see what it does during its first year. Get some older car—one that has been developed slowly, that has been improved year after year, but which is a radical change from the leading engineering practices."

That was sound advice when no builder had had experience. It is sound advice as applied to any car built by any one man. It does not apply to the HUDSON "37" which is the result of the experience of these 48 men gained in 97 factories in building over 200,000 cars.

What These 48 Men Have Done

The HUDSON "37" is electrically self-cranking and electrically lighted. It is fully equipped; has 12-inch upholstery, top, rain vision windshield, a motor which develops 37-43 horsepower, speedometer, clock, 36 x 4 inch wheels, 118-inch wheel base, tools and other equipment.

Therefore it has the best quality we know how to produce. Every detail of luxury is developed to the highest degree. The car is entirely operated from the driver's seat. Lights are controlled from the dash. All oiling places are conveniently located.

The price of either the Five-Passenger Touring Car, the Torpedo or Roadster models is \$1875, f. o. b. Detroit.

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Poultry-Raising

Fall Chicks Make Spring Broilers

DURING the autumn months chicks may be hatched with either hens or incubators and raised at a profit. They require more care, of course, than spring-hatched chicks, but to offset this they bring much higher prices, as a rule. Chicks hatched in October and November should be ready for sale in the later part of the winter or early spring. There is little danger of the markets ever being oversupplied.

Late-hatched chicks rarely make as rapid growth as those hatched earlier in the season. In spite of everything that we have ever tried, in the way of food and care, they refuse to attain as large size as the early ones. But if they are properly fed and sheltered through the cold weather, fall-hatched chicks will usually be strong and vigorous. However, there is no advantage in hatching late chicks, except for market purposes.

Select eggs from large hens. If incubators are used to hatch the eggs, be careful to keep the heat normal. Otherwise, the chicks will not be normal. Always keep this in mind when hatching with incubators. If hens are used, see that they are properly fed and cared for while sitting. We feed the sitters every day, regularly. If they refuse to come off their nests, they are carefully lifted off and forced to take some exercise before being fed. Whole corn is the usual ration for sitting hens. Never give the sitters sloppy feed or cooked mash. This sort of feeding will cause "scours," which is often mistaken for cholera. See that the sitters get some grass and also clean water. If the sitting hens are in a house by themselves, they are very easily cared for and are not so apt to be bothered with vermin. We always provide fresh nest-material and also use insect-powder liberally to keep down the lice. If the average poultry-raiser would give the sitting hens as good care as the incubator requires, there would be fewer complaints about hens dying or leaving their nests.

Before the chicks hatch, provide a comfortable house, with a number of brooders or a small stove, to be used while the chicks are young. No matter if hens are used to do the hatching, they are always a nuisance among the chicks when they have to be kept housed. If a stove is used, it should be enclosed with fine-mesh netting.

The building should be large enough for the chicks to have plenty of floor space, for, of course, they will have to be kept indoors the greater part of the time when the weather is cold. If possible, have doors and windows on the south side of the house. Almost any ordinary building can be converted into a winter chick-house, providing it has a good floor and a good roof. If only a few chicks are to be raised, it would not be advisable to build a house especially for the purpose. If the walls are not close

enough to keep out the cold, nail strips on all open spaces." If the house has a board floor, it should be made close, same as the walls. Either paper the walls with heavy paper, or cover the entire outside of the house with tarred building-paper. This paper is not expensive and will last for several years, if given a coat of pitch. It even makes a fairly good roof for houses and coops. Don't try to convert a hen-house into a chick-house. There may be vermin in the floor or walls. Cover the floor several inches deep with clean litter, cut straw or clover. Never use sawdust. If brooders are used, cover floors with heavy paper, then scatter litter, or something of the sort, over the paper. This should be removed every day and burned. By this method a great deal of work is saved.

Be Clean, If You Would Win

Needless to say, everything should be kept as clean as possible. If there is any chance for vermin, the chicks will need to be watched carefully. A preventive is better than a cure; but if lice get a start, in spite of all efforts to prevent, as they sometimes will do, the surest way to get rid of them is to apply a little vaseline wherever the lice are found. Olive-oil or castor-oil may be used instead of vaseline. Examine each chick carefully. Remember, the oil must come in contact with the lice, in order to be effective. Never use kerosene or lard on chicks. A large yard should be enclosed so that the chicks can be turned out-of-doors for exercise when the weather is not too cold. One advantage in having doors on the south side is that the yard can then be enclosed on that side. Doors and windows should be fitted with screens made of fine-mesh poultry-netting. Ordinary door-screen material may be used instead of poultry-netting, but it is more expensive and will not last as long. After the chicks are all feathered, it will do no harm to leave both windows and doors open, with screens closed, for a little while each day, if the weather is not severe. When the weather is good, they should be allowed to stay in the yard. Have plenty of scratching-material on the ground so that they can be kept busy while out in the open. A little wheat or cracked corn will help to keep chicks busy.

Furnishing the chicks with the proper amount of animal food is one of the problems with which we have to contend. Then, a supply of green stuff must be kept on hand, or a substitute provided.

To Feed Well Is Essential

A little fresh beef or game twice a week is a great help to the chicks. It may be ground through a food-chopper. We also use the food-chopper for cutting cabbage, raw potatoes, small apples, onions, etc., for the chicks. These take the place of green food. During the first week we feed young chicks hard-boiled eggs and stale bread mixed together dry, with a little coarse sand added, or the egg-shells crushed fine. Also, some finely chopped onions, celery-tops or cabbage. Then the boiled eggs are left out and some steel-cut oatmeal added. Sometimes we omit the eggs after the second day and use the bread and oatmeal. In this case the oats should be soaked a little before feeding. Ordinary rolled oats need not be soaked. Chick-feed is nearly always boiled before it is used. Some of the commercial chick-feeds give far better results cooked than when fed dry. It is difficult to induce a chick to eat enough grit to grind grains, especially some of those found in some of the chick-feeds now on the market; namely, the inferior brands. Cracked corn and whole wheat cooked together and allowed to become quite cold before feeding will always give good results.

Both may be fed dry if a dry ration is liked, but as a rule winter-chicks grow faster on cooked feed.

ANNA WADE GALLIGHER.

Hens or Pullets?

NO MATTER how successful we may become in any business, we are trying all the time to find how we may increase our profits. To increase our profits means, of course, an increase in the output of our goods, whatever it may be. Poultrymen are now debating whether the hen or pullet is capable of the greater egg production. There is good argument on both sides.

Some claim that, while hens lay less than pullets, they lay larger and heavier eggs, and because of this fact, the eggs command a better price than those laid by pullets. This is true, but in many sections of the United States eggs are sold without grading, and, consequently, the smaller egg is able to command as good a price as the larger one.

Others are in favor of pullets, because they lay so many eggs which, they claim, possess a better flavor than those laid by hens. No one disputes the fact that pullets lay more eggs than hens.

The question of which is the better, hens or pullets, will never be answered so that it will please everyone. It is simply a matter of the likes and dislikes of the individual poultryman.

Personally, the writer favors pullets. There are a very few of them that lay under-sized eggs, and if he wishes, the poultryman can easily cull them out. The average

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Thanksgiving Poultry

Now is the particular season when every poultryman is preparing his surplus stock for market. The old hens, roosters and young cockerels will be headed for the Thanksgiving market, where good prices prevail. The uppermost thought in every poultryman's mind is how to make them weigh the very last ounce. Keep them well and singing. There is just one natural way for this, and that is by feeding Dr. Hess Poultry Pan-a-ce-a. It tones every organ; it drives out every disease germ.

Dr. Hess Poultry Pan-a-ce-a

It starts the young pullets to laying, gets the old hens ready for winter duty. Pan-a-ce-a reminds Miss Hen that growing feathers and getting fat and lazy is not her only business. It compels every hen to put her share of eggs in the market basket, by toning up the dormant egg organs. The panel tells just what Pan-a-ce-a consists of and what the U. S. dispensary says every ingredient is for.

Our proposition. You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it fails to make your hens lay more eggs right now, when eggs are high, and to keep your poultry healthy; also to start the pullets to early laying, he is authorized by us to refund your money. 1½ lbs. 25c (mail or express 40c); 5 lbs. 60c; 12 lbs. \$1.25; 25-lb. pail \$2.50 (except in Canada and extreme West). If your dealer cannot supply you, we will. Send 2c for Dr. Hess 48-page Poultry Book, free.

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INSTANT LOUSE KILLER KILLS LICE

Leghorn pullet commences to lay when about six months of age, while many of them start at five months. Therefore, it is a very easy matter to raise pullets so that they will be laying the winter after they are hatched.

The eggs of pullets do not hatch as well as those of hens. Not only that, but the chicks do not seem nearly so strong and lively as those hatched from hen eggs. For this reason, then, the writer would advise pullets for market eggs and hens for breeders.

The falling off of the number of eggs from the first year to the second year of the hen's life is about fifty eggs. This is quite an item, and because of this fact many claim that a hen does not pay her board. At the average price of eggs during the winter, fifty eggs would mean about two dollars in money, which is quite a loss for each hen.

Hens that are kept for breeders should be ones that have never been forced for heavy egg production. Because of the terrible strain on their reproductive systems, the larger per cent. of their eggs are infertile, and what chicks do hatch are weak.

CHESLA SHERLOCK.

Ducks

IT TAKES four weeks of profound uncertainty to hatch ducks, after which they proceed to grow up, sectionally, in the following order: (1) their bills, (2) their feet, (3) the duck proper.

If anything had been created in vain, ducks would prove that it wasn't, by eating it.

Each shining hour seems to be plenty good enough, just as it stands, for ducks. For as often as they catch the busy little bee improving it, they swallow him on the spot.

The duck never lays a golden egg, being no such goose.

RAMSEY BENSON.

How to Make Farm Poultry Pay Better Dividends

WITH the surplus poultry products of Missouri for 1910 estimated by the State Bureau of Labor to be worth \$30,766,257, \$8,000,000 more than their estimate for sur-



A cheap colony hen-house in use at the Missouri Poultry Experiment Station at Mountain Grove, Missouri. It is 6 by 6 feet on the ground and 6 feet high. It has a board floor, built on runners, and so can easily be pulled by one horse to fresh ground in the orchard or along the edge of the corn-field. One hen with seventy-nine chicks used this house last summer until seventy-five of the chicks averaged three pounds each. The cost of this house complete is \$15, which, of course, recommends it.

plus farm crops, a great many people are asking why poultry on the farm does not pay better dividends.

The main reason is that the average egg production is only about seventy-five per hen a year, according to government statistics, whereas it should be not less than 150. Eggs constitute three fifths of the value of

breed produced only 369 eggs, and the lowest pen produced only 207 eggs, a few more than one third of the highest number. Out of fourteen pens of Barred Plymouth Rocks the highest record was 580 eggs and the lowest 217 eggs.

The Single-Combed White Leghorns have been the popular egg-producing breed, but out of eighteen pens in the contest one from California holds the high record with 548 eggs, while seven of the pens have less than 500 eggs each and seven other pens could not even reach the 400-egg mark.

A White Plymouth Rock pullet laid an egg a day for seventy-two consecutive days up to June 14th, which probably is a world record for continuous egg production. Her owner has given particular attention to breeding for egg production in connection with reproducing birds from his finest show-room stock. In fact, there is not a pen among the leaders in egg production which are not the result of several years' careful mating and breeding. Very few high-record egg-producing hens just happen to be such.

The twelve highest individual records made during the first seven months of the contest are as follows:

No. 541, White Orpington	.....156	eggs
" 341, S. C. Rhode Island Red	..155	"
" 572, R. C. Rhode Island Red	..151	"
" 717, White Plymouth Rock	....150	"
" 79, R. C. White Leghorn	....148	"
" 402, Silver Wyandotte	.....148	"
" 601, R. C. Rhode Island Red	..148	"
" 545, White Orpington	.....145	"
" 372, S. C. Rhode Island Red	..145	"
" 487, White Wyandotte	.....144	"
" 488, White Wyandotte	.....144	"
" 525, Silver Wyandotte	.....144	"

A great many farmers and their wives in all parts of the country anxiously watch for the monthly bulletins on the progress of this egg-laying contest.

A. A. COULT.

At any rate, the political agitation is not disturbing the tranquillity of the ripening field of corn.

The ordinary farmer always feels proud of his team when he passes an automobile with a "busted" tire.

There is one lesson that some men never will learn, no matter how long they may live, and that is that stinginess and economy are not one and the same thing.

Planning for Healthy Chicks

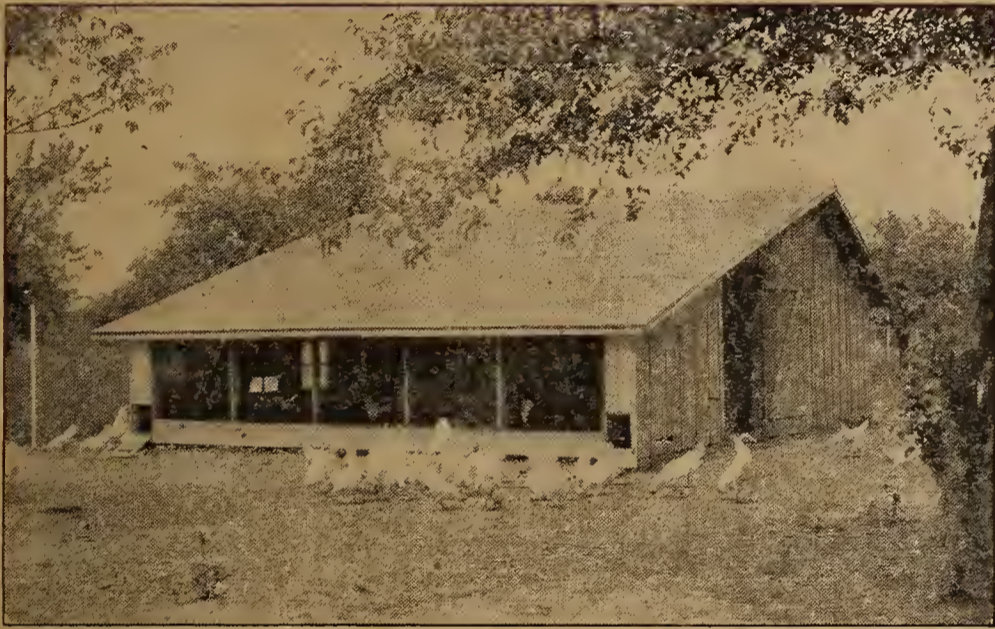
I MATE up my breeding pens in January or February, putting from ten to fifteen females with a male, or if I have a pen of twenty-five females I mate them with two males, placing them with the hens alternately. In the morning they are fed liberally of wheat, oats, buckwheat and barley scattered in a litter of cut straw, which gives them plenty of exercise, a very important thing to remember in promoting the health of the fowls. At noon they are fed a mash consisting of wheat-bran, hominy, gluten and a little oil-meal, mixed to a crumbly mass, to which is added a little salt every day and cayenne pepper about every other day. Boiled potatoes are occasionally added to the mash, thus giving them a variety.

After dinner they are fed their green food and green bone. Their green food consists of cabbages, beets, clover and alfalfa hay, specked apples or any such vegetables that I have on hand. Their meat food consists of either beef-scrap fed in their mash, or green cut bone, which is fed to them at the rate of about an ounce a day to each fowl. At four o'clock they are fed whole and cracked corn mixed, about all they will clean up. Grit, oyster-shells and fresh water are kept before them at all times. By following this method of feeding and caring for my fowls, I am never troubled in securing fertile eggs that hatch strong, healthy chicks.

A. E. VANDERVORT.



One of the thirty-two houses in which the National Egg-Laying Contest is being conducted at the Missouri State Poultry Experiment Station at Mountain Grove. They are eight by ten feet on ground, seven feet high in front and five feet high in the rear. They are divided through the middle by a wire fence, each side being occupied by ten hens and one male bird. Trap-nests are under roost at right of entrance, and also along the front wall. Dry-mash and grit hopper is fastened to the wall at left of door. The slatted opening admits fresh air all the time, and the windows are kept open as shown, except in extremely bad weather. Two small windows on north admit light under the roosts. These houses are built on runners and can be hauled about the orchard or field with a team of horses. Each house cost \$27 complete, including one coat of paint.



This modern farm poultry-house in use at Missouri State Poultry Experiment Station at Mountain Grove is twenty by twenty feet on ground, concrete floor on three quarters of floor surface, dirt floor in front. Double windows on west side, not less than five feet square. Eaves are four feet high, the long slope being toward the south. Front has eight-inch board at bottom and four-inch board at top, giving three feet opening entire front, screened with wire netting to keep out birds and rodents. Roosts are around wall of building, and dry-mash and grit hoppers are in center of floor space, surmounted by the nests. The walls are battened wide boards put on upright, and roof is prepared roofing-felt. Building will accommodate 150 hens and costs about \$85. It is a practical house for poultry in climates like that of Missouri.

Catarrh Among Hens

"WITHIN the last four weeks," writes an Ohio reader, "we have had some little trouble with our poultry which I cannot understand. Three of my one-year-old hens were taken sick within a week of each other, the first two recovered, and the last one died. The most prominent symptoms are inactivity, drowsiness, very little appetite and only for soft food. One, I noticed, drank a great deal of water, and the crop was full all the time, even after death. The one that died refused to stand up at all for two days, and was sick four days; those that recovered were sick two weeks. The comb was beautiful until after death, and then turned dark."

I judge from the symptoms you give that your hens are suffering from catarrh, or inflammation of the crop. This disease is not very common. Overfeeding, some poisons such as are found in a poor quality of beef-scrap and other waste meats, moldy grain, indigestible materials in the crop, chronic roup and several other irritating diseases cause it. The most common cause is overfeeding of rich foods, moldy grain and decaying beef-scrap.

Place the bird affected in a clean, dry coop or pen. Empty the crop by holding the bird with its head down, and gently work the contents of the crop out through its mouth. To do this you may have to give it two or three tablespoonfuls of warm water. When the crop is empty, give the bird a half-grain of bicarbonate of soda and one grain of subnitrate of bismuth in a teaspoonful of water.

Give no food at all for at least twenty-four hours, then feed very lightly some soft food like bread soaked in milk and squeezed until firm. A half-grain of quinine morning and night will help much toward hastening recovery. All diseases have a cause. Find the cause of this trouble.

FRED GRUNDY.

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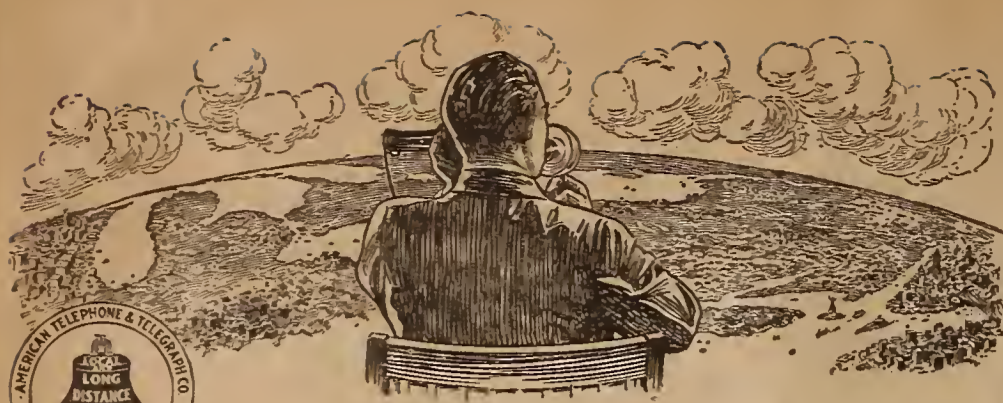
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It is best observed at sea. Though the ships of today are larger than the ships of fifty years ago, you cannot see them until they come up over the edge of the world, fifteen or twenty miles away.

A generation ago the horizon of speech was very limited. When your grandfather was a young man, his voice could be heard on a still day for perhaps a mile. Even though he used a speaking trumpet, he could not be heard nearly so far as he could be seen.

Today all this has been changed. The telephone has vastly extended the horizon of speech.

Talking two thousand miles is an everyday occurrence, while in order to see this distance, you would need to mount your telescope on a platform approximately 560 miles high.

As a man is followed by his shadow, so is he followed by the horizon of telephone communication. When he travels across the continent his telephone horizon travels with him, and wherever he may be he is always at the center of a great circle of telephone neighbors.

What is true of one man is true of the whole public. In order to provide a telephone horizon for each member of the nation, the Bell System has been established.

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Garden and Orchard

The Chestnut is Threatened

CONGRESS is bound to fight the chestnut-bark disease. So their actions indicate. This disease has become a menace to the chestnut forests of the United States, and great alarm is felt in the States where the chestnut is among the chief of the native trees.

Dr. B. T. Galloway, Chief of the Bureau of Plant Industry of the Department of Agriculture, says the damage already wrought is at least \$25,000,000. He estimates the entire value of the chestnut forests of the United States at from \$300,000,000 to \$400,000,000.

As is well understood, the chestnut-tree flourishes widely through the Appalachian region. In this region many of the State governments have already taken alarm and are fighting the disease. But the activity is by no means confined to the Appalachian country. Recently, the governor of Pennsylvania called a conference to consider means and methods of fighting the chestnut-blight. No less than twenty-two States had representatives at this conference.

The States of New York, New Jersey, Pennsylvania, Ohio, West Virginia, Maryland, Virginia and North Carolina are already doing more or less to combat the disease. Doctor Galloway urged Congress to make a liberal appropriation to allow the Department of Agriculture to work in cooperation with the State governments. Congress allowed \$80,000, and this amount, together with what the States are appropriating, enables much to be accomplished.

In a recent statement to the Senate committee on agriculture, after saying that the experts of his bureau had had the matter of a more vigorous campaign under consideration for seven or eight months, he added:

The funds, if appropriated, will be expended in continuing the investigations which the bureau has been engaged upon on a rather limited scale since 1907, which have had for their object the discovery of methods to check the advance of the disease. The scope of these investigations will be increased and cooperative work will be taken up with all of the States which are making, or intend to make, any active campaign against the disease. One of the first things that will be undertaken will be to put the State workers in possession of all the knowledge that the bureau experts have gained from the investigations so far conducted, and correlate the work of the department and the State. The destruction of diseased trees, which will be one of the phases of the work, will be done by the State under the joint direction of the State and bureau officers.

Work can be taken up immediately with the States of New York, New Jersey, Pennsylvania, Ohio, West Virginia, Maryland, Virginia and North Carolina.

The disease has spread so rapidly that efficient methods for its eradication or control have not yet been entirely worked out experimentally, and further laboratory work along these lines will be necessary. The experiments to date, however, indicate that general sanitary methods, such as the cutting out of advance infections, will prove efficient in restricting the disease to its present range.

The State of Pennsylvania has been the pioneer in fighting the chestnut-blight. It has enormously valuable chestnut forests, and the possible damage there is rated at \$50,000,000. State experts, with ample funds, are assiduously at work there. Other States are rapidly falling into line.

It is not possible in brief space to go into the details of the disease. It may be said, however, that it is supposed to have come to this country from the Orient. Accounts differ as to when the disease was first discovered in this country. Some say it has been known here for nearly twenty years. There is no doubt it was recognized eight years ago, in trees about New York City. It is a parasitic affection, which may attack the trunk of the tree and soon cause its death, or which may attack the branches and kill the tree gradually. The disease spreads easily. It may even be communicated to a chestnut-tree from chestnut posts. Scientific men differ greatly as to how the disease can be successfully checked. Some even hold that no known means exists for combatting it. This is one reason why it is important that the laboratory work of the Bureau of Plant Industry should be carried as far as possible. JOHN SNURE.

An occasional visit to the schoolroom will encourage the teacher by your presence, assist you in ascertaining what progress the children are making in their studies and be an incentive to them that will stimulate a greater effort in securing an education.

In July the writer paid \$2 for a bushel of Texas peaches. A letter from a friend in Texas informs him that twenty-five cents a bushel is the highest he received for peaches delivered at the shipping-point. Verily, we must absolve the grower from all blame for the high cost of living.

Strawberry Cover Crops

IF THE right crop is sown, a blanket which will lie flat in winter and protect the strawberries may be procured. These cover crops are superior to straw, inasmuch as they do away with the painstaking process of spreading and removing it. Another objection to straw is that it invariably seeds the plat with objectionable weed-seed. A cover crop that dies down in winter protects the plants during cold weather, in the spring it is driven close to the soil by the rains, and there it smothers out weeds and conserves moisture far into the next season. An excellent crop for this purpose is lettuce sown very thick. It should be sown so as to get a good growth before frost. If sown broadcast and very thick, sorghum or Kafr-corn makes an excellent crop. Seeds should be covered as much as possible. Oats is a very satisfactory crop, though if the season be a dry one oats mixed with sorghum is better than oats alone. The above crops should have sixty days' growth before frost, but this time is not always possible. These crops lie flat and protect the fruit from dirt; they also prevent the soil from baking and heaving. They protect and, no matter how heavy, do not smother the plants. C. J. GRIFFING.

Grafting or Budding Grapes

A NEBRASKA lady reader tells me that she has some nice wild-grape vines which she would like to bud or graft to good cultivated varieties, and asks me how it is done, and at what time of year, and whether this top-working is usually done by budding or grafting. Persons of some experience sometimes graft old grape-vines of inferior varieties to other more desirable varieties, but this is always a particular job and not an easy thing for the novice to do. The best method, no doubt, is to cut the old stock down in early spring, several inches below the surface of the ground, then split the stub and insert one or two cuttings or scions of the variety wanted, each with three buds. Cut the lower end, just below the lowest bud, in the shape of a wedge, and insert this firmly into the split stock. Sometimes special tools are used in this operation. It can be done with saw and knife, however. No wax is to be used. The stock and scions are then covered with earth. I would hardly advise our Nebraska friend to undertake this job. Good, strong grape-vines can be bought from any reliable nurseryman for a few cents apiece, and if planted in suitable soil and location, and properly taken care of, may be expected to give a few clusters even as early as the second year from planting, a half-crop the third year and a good crop year after year after that. This course would probably lead more surely to success, and to the enjoyment of good grapes, than the proposed plan of top-working some wild grapes. Or, you might try both plans. T. GR.

Golden-Crowned Kinglet

IF WE wish to get the best idea of the diminutive size of a kinglet, we must get within arm's length of him, either by standing still while among the bushes in which he is feeding, for he is an inquisitive creature, and being fearless will approach a person, or by drawing near to the thorn-apple trees, in which he likes to feed. One day last fall I approached a large group of these shrubs and could not see any bird movement among them, but on entering the mass, so as to have the benefit of the darkness within and the light without, there were found to be about a dozen of these little birds among that maze of bushes. Here, in



the matted mass of sticks, thorns and foliage, they were well protected from their enemies, besides finding a quantity of their favorite food; for, like some of the warblers and vireos, they find among these shrubs many insects. Kinglets also visit the bushes of field and gardens, as well as the trees of the forest, and so they are valuable birds. For with their microscopic eyes they find food that our eyes could never detect.

These little birds are easily recognized. They are olive-green above, have whitish under parts and wing bars, yellow and orange crown bordered with a band of black, and a short and slender warbler-like bill. They arrive earlier in the spring and remain later in the fall than either warblers or vireos, so they are not likely to be mistaken for any member of these common species. And it is not uncommon to list the golden-crown even in the winter-time in our Northern States, for they are hardy birds. H. W. WEISGERBER.

Farm Notes

The "Old" is Yet "New"



HERE are few of us who do not imagine the man or woman who lived in the day of the remote past as differing, in some mysterious way, from ourselves. But a very little study of their lives, even in the insufficient light that is often thrown upon them, will soon convince us to the contrary. Men and women are essentially the same in all ages, and given the same degree of enlightenment and the same opportunities for experience, observation and study, the conclusions arrived at in one age would be very much like those arrived at in another.

Hence it comes about that the sayings and wise saws of old farmers and others are often much older than is commonly believed, even by themselves; and the sage advice that some shrewd, staid old New Englander lays down for his son or daughter may very likely have been laid down by some other old farmer many centuries ago.

When a young man, just beginning farming, I kept large flocks of sheep, and my father used to say to me: "Don't ever fail to cull your flocks thoroughly every year and sell off the culls."

In Cato's treatise, which, as he is believed to have written it in the latter part of his life, must have been written at least one hundred and fifty years before Christ, I find the following: "Sell off your old cattle and the culls from your sheep." The hard-headed old gentleman further advises the sale of old or unhealthy slaves—advice that, in my time, I do not happen to have heard, but which, in colonial days, when in New England and especially in southern Rhode Island considerable numbers of slaves were kept, may quite possibly have been uttered by some equally practical and "forehanded" soul.

A few days ago a very successful farmer told me that he never used a farm-wagon more than four or five years; then he "painted it up" and sold it. "The first wear of a thing is the best," he observed. Cato, following exactly the same line of thought, says, "Sell your old wagons and old iron tools; keep nothing that is superfluous." And in one of the agricultural papers I saw an article on seed-selection, with photographs showing the improvement that could be wrought by always selecting the best ears of corn for seed. Cato tells his readers to be sure, at harvest-time, to lay aside the best and handsomest ears of grain for seed, as otherwise the crops will deteriorate. In fact, almost every point of good farm practice that modern farmers pride themselves upon following is found in the pages of this old book, which is believed to be the first strictly agricultural treatise that was ever written.

When Cato leaves outdoor affairs, however, and takes up matters that pertain more especially to household management, he appeals less to present-day farmers—at least, it is to be hoped so,—though there were doubtless many farmers a generation ago to whom the old Roman's views of household economy and the duties of womankind would have seemed remarkably sound. Thus, in his chapter on the "duties of a housewife," he says, "Take care that she do her duty. Let her live in awe of you. Let her have as little intimacy with the neighboring women as may be, and let her not receive them in the family. Let her not go out to entertainments, nor let her be fond of visiting. Let her not perform religious duties, but let her know that the master does religious offices for all the family." This last is a masterpiece, showing that thrift and economy of time can be carried into religions as well as other matters. For would it not be a direful waste of time for different members of the family to engage in devotions which could be attended to, in a few minutes, by one for all hands? He goes on to say: "Let her keep the house neat and clean. Let her take care to have victuals cooked and always ready for you and the family. Let her keep a stock of hens, that there may be always a supply of eggs." In this requirement, viewed from the outside, it would seem no more than fair to the housewife, as well as of great interest to us of the present time, for Cato to tell how this constant supply of eggs could be kept up. But, pshaw! Was it not the housewife's business to find out this for herself? And would not our Puritan forefathers have placed the seal of approval on all of Cato's views concerning women, and have regarded winter eggs as of little consequence compared to sound views? For in all ancient history there is no figure that is so complete a prototype of the old-school New England farmer as Cato; in his sternness and self-repression; in the rigid morality that he practised and that he insisted upon all around him practising; in his thrift and industry and disapproval of all recreations and amusements he was nothing more or less than a pagan puritan. We may console ourselves, however, with

the thought that, notwithstanding the nearness to which Cato's puritanical views have come to our times, we have outlived them to some extent. It is true that there are still many country women whose lives are as colorless, as devoid of the stimulus of live and varied interests, as were probably the lives of many country women in Cato's time—and this fact, in view of the possibilities for happiness that exist as surely in the country as the town, is unspeakably sad. But not one farmer in ten thousand would dare to express himself concerning the matter as did Cato—which shows that the public sentiment of to-day is different. It remains only for the farmers themselves to see to it that a more general practise follows the sentiment.

DAVID BUFFUM.

With the mow full of hay and a silo full of corn, the farmer can sleep on cold winter nights with a heart full of content.

At this cry of "market your robber cows" every farmer ought to take a scrutinizing peep into his methods of feeding, sheltering and caring for his dairy cows, to ascertain if they are being given a chance to be profitable producers.

Avoiding the Ax

THE best treatment for fowls in an advanced stage of cholera is the instant use of a sharp ax and the complete burning of the carcass. Those mildly affected should be at once removed to remote quarters and there treated. The following will prevent cholera among fowls, but plain common sense must also be used, and plenty of it at all times.

After the coop or house has been thoroughly sprayed with a solution of one part crude carbolic acid to one part gasoline and three parts hot water and allowed to dry, spray or brush all the interior, nest-racks, roosts, etc., with hot whitewash. Place clean straw-chaff for a litter, and after a thorough cleaning of the water dishes or fountains, refill with pure cold water, to which is added to each gallon two ounces of well-dissolved sulphate (not sulphite) of soda. Allow no other liquid or drink for three weeks or a month. Disinfect all runs, etc., where cholera-affected fowls have been, with the acid formula. Feed lightly or not at all on mash feeds, substituting cracked, mixed, dry grains in place, and the cholera will leave. Thoroughness in all particulars should be observed.

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Because, each pair will outlast three to six or even eight pairs of best quality all-leather workshoes. There are no repairs—and no loss of time, or trouble of any kind. The soles and sides (as shown in illustration) are stamped in one seamless piece from light, thin, springy steel secured firmly to uppers of the very best quality soft, pliable leather—absolutely waterproof, and almost indestructible. The soles are studded with ADJUSTABLE STEEL RIVETS, which give perfect traction, firm footing, and protect the soles from wear. The rivets themselves (which take all the wear) can be quickly replaced when partly worn. Fifty adjustable rivets cost but 30 cents, and should keep the shoes in good repair for from two to even three years.

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This shoe has absolute foot form—and the sole being steel, it cannot warp, twist, nor draw out of shape. Consequently, it is easy to be seen that corns, bunions, callouses, etc., cannot be irritated; and no portion of the foot be rubbed so as to start new miseries of this kind. A perfect fitting shoe never made a corn in the world—and no all-leather shoe can fit after it has a twisted, broken sole that allows the uppers to crease up into galling wrinkles. Erase these pains and disturbances—be foot free and foot healthy.

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Live Stock and Dairy

A Good Silo

Good for the Dry Farm, and Perhaps
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IT IS astonishing how few people have ever seen a hole in the ground. One made into a silo for preserving fodder crops is what I mean. Yet, since the first silo I made in the ground in 1889, the conviction that agriculture can be really and permanently successful in the semi-arid West only through the silo made in the ground.

All farm papers agree that the silo is indispensable, but to the man of moderate or small means who has had to break, fence, build and stock a farm, five or six hundred dollars for a silo and cutting-machines is usually prohibitory. The few who can indulge in the luxury of a high-priced silo outfit almost without exception pronounce it the best paying investment about the farm. This article is written for those readers of FARM AND FIRESIDE who, in addition to the support of a family, the improvement of the farm and the public contributions of time and money necessary in social life, hesitate at the seemingly insurmountable obstacle of a silo.

Where the ground is dry enough for a cellar ten feet deep, any farmer can make a silo, with his farm team and his own labor, that will preserve his fodder crops. Cutting-machinery is advisable, but not absolutely necessary. To satisfy himself of the value of silage in the farm stock-foods, let the farmer dig a long and narrow pit (three or four times as long as it is wide) ten feet deep, pack in the bundles of fodder fresh from the corn-binder and tramp well, especially at the edges, while the to-be-silage is steaming and settling. Keep filling as the mass settles, until the silo is full. Then cover all with old wet straw or hay—say six inches deep after it settles. Then cover with dry straw, hay or fodder to weight it down, the more the better. This weighting is necessary in the shallow silo, as the weight of the silage itself in the tall silo is wanting in this pit kind.

The roof, tent or tarpaulin is for the purpose of keeping the storm out while filling and feeding, and should be above the weighting.

If the farmer will make a small silo this year and feed one cow and one calf, no obstacle will be too great to stop him from having one or more silos.

A coat of cement mortar is advisable on the walls, to keep the dirt from rattling down and sticking to the moist feed, also to keep the mice and rats from burrowing in next to the warm feed for a winter nest, thus opening an air-hole to the silage, spoiling more or less of it.

Besides placing the silage within the reach of all, the pit silo has many things to recommend it, when compared with other types of silos. It cannot blow down or up. Fire cannot burn it. Cold cannot freeze the silage, as it does sometimes in the stave silos. Drying winds, after the silage has been taken out, do not shrink the staves and loosen the hoops, for there are none.

For a temporary silo, I would advise a layer of stone, brick or concrete around the top of the silo, continuing up from the coat on the wall, to plaster onto and to bank up against to keep surface water out. Less than two cubic yards of space will hold a ton of silage. The round form of silo is best where silage is cut in short lengths, the oblong for uncut fodders. FRANK B. SMITH, Kansas.

Selection of Feeders

ONE of the principal factors affecting the success or failure of the cattle-feeder is the degree of ability he possesses in selecting his stockers. A few rough, coarse animals in a bunch are not only unprofitable in themselves, but by destroying uniformly the profit that might otherwise be fairly expected on the whole lot is apt to be very considerably diminished.

Of all classes of cattle, stockers and feeders are the hardest to judge. It is, in fact, more of a natural gift than an acquired quality, yet, like other gifts, it can only be brought to perfection by long practise. In passing on fat cattle we are enabled to reach our conclusions from what they appear before us, for in them we have the finished product. In the lean feeder is presented the raw material. The problem, therefore which requires solution is: "What are his possibilities?" "What will he be like when finished?" If we are compelled to gamble more or less on his future outcome, it is of paramount importance that there be present indications of good breeding, as it is much safer to speculate on a well-bred bullock than on a nondescript.

In the first place, to select his stockers intelligently, the feeder must have a thorough understanding of the market requirements. That is, he must know what parts of an animal the consumer will pay the highest price for. When it is known that fifty-five per cent. of the value of the entire carcass is represented in the three cuts along the back, known as ribs, porterhouse and sirloin, and that in a first-class animal these three cuts are about thirty-five per cent. of his dressed weight, it is easy to see that the terms "beef type" and "market requirements" must harmonize in the greatest possible degree.

Feed the Animal That Is Well Built

Hence, it is not difficult to see why a beef-animal should be broad across the rump and loin and have a well-sprung rib. If he lacks in these characteristics, he will finish so as to give a carcass with similar peculiarities and therefore deficient where the meat is of the most value. With a frame having a large expanse for developing the higher priced cuts, there is pretty sure to be a good depth of body throughout. This is an indication of good feeding capacity. Amos Cruickshank, who probably did more than any other man to develop a race of cattle that would turn straw, hay and turnips into beef at a profit, used to say that if a beast's ribs were well sprung, giving him a broad back on which to carry flesh, and if he had a large middle, giving ample storage for large quantities of feed, the extremities could not be very far wrong. Viewed from the side, the body of a beef-animal, if its legs, head and neck were cut off, should be almost parallelogrammic in form. This conformation also gives depth in the region of the heart, which indicates constitution, and is generally associated in an animal with a good top. The flank is important because it is connected with depth of body, and is another evidence of good feeding qualities.

The head furnishes a very reliable index of the general character of an animal. A long, narrow, pinched-looking face is to be avoided, as it is usually accompanied by a general sparseness throughout. It should present a fine, clear-cut appearance, being broad between the eyes and short from the eyes to the muzzle. The eye, perhaps, furnishes the best guide to the health, disposition and constitution of the animal. It should be full and bright, but calm and placid. The fiery, restless eye goes with the wrong kind of nervous temperament for a feeder, and a small, dull, sunken eye is associated with a sluggishness of circulation and a low vitality. Even though a steer may seem to be well developed in bodily conformation, either of the foregoing should be sufficient cause to reject him for feeding purposes.

The Coarse Animal Is a Loser

Another important feature of a good feeder is smoothness. An animal possessing an angular frame, with coarse bones and rough joints, is exceedingly hard to finish. Even though he may make satisfactory gains he will not show it. The meat is not evenly distributed, but appears bunched. With this disadvantage he cannot command the highest market price. The bones should not be too fine, or they will fail to grow sufficiently to reach the desired weight, and if too coarse there will be an excess of bone. As a compromise between the feeder and the consumer, we want cattle of a medium bone, that will mature to a good, profitable weight.

The skin should be soft, mellow and loose, so that a handful of it can be picked up anywhere, and covered with a thick coat of fine, glossy hair that looks and feels as though it had some life in it. A hard, harsh skin, with a dry, staring coat that has a tendency to get under the finger-nail like a sliver when the hand is rubbed over it, indicates a feeble circulation and a general lack of thrift.

There is some difference of opinion regarding the best age for feeders. It is well to bear in mind that changing conditions have brought about an increased fastidiousness in reference to the things we eat, and in no line is there a closer discrimination than is to be found in the meat trade of our larger centers. One has only to examine the stock-market reports to learn that the large-

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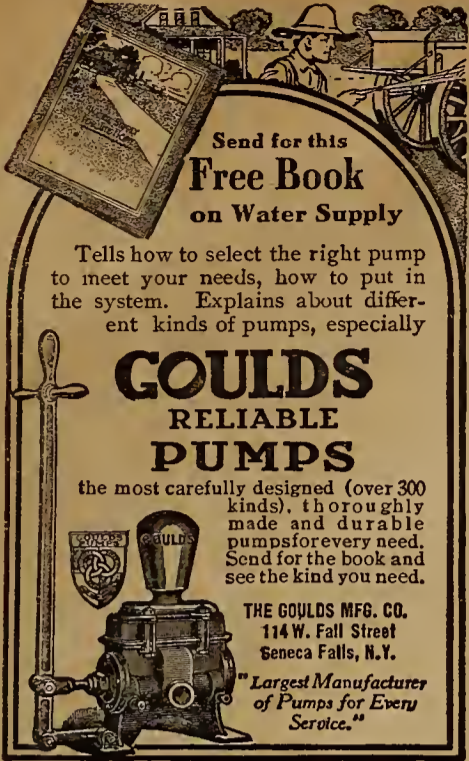
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Our Offer We will send you this wonderful fountain-pen by return mail if you will send us only six 6-month subscriptions to Farm and Fireside at 25 cents each. Tell your friends that this is a special bargain offer. You can easily get them in a few minutes. Send the subscriptions to

FARM AND FIRESIDE, Springfield, O.



framed, coarse-grained, long-maturing animal is giving way to the young, medium-sized animal, say two years old, and sufficiently matured to finish properly in one season. If such can be secured, there is no question as to their ability to make more rapid gains than the older animals. In the majority of cases, however, you cannot get them into that condition at that age. Early maturity must be a characteristic of the animals bred from. We cannot afford to put young cattle into our stables without first ascertaining whether the sire possesses that special quality, for this is a fundamental principle upon which rests the feeding operations of the successful stockman, present and future.

Sometimes feeders are at a loss to decide between putting in heavy, half-fed steers with a view to getting them finished by January or February, or to put in lighter or leaner cattle to carry through until May. This can be determined only by the relative prices. To make a profit on May cattle the feeder should have a margin between the buying and the selling prices of about one dollar per hundredweight. Short-keep steers can be fed on a somewhat closer margin, but the demand for them being considerable they cannot usually be bought for much less than the export price. In any case it is important that steers go into winter quarters in a good, thrifty condition, carrying a fair amount of flesh. Otherwise the heavy feeding required to get them finished in time will absorb all the profits.

One of the greatest difficulties with which buyers have to contend is the lack of uniformity to be found in the stockers frequently offered for sale. Almost every feeder has doubtless had experience in buying stockers in sections where good bulls were used, as well as in those sections where little attention was paid to the class of sires employed. Such experiences certainly demonstrate very thoroughly the line that one should endeavor to follow. If the beef industry is to advance, a greater effort must be made to secure pure-bred sires and breed for a greater uniformity in type and character.

J. HUGH MCKENNEY.



The winners at the fair

Lime in Feeds

WE HAVE heard much about various rations which are all well and good, but it is becoming evident that we must not fail to recognize the ash content of a food-stuff, especially the lime content. The lime, more than other ash constituents, in connection with phosphorus, will build up a bony framework. The lime also serves to keep down an excess of acids in the animal body, which would prove injurious.

Experiments have been carried on in which cows were fed grains and straw over a definite length of time. By determining the lime content of the feed and that of the milk, which remained normal, it was evident that the cows must have drawn calcium, the base of lime, from their bones. No cow could keep this up. Many cows are called upon to do this very thing for periods of time.

Hogs have been similarly experimented with and give symptoms of failing. What is one to do? You can continue to feed according to feeding standards, but the legume hays, such as alfalfa and the clovers, must be fed liberally. Wheat-bran is rich in phosphorus, and the two make a happy union as a feed to build better framework in our animals. The farmer who keeps his sows on a bare pasture or yard and expects them to raise a litter of pigs is asking them to do so at the expense of their own bony frameworks, which will grow weaker until they collapse. The young will also have to suffer the ill effects. Corn, grain and slop is not the ration for this purpose. It must be only a part. A good pasture of clover or alfalfa will handle the lime requirement. When you are ready for fattening the pigs, they have a frame on which to put meat.

The same applies to the mare and colt or any growing animal on the farm.

As I have said, legume hays such as alfalfa and clovers will give lime and ash constituents for building bone and should be a prominent part of all rations. Bran works in harmony with these hays.

R. V. BROWN.

No Cure for Lolling

HOW to cure a tongue-loller is the information desired by a reader in Colorado. The answer may interest many farmers.

I am sorry to say there is no absolute cure for tongue-lolling. There are several bits constructed for the purpose, however, and some of them work well. I would advise you to try one of these bits, which you can select in any well-appointed store where horse-supplies are generally sold.

DAVID BUFFUM.

Keep Just a Few Sheep

THE man with a grouch will say that wool is low and that mutton does not sell. While I will not attempt to discuss this matter with him, it is true that the sheep has a mission to perform on every farm. Whatever the acreage, if the soil is poor, the owner has but little courage. But if there is evidence that the soil is steadily increasing in richness and crop-producing potency, early rising and hard work are pleasures. Every farm ought to keep a few sheep, even if no more than eight or ten, which represent the feeding capacity of a cow. They bring fertility. If the present generation could learn how to manage alfalfa and sheep, the nation would suddenly find itself millions of dollars richer, with greater hopefulness for all classes. The one will feed the other, and both will feed the soil, and man. How few know what to do for sheep, and how to learn! It reminds me of what a young mechanic said to me the other day. I was remarking upon the mysteries of the interior of my motor-car, upon which he was at work, and asked how he could ever conquer the intricacies of piping, wiring, explosion chambers and various rings, tanks and tubes. "It is complicated," he said, "and it does not seem as if the human mind could ever master it, but somehow it all comes to one who works at it."

It is the same with learning shepherding. If one will get a few sheep and work with them, closely observing, meanwhile, their habits, preferences and needs, it will all "come" to one.

Large Profits from Little Outlay

Just a few, say half a dozen; let them run with the cows at first. Owning such a flock will interest one to read whatever can be found on the subject, and ere the owner is aware, he is interested and catering to the woolly people who will just as surely repay all the care and money expended as they live. Subject to few diseases and able to subsist largely upon fare that will make a cow rebel, their hoof is said to be "golden." They make large profits in winter lambs. The fleece brings the owner a vernal dividend just when money is likely to be most appreciated. For fresh meat for the farmer's own table and for sale the sheep is unexcelled. As killers of weeds and brush and improvers of pastures they are the farmer's ally.

Every family should finance against the extravagance of meat-bills enough to prepare in advance to fatten a good sheep for home consumption each winter.

Select and begin the fattening. Turned into woodland where chestnuts and sweet acorns abound and given liberal grass feed, supplemented with turnips and tops, with a half-pint of corn daily, and in six weeks a sheep will be in plump and tender condition. The expense of all this is trifling, and so simple is the matter of dressing mutton that any person who can dress a fowl may learn without difficulty. Fatten during mild weather and hang up the carcass to cut from with the beginning of sharp, cold weather. With chops and stews and leg o' lamb, such a supply ought to hold back the butcher's bills \$12 to \$15. This meat will keep almost

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More of the big, successful barns—those that are run by a definite system where costs are known to a cent and the profit percent must keep climbing—more of these barns all over America are equipped with Louden Tools than with all other makes combined.

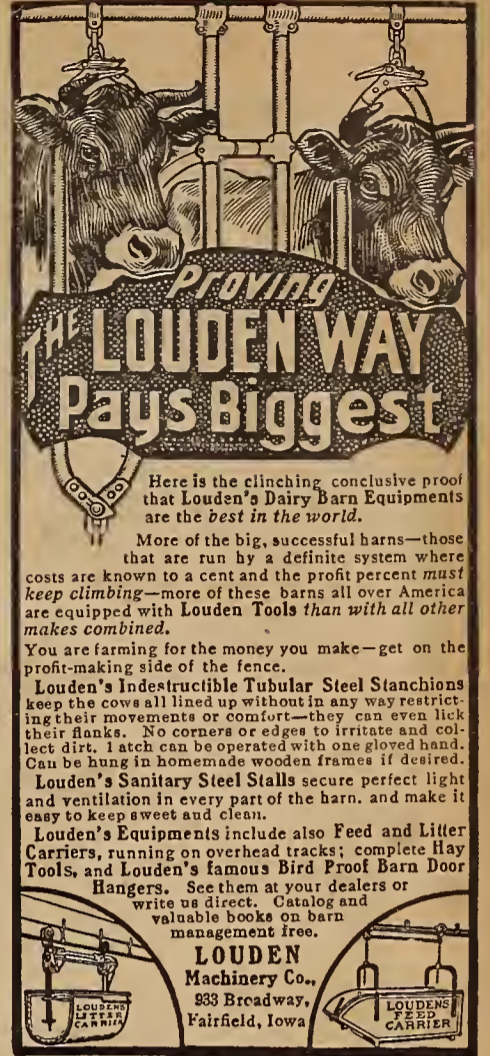
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Yet, of all the Burley raised in Kentucky, less than six per cent is good enough for Velvet—for only middle leaves of choicest crops go into this "smoothest" of smokes.

But even these selected middle leaves—rich with mature, ripe flavor—are not ready for Velvet until they have been thoroughly mellowed, until no hint of bite or burn remains. Then, and then only, does Burley become Velvet.

You can't know what "smoothest" smoking is until you try this superb tobacco. Your dealer probably has Velvet. If not, have him get it for you through his jobber at once.

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makes a handsome red or
green roof for houses.

indefinitely in winter. The felt may be made up at home and is one of the luxuries worth two dollars when properly handled.

The proper handling is as readily learned as the dressing of the meat. Trim off the jagged ends, put it into a tub of warm soapsuds and wash thoroughly, until of snowy whiteness. Next, with a dull knife remove any bits of fat that may be attached to the skin, and tack it on a bench or boards, fleece downward. Next, add an ounce of sulphuric acid (vitriol) to a gallon of warm water, very cautiously, so it will not fly onto the clothes or into the eyes. With this wet the skin several times a day for three days. When finally nearly dry, work and pull it until it is soft and silky. As a mat for automobile or carriage or robe for the baby it has no equal and may be lined so that it will never appear to be home-made.

HOLLISTER SAGE.

Reasons for Soft Butter

A WEST VIRGINIA reader says that he has a fine young Jersey cow that apparently is in good health, but that the butter made from her milk is soft and oily and has no grain at all.

You state that the trouble is in the cow, and not in the handling of the milk or cream. The cause, then, is either one of two: (1) the individuality of the cow or (2) a diseased condition of her udder glands which causes an abnormal secretion of fat.

The individuality of all cows differs as regards the secretion of milk and its contents of water and solids. And, again, there is a variation of the solids, even though there is a very equal percentage of casein and sugar in comparison with the fat. There is, many times, a great variation in the composition of the butter-fat, which ordinarily contains 42.2 per cent. of oils, stearin and palmitin together. Fifty per cent. butyric and some traces of other solids make up the one hundred per cent. The butter-fat of some cows contains a greater per cent. of the stearin than others, and the result is they produce a harder butter. In case the percentage is considerably less than fifty per cent., then the butter, of necessity, has to be soft, as there is not enough stearin in it to make it hard.

While it is true that foods do not change the per cent. of fat in milk to any great extent, foods do change the per cent. of the stearin in the fat. Hence it is that there will be a harder butter at some times than at others, coming from the same cow's milk. The fact of your cow producing butter that is soft, regardless of the food she is eating, narrows the question down to whether it is her individual nature to manufacture the fat in her milk that is deficient enough in stearin to harden the butter, or whether there is a diseased condition of her udder.

In case she has ever at any time since becoming a milch cow produced a hard butter, then it cannot be her individuality, and must be that she has a disease of her udder or some part of it. This may be the effects of a previous inflammation of the udder gland or a part of it (garget), or she may have miliary tuberculosis of the udder, which interferes with the breaking down of the fat-cells in her udder. In that case her butter would not be a wholesome product for human consumption. The safe way would be, in case she has once produced hard butter, to have her properly tested with tuberculin. The test will indicate what the trouble is.

C. D. SMEAD.

Udder Troubles Due to Filth

THE word filth may be taken to mean any substance containing germs which infect wounds and cause formation of pus. It is germs that infect the teats and udders of cows, making the animals unprofitable temporarily or permanently in the dairy. Could we keep the stables and udders absolutely clean and free from germs, garget or "caked bag" (mammitis, or inflammation of the udder) would become rare and profit from dairying more certain; for udder troubles are common in almost every dairy and are always the source of work, worry and loss of money. Germs live and multiply in dark, damp, dirty, hot, badly ventilated stables. They thrive in manure, in gutters and drains and on soiled stall floors. They are carried from cow to cow by the milkers' hands or clothes; or in the manure shoveled along the gutter. Milking with wet hands is an abomination and sure to cause sore, infected teats. Cow-pox is spread from one affected cow to the others by the medium of the milkers' hands. Such diseases as contagious mammitis, contagious abortion and infectious vaginitis, Johne's disease and tuberculosis are all due to germs and are most likely to be found and run riot in dirty stables. Prevention of these diseases, and the simpler ones of the udder and teats, necessitates absolute cleanliness and use of clean, fresh bedding-material, disinfectants and whitewash. The milker, too, must keep his hands and clothing clean. Affected cows must be milked last or by someone who does not go near the other cows. At present it is the disgusting practice in some dairy stables to milk the pus or other fluid from a diseased udder onto the floor, while the milk from the other quarters goes into the pail. The infected milk spreads disease. It should be made the invariable rule on every farm to instantly exclude from the cow-stable any cow that is giving abnormal milk from a diseased udder, no matter what may be the cause of the trouble. Were this rule made absolute, garget cases would be less common. Exclude, too, any cow that is sick, scouring or coughing, that has an abnormal discharge from her vagina, or sores upon her teats or udders. Quarantine every new-bought cow until she is known to be free from disease of any kind. Treat sores on the ends of the teats by soaking twice daily in a hot saturated solution of boric acid and each other day painting with tincture of iodine. Glycerite of tannin, or an ointment composed of one dram, each, of boric acid and compound tincture of benzoin to an ounce of lard, or one dram of boric acid in an ounce of balsam of Peru will be found healing for chaps, cracks and sores on the teats. Rub the udder once daily with campho-phenique, if affected with contagious mammitis. Never use a milking-tube unless it has been sterilized. It spreads disease. In sudden garget, physic the cow, then give half an ounce, each, of salt-peter and fluid extract of poke-root twice daily until fever and swelling abate. Foment udder with hot water, or poultice with oatmeal porridge. Rub twice daily with a mixture of equal parts of fluid extract of poke-root and belladonna-leaves and sweet-oil. Milk three or four times a day. DR. A. S. ALEXANDER.

He who never takes a day off doesn't have the proper estimate of the true value of a day.

The thrashing-machine always sounds musical when the wheat turns out forty bushels to the acre.

Treating Fistula

A READER in West Virginia says he has a Red Wilks horse six years old which had a fistula. A man told the owner that he would cure it for ten dollars, and that if he did not do so without leaving a scar he would charge nothing. In a week or ten days he brought the horse back and said he was well. The horse seemed to be well, only there was quite a lump on the top of one shoulder which he said would gradually go away. He said there would always be a small lump, but in the last few days it seems that the lump is growing, although he insists that it is not. Other so-called veterinary surgeons advised the farmer to let them cut it out and burn it, but he didn't want that done. He now writes to learn the proper treatment.

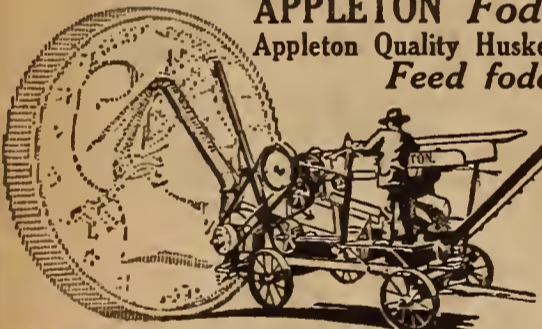
If the lump contains pus, it will feel soft and should be opened to let out pus and leave perfect drainage from each pipe and pocket. After the operation I would swab with tincture of iodine in and out of wounds, every other day, and once daily pack each cavity full of oakum saturated in a mixture of equal parts of turpentine and raw linseed-oil. Leave a tag of the oakum protruding from the wound to act as a drain.

If there is no softness in the swelling, do not open it, but either keep it covered with a wet pack of cotton batting or oakum saturated in a solution of one ounce, each, of sugar of lead and laudanum to a quart of cold water, or clip off the hair, and blister the lump twice a month with cerate of cantharides. The blistering will either drive the swelling away or bring pus "to a head" so that it may be drained out by cutting.

A. S. ALEXANDER.

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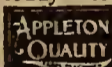
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The present day "Pittsburgh Perfect" Fence is made exclusively of special Open Hearth wire, into the texture of which is worked a newly-discovered ingredient that preserves the wire many years longer than ever before, because it resists the destructive influences of corrosion clear through from skin to core. The pure zinc *surface* galvanizing, applied after the wire is made, is just so much more wire-preservative.

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Write for full particulars of this latest improvement in fence manufacturing, found only in "Pittsburgh Perfect" Fences, together with catalogue showing styles for every FIELD, FARM, RANCH, LAWN, CHICKEN, POULTRY and RABBIT YARD and GARDEN; or, better still, **SEE YOUR DEALER.**

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GARDENING

By T. GREINER

Growing and Using Endive

A READER asks about endive. This is a member of the chicory family, and much used, especially by some of the foreign element, as a salad plant. Naturally it has a somewhat bitter flavor, like dandelion, chicory, etc., but this flavor is more or less eliminated by blanching. The leaves are usually quite curled, and when tied up over the head become nicely blanched to a white or yellowish white in the center. Then they are suitable for use in place of lettuce, which at that season of the year (late summer) is sometimes not so readily obtainable. Plants are started in late spring or early summer, then transplanted about a foot apart each way in rich soil. When the heads have become of good size, the leaves are gathered up, folded over the center and tied at the tips with soft string or other material. In a week or two of good growing weather the plants become blanched enough for use. I am not particularly fond of endive and usually manage to have good lettuce nearly the entire season through. By sowing seed frequently in open ground, and also setting young plants in frames or on greenhouse bench for use during the colder half of the year, good lettuce can be had right along. The failure comes mostly from neglect in sowing little lots of the seed at short intervals.

Good Spraying Outfits

A Kansas reader tells me of unsatisfactory results obtained by him and neighbors in sprinkling potatoes, etc., by means of a common sprinkling-can. He has about an acre of different kinds of vegetables, and asks what kind of sprayer would be most advisable to secure. In the first place, I believe that gardening to the extent of an acre, or even half an acre, without the help of a good spraying device would be for most of us, and in these times of the prevalence of insect pests, a very difficult and uncomfortable proposition. A poor sprayer is worse than useless, always unsatisfactory and sometimes dangerous. A "sprinkling-can" won't do for us. A good knapsack sprayer or a strongly built (copper) auto-sprayer (compressed-air sprayer) will do the work, and its cost, about \$15, will be saved or earned by it in one season, possibly several times over. Don't ever buy a cheap device of this kind. Cheap auto-sprayers may be dangerous. I read of one exploding the other day. The one I use is a very strong copper machine, tested to two hundred pounds pressure, and capable of giving a pressure up to forty or forty-five pounds. I never use it with more than thirty-five or near forty pounds pressure, however. It seems more conveniently operated than a knapsack sprayer, but the latter will give good service. It can be had at about the same price as a first-class portable auto-sprayer. You will find the advertisements of manufacturers of spraying outfits in all agricultural papers. Select a good firm located nearest to you to save transportation charges. Keep some extra nozzles, washers, etc., on hand for emergencies.

Get Rid of Weevils

A Virginia reader asks about weevils in navy beans. Usually, when no weevil-infested beans are planted in a neighborhood, there will be no weevil-infested beans to harvest. But if there is the least danger, it is always well to subject the beans soon after harvest to the carbon bisulphid treatment. Put the beans in tight barrels. Then place on top of the beans, inside the barrel, a saucer filled with the drug, and tightly cover the barrel, leaving it thus for thirty-six to forty-eight hours. The fumes of this bad-smelling and highly inflammable carbon bisulphid are heavier than air and will sink down through the beans to the bottom of barrel, killing all weevils or weevil larvae, outside or inside the beans. But be on the safe side with all beans and peas, and let no weevil escape.

Asparagus in Oregon

How to prepare a bed for asparagus, and how and when to set the plants, are questions asked by a lady reader, and questions that are brought up to me very often. The land must be well drained, warm, rich and deeply worked. For a home patch, somewhere in a corner or off one side of the garden, deep spading may answer, trying to get the heavy coat of manure well mixed with the soil. For larger patches, a heavy coat of old manure should be turned under with the plow. Deep reworking would be of advantage in most cases. This first plowing can be done late in fall, the second early in spring. Grow or buy good, strong, one-year-old roots. Avoid those that have been lying around in packing-houses, nurseries, etc., or have been long exposed to the air after being dug. Avoid old plants. The one-year, if strong and sound, is always my first choice. A long bed of a single row,

for the home garden, is better and more easily handled than a short bed of a number of rows. Give the plants plenty of space, say two feet in the row, with five feet between the rows if more than one. This will give you the desired "fat" stalks. If you have no asparagus-bed now, get busy. How can any family, in a rural home, do without it? It is too good, too valuable, too desirable and generally satisfactory a vegetable to even attempt to do without a full supply. Plant some along these lines. If treated even moderately fair, the asparagus-bed will give you full value and full returns.

Plant-Lice on Melons

A Massachusetts reader reports attack of insects on under side of melon leaves. Leaves of melons and other plants are sometimes thus attacked or infested by an aphid or plant-louse. The only way that I know of promising relief from the attacks of this pest where it once has obtained a firm hold is to spray the leaves from the under side with one of the various extracts or emulsions now generally recommended and offered for killing sucking insects by contact. The best and surest is a strong tobacco extract, like black-leaf (as known in the trade). Kerosene and whale-oil emulsions are all right. Follow manufacturers' directions. Such spraying can be done with a knapsack or auto sprayer and through an angled nozzle. There will be no more trouble this year, of course. But it is well to be prepared another season. Gardeners should keep a supply of such remedies on hand, just as any family should keep some of the simpler remedies, as carbolic acid, adhesive plaster, etc., in the medicine-cabinet ready for emergencies.



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By R. E. Olds, Designer

I have just finished building 60,000 cars, after 25 years in this business.

On October 1, I bring out a new series of Reo the Fifth. It shows all that those years have taught me—all those 60,000 cars. And it shows some new things I have learned within the past 12 months.

Tires 34 x 4

One new thing is these big, wide tires—22 per cent larger than I ever used on a car of this size before.

Tire makers say that this 22 per cent will add 65 per cent to the average tire mileage. And that will mean a very big saving during the life of this car.

These tires, compared with others, will show how I consider your after-cost in building this ideal car.

Roller Bearings

For the same reason I've abandoned ball bearings. There are 15 roller bearings in Reo the Fifth—11 of them Timken, 4 Hyatt High Duty.

There are in this car 190 drop

forgings, to give lightness combined with strength.

I've made the body longer and wider, to give you ample room. My springs are made two inches wide, and of seven leaves of steel. My brake drums are 14-inch.

The steel I use is twice analyzed. My gears are tested to stand 75,000 pounds. My carburetor is doubly heated to save trouble with poor gasoline. I use a \$75 magneto to avoid trouble with ignition.

Every driving part is built sufficient for 45 horsepower. That gives big margin of safety.

Each engine is tested 20 hours on blocks, and 28 hours in the chassis.

Each car is built slowly and carefully. The various parts get a thousand inspections. I limit my output to 50 cars daily, so that every part can be utterly perfect.

Center Control

Each body is finished with 17 coats. It is deeply upholstered with genuine leather, filled with the best curled hair. I use springs in the backs as well as the seats, to insure the utmost comfort.

Even the engine is nickel trimmed.

This car has my famous center control, where all the gear-shifting is done by moving this lever only three inches in each of four directions. It also has left-side drive. You will note that most of the best cars have come to that in 1913 models.

Price, \$1,095

I am building this car at the smallest profit I have ever received on a car. Even smaller than last season, and I thought that the minimum.

I could cut this price easily some \$200 if I wanted to skimp on the car. It would mean smaller tires, less margin of safety, less drop forgings, less roller bearings. It would mean to sacrifice the best I know about making a comfortable, safe, economical car.

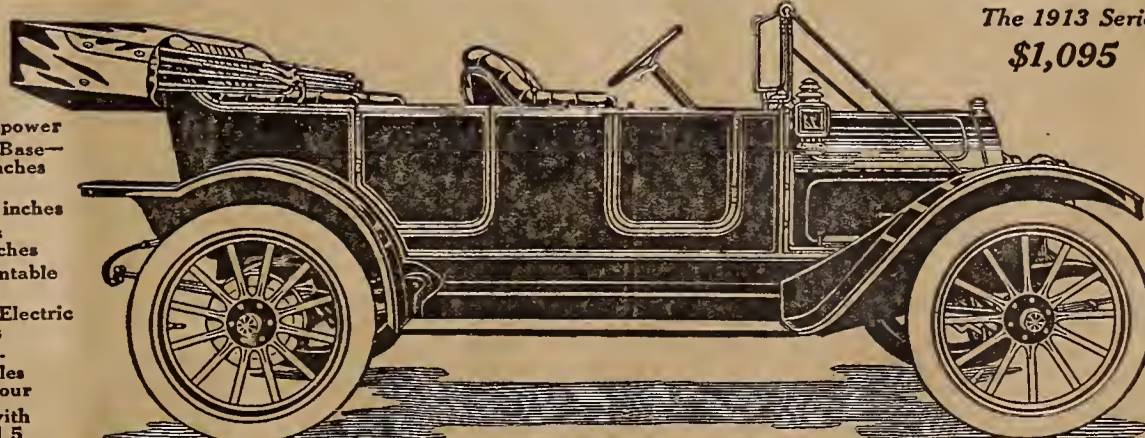
But here is the best I know. And never can any man build such a car for less than I offer this.

Write for our new catalog showing various bodies. About 1,000 dealers, scattered everywhere, are ready to show this new-series car.

R. M. OWEN & CO. General Sales Agents for **REO MOTOR CAR CO., Lansing, Mich.**
Canadian Factory, St. Catharines, Ont.

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The 1913 Series
\$1,095

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Horsepower
Wheel Base—
112 inches
Tires—
34 x 4 inches
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34 inches
Demountable
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Three Electric
Lights
Speed—
45 Miles
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2 and 5
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Bodies



Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer and self-starter—all for \$100 extra.

IT'S THE FOOD

The True Way to Correct Nervous Troubles

Nervous troubles are more often caused by improper food and indigestion than most people imagine. Even doctors sometimes overlook this fact. A man says:

"Until two years ago waffles and butter with meat and gravy were the main features of my breakfast. Finally dyspepsia came on and I found myself in a bad condition, worse in the morning than any other time. I would have a full, sick feeling in my stomach, with pains in my heart, sides and head.

"At times I would have no appetite for days, then I would feel ravenous, never satisfied when I did eat and so nervous I felt like shrieking at the top of my voice. I lost flesh badly and hardly knew which way to turn until one day I bought a box of Grape-Nuts food to see if I could eat that. I tried it without telling the doctor, and liked it fine; made me feel as if I had something to eat that was satisfying and still I didn't have that heaviness that I had felt after eating any other food.

"I hadn't drank any coffee then in five weeks. I kept on with the Grape-Nuts and in a month and a half I had gained 15 pounds, could eat almost anything I wanted, didn't feel badly after eating and my nervousness was all gone. It's a pleasure to be well again."

Name given by Postum Co., Battle Creek, Mich. Read the book, "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.

217 Acres, \$1,600 Cash—Income Last Year \$3,500

Located in New York, the country's greatest hay, dairy and potato state, cutting 140 tons hay, and with spring-watered pasture for 35 cows, machine-worked fields, large valuable woodlot; this is the real farm bargain of the year; income last year from milk, stock, poultry, vegetables, etc., was \$3,500; R. R. station, creamery, milk station, only three miles, school and neighbors near, mail delivered; 2-story 9-room house, 40 x 78 barn, 2 silos, numerous other out-buildings, all in good condition; owner has other business, must sell at once; if taken now only \$5,600, \$1,600 cash, balance easy terms. Further particulars and traveling instructions to see this and another of 50 acres for \$1,200, page 45, "Strout's Farm Catalogue 35," 2nd Edition, copy free. Station 2399, E. A. Strout Farm Agency, Union Bank Building, Pittsburgh, Pa.

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Our nursery stock is raised right—it is the best you can buy. Clean, strong, well-farmed trees that are vigorous and true to variety—trees that will reach maturity—The kind YOU want. We also have a fine stock of Dwarf Fruit Trees. Careful attention given to shipping and packing. Satisfaction guaranteed. Prices reasonable.

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RAILWAY C. I. Dept. 33, INDIANAPOLIS, IND.

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With Rubber Tires, \$18.45. Your Wheels Re-rubbered, \$10.30. 1 make wheels 1/2 to 4 in. tread. Tops, \$6.50. Shafts, \$2.10; Repair Wheels, \$5.95; Axles \$2.25; Waggon Umbrella free. Day direct. Ask for Catalog 7.

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\$3 Package will cure any case or money refunded

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Crops and Soils

Cursed Dirt!

By G. Henry



THIS is the one expression applicable to everything, everybody—man, woman, beast, tool, patch of ground, ten-acre lot, ranch, farm, house, household, food, barn, milk, fodder—on the place. Having sincerest contempt for stereotyped mottoes—which, by the very reason of their being mottoes, always slap us in the face with notice that we must not do the very things we want to do—it does yet seem that some way should be devised to keep the word CLEANLINESS ever rumbling in our ears or staring us in the face.

The clean pigsty—oh, pigsties can be kept clean; my father raised Cain if the piggeries on his farm were allowed to get dirty—conduces to healthy pig mothers and pig children.

Clean stalls for horses make horses look better and sell better. A clean stall makes a better horse.

Take it home: aren't you happier, can't you work better, if your body is clean than if it isn't? So the horse.

Go to the cow-barn. The farmer who lets this place get dirty—which above all others should be kept clean,—the farmer who compels his cows to wallow in filth, is a failure! He has difficulty selling his milk. His cows do not keep in condition. His hired man, he himself becomes slouchy and slovenly and careless in other work, if he has to milk cows in a dirty, filthy stable. Dirt gets into his blood.

We learned long ago that chickens do fifty per cent. better if the hen-house is kept wholesome, if the chickens are given half a chance to keep themselves as clean as they would do in their natural wild state. The chickens are trying to earn money for us.

Then tools. The plow thickly coated with rust is a dirty plow. The mowing-machine permitted to stand unprotected in the open or half protected in a shed which is falling down, when not in use, gets rusty; and no amount of oiling and greasing can put it back in as good condition for business as it would be if it were properly housed after mowing is done.

Why, you can't keep a good fire in a dirty stove, which is to say a stove with grates warped and bricks six inches thick with clinkers.

Does a good housewife bake bread in dirty pans?

Would you drink water out of a dirty well?

Do your boots feel comfortable when you put them on in the morning if you slam them in a corner at night, without cleaning, after having worked all day in the mud?

If we hesitate about driving to church on Sunday in a dirty buggy, why in the name of common sense don't we apply the same theory to the hay-tedder? The buggy looks better and runs easier if it's cleaned and oiled. The tedder will pick up the wetted hay and throw it farther if it has had the black, gummy, old grease wiped away and new grease applied. If half its "teeth," or forks, are missing, it will work just about as incompetently as we chew tough steak when half our teeth are missing.

Apply the "cursed dirt" philosophy to everything on the farm: harnesses, wheelbarrows, wheel-harrows, old-fashioned drags, cultivators—apply it to yourself, and it will enter your soul!

Broadcasting Wastes Seed

THE universal practice of broadcasting clover, alfalfa, grass-seed and small grains is wrong, wasteful and expensive, and ought to be abandoned by every farmer who is regardful of his own best interests and who is seeking fair and certain results from his outlay of time, labor and money. This practice of broadcasting has always been followed in the past because the means by which to follow any other or better method was not available. Clover and alfalfa have always been uncertain crops, due largely to the methods of broadcast seeding. As a matter of indisputable fact, the place to sow seed of any kind is in the ground and not on top of the ground. In connection with the broadcasting of clover-seed more than eighty per cent. of the seed broadcasted is wasted. By accurate weight and careful count it is ascertained that there are 18,000 red-clover seed in one ounce, which would make a total of 288,000 clover-seed to a pound. There are 43,560 square feet in an acre, thus it will readily be seen that every pound of red-clover seed sown per acre means an average of about seven seeds to each square foot of ground. About ten pounds of clover-seed to the acre is a fair average of the amount usually broadcasted, although a less quantity is sometimes seeded, local conditions having a bearing on the amount sown. This means that an average of about sixty-six seed to the square foot is broadcasted in the average sowing.

After research and investigation, it is ascertained that a stand of six clover-stalks to a square foot is above the average growth and, strange to record, is considered a good stand. Thus it will be seen that sixty-six seed are being broadcasted per square foot to catch a stand of six stalks of clover to the square foot, and a realization of the enormous waste by broadcasting is readily gained by the consideration of the foregoing words.

This heavy and unnecessary loss on broadcasted seed generally occurs after the seeding is completed, by the washing away of the broadcasted seed by rains, the blowing away of the seed by winds, the ravages of the birds, adverse weather conditions, notably drought, and all of this loss is due largely to the inefficient method of broadcasting seed. Uncalled-for expense and uncertain yield go hand in hand with broadcasting. If anything worth doing is worth doing well, then so important a matter as seeding should be done in the best way possible in order to obtain the best and most satisfactory results. While the price of clover-seed, alfalfa and other kinds of small seeds and grass-seeds has been very high for some time past, yet it is the uncertainty of the amount of the stand that is the matter of the greatest concern to the sower.

How quickly the custom of broadcasting wheat, oats, etc., was abandoned with the advent of the grain-drill that would sow these larger seeds into the soil in a proper and effective way! Seeding-machines that broadcasted the grain upon the surface and harrowed same into the ground, which formerly sold in large numbers, are now almost out of manufacture, for the reason that it was soon ascertained that a lesser amount of seed could be sown and a larger yield was always the result obtained from sowing the seed into the soil. The governing reasons for the proper seeding of wheat, oats and other grains are entirely applicable to the seeding of clover, timothy, alfalfa and other small seeds and grass-seeds.

By sowing these smaller seeds into the ground, instead of broadcasting on the ground, a more equal distribution of the seed is made, and bunching, incident to broadcasting, is avoided, and a large percentage of the waste due to the causes already mentioned is practically eliminated, but, best of all, a heavier stand and larger crop is almost always the ensuing result from such proper method of seeding. The proposition of seeding clover, alfalfa, etc., in the ground is not an experiment, but the correct method that ought to be followed, and is the only way from which anticipated and beneficial results from the large outlay for seed, time and labor can be successfully obtained. In this day of progress and conservation this proper and remunerative method should be followed by every intelligent farmer in the land. P. A. LEWIS.

Stacking the Fodder

BY STACKING the fodder, less storage-room is required, the sweetness is distributed more uniformly and the dust does not settle on the fodder as it does when it is stored. The fodder should not be too ripe when it is pulled.

For a 14; 15 or 16 foot stack, an 18 (for first two) or an 18 1/2 (for 16-foot stack) foot pole will be required. Or, in other words, for a stack that will be from 12 to 13 feet high, cut pole 2 1/2 feet longer, and for stack 14 to 15 feet high, add 3 feet, and so on. If clay is on or near the surface, a hole will have to be dug for the pole; but if deep, loose sand, the pole may be run down (after the lower end has been made wedge-shaped) by two people standing on opposite sides of the pole and pushing it back and forth. If the sand is dry, it will slide in as fast as the pole pushes it out. Stop this by pouring a bucket of water in the hole. The proper depth should be marked on the pole.

The bed should be about six inches from the ground. Place three or four pieces of scantling (lacking these, the same number of poles, six inches in diameter) so that when the hoards are laid on, a square bed with the pole in the center is formed. The size of the bed must be determined by the length of the fodder.

For a single stack (and this is the only kind the novice should tackle), place a bundle on each corner; next, one midway between each of these; then, "break" all "joints" as in putting on shingles. In the first two rounds turn the tails to and jamb them against the pole. All succeeding rounds should be made with "tails" out and "butts" to the pole. Lay the bundles so that no holes will be left when the next round is put on—very much as shingles would be put on, except that in laying shingles in a circle they are cut with a slope, so as not to double up at the thin end. On the other hand, doubling the fodder will help to tie it, if it is kept pressed down with the feet. Hold the pole with one hand, catch and lay the bundle with the other, step from the last to this bundle, placing the feet near the pole. Catch the pole with both hands and spring as you would to jump, not leaving the bundle, however, and come down with all your might. Proceed as above until ready to "draw in."

The caps, as well as the "drawing-in" bundles, should be counted out at first, or

in time to secure two double bundles for caps, and twenty singles for drawing in, and it is a good idea to draw in the last round made before beginning to draw in proper.

"Drawing in" means dividing the head of the bundle in half and shoving the band nearer the pole with each succeeding round, until, with the last few bundles, the band rests against the stack-pole.

The caps are made by taking two large bundles and removing all the bands. Tie these "cap" bundles with a single band, placed in the center of and encircling the bundle. This can be done best on the ground and by the one throwing up of the fodder. The stacker does not leave the stack until it is completed. The operator, after catching it, forces his hand through the center of the bundle, and turns back the "tails" and "butts." He then places it on the stack-pole with the end in the hole and works the cap down on the fodder. At least one more cap should be put on like the first.

It is easier to stack damp fodder (as when a light dew is on it), but fodder should never be stacked wet.

A double stack uses more fodder on the same pole. This system makes the bed broader, enlarging the circle. The inexperienced hand, however, had better not try this. R. M. McDANIEL, Georgia.

Good Seed-Corn

WHAT is good seed-corn? Now, this looks like a foolish question. But if you will ask ten practical men, all of them experienced corn-raisers, you may receive ten different answers.

In the first place, I guess we will all agree that good seed-corn is corn that will grow. If we have a seasonable fall, all the corn in this country will grow at a proper time for gathering it, say the first half of October, in Ohio, and it will still grow next spring if it be gathered at that time (October) and put away in a proper rack where it will dry out quickly, and then if it be protected from freezing through the winter.

But given corn that will grow, what variety will be best? Well, for you the variety that should be best will be the variety that you have grown on your own farm for the last twenty years, for that variety should be adapted to your farm, be it a fertile farm or a poor farm. If you have been making a change every two years, of course you have no variety.

But if you are going to make a change and get a pure-bred variety? Then, will we go to the State fair, say, and buy the prize ten ears, or bushel of corn?

I say emphatically, NO. Any ten ears good enough (big enough) to win first prize at any State fair are too big to be of any use to you. If I were going to buy some corn at a fair or a corn-show, I would search for the samples, and likely the smallest sample in the color I wished, and take that sample away. The smallest sample shown will average fifteen ounces, on a dry basis, to the ear, and will be big enough to raise a maximum crop on good strong soil, and will likely be too big for a maximum crop on a thin soil.

Oh, yes, I formerly looked at an ear of corn differently. The first ten ears I showed at a corn-show weighed twenty pounds. And the judge very wisely turned them down. He was wiser than many judges.

The thing that opened my eyes was my breeding-plots. I have been breeding the same corn now for some ten years, with the ear-to-the-row test-plots. Now, in these breeding-plots I have been forced to see that the moderate-sized ear was oftenest the heavy yielder.

And its row yielded because each stalk bore a good little ear.

There can not be laid down any very sure rules, however, to guide one with much certainty to the particular moderate-sized ear that shall be a heavy yielder. Nos. 7 and 8 may weigh the same to the ounce, be the same length, and yet No. 7 outyield No. 8 anywhere from twenty to one hundred per cent. Mr. C. G. Williams of the Ohio Experiment Station, or Professor McCall of the college, will give light as to the better ear oftener than you or I, but still they will sometimes be guessing. But anyone who is now growing sixty bushels of corn to the acre with his own selections of his own seed may rest assured that, could he pick the right ears to plant from his own crib, his yield might jump to seventy-five bushels, or even ninety bushels, to the acre. He may rest assured that if he is picking for the biggest ears or the smallest nubbins he is not getting the best. Until we know a little more about corn than we do now, I know of no better way to find the yielders than to plant some fifty half-ears in as many rows, and let the weighed yield show the prolific ones. The ground must be uniform and the stand uniform, of course. Further, every plot will likely show a few rows with late corn that will be sappy and unmerchantable at harvest-time. These rows should be discarded, regardless of yield.

Having learned the desirable numbers, you should have ten out of fifty good enough to plant the following spring in a patch by themselves, in what I call a small multiplying plot, and from this small multiplying plot enough good ears should be found to plant a larger plot the next year. Likely ten

bushels of good corn, and of a type, may be found, or enough to plant twenty acres. And from this twenty, enough good seed to plant your crop.

Now you will meet with some discouraging things, and you will be tempted to throw your work away in disgust. Don't do it. It will come out all right if you stay with it. If you are a corn-lover, you will collect a mighty pretty sample of fifty ears. But when you harvest the crop from them and do not find, from two thousand stalks, fifty ears as pretty, and when you find your corn splitting up into many types, some of them utterly at variance with what you planted, you may be disgusted. Never mind about that. We can't help it. When shelled and mixed for your multiplying plot, much of this "crazy" ear business will disappear.

Likely you can make a little faster progress in fixing a type with inbreeding, but I have always shrunk from this, fearing to lower vitality. You can make fast advances at first by cross-breeding, but the advances will not be sustained, and before you try it make sure that your strains are very similar, or you will have a medley, that will take you a long, long time to reduce to a type. And type is important. How are you going to get a planter to act with any uniformity if you ask it to plant both wide and narrow kernels, long and short kernels, at the same time? And how can you expect uniform maturity?

And after a while maybe you will reach the limit that good seed may do for you and be obliged to resort to soil-enrichment for further increase in yield. But I do not think you will reach that limit in less than ten years. And you will learn that one of the laws of breeding is an infinite variation in spite of you, and perhaps that it is easier to recede than to progress.

WILLIS O. WING.

Weeds

HERE is a bit of advice which Amzi wishes farmers might have written on their hearts, or pasted in their hats, or otherwise so disposed as never to be by them forgotten:

"The time to kill a weed is before it is born!"

In Amzi's country there was introduced, some years back, an implement designed to head off the weeds—the ounce of prevention cracked up by the proverb. It was an admirable tool, and so cheap that everybody could buy it. Three or four farmers bought, but nothing could induce them to do anything about weeds till there were weeds in sight, and so the implement was voted a failure.

"When my father was a boy, back in New England," relates Amzi, "about the only weapon they had to fight weeds with was the hoe. Since then there has been a great improvement in weapons, but are there fewer weeds? It doesn't look so. My neighbor buys the latest manure-spreader and tons of commercial fertilizer, and then harvests his potatoes in weeds so big and thick you can't see him except when he stands up straight. He's called a good farmer, too."

When Amzi thinks of the toll weeds are taking out of the American farmer's pocket, it makes him shudder.

"The most iniquitous tariff that the most iniquitous Congress ever got up isn't a drop in the bucket by comparison!" he declares.

RAMSEY BENSON.

Fruition

By Berton Braley

NOW the wheat has gone to market; now the "fodder's in the shock";

Now the trains and ships are filled with golden grain;

Now the stockman figures profits on the selling of his stock;

Now the days of fall are with us once again;

Now the turkey's getting fatter, and the grape is on the vine,

Getting riper, sweeter, daily in its skin;

Now the apple's turning redder, and the atmosphere's like wine,

And the money for the crops is coming in.

Now the district school has opened, and the country children trudge,

To the little cozy schoolhouse on the hill;

Now the county seat is busy, and we see the county judge

As he runs his court with dignity and skill;

Now the campaign's getting hotter, there are speeches every day,

And we speculate on who is going to win;

Now the young folks go to dances, and the country life is gay,

And the money for the crops is coming in.

Now the county fair has started, and the farmer comes to town

For the yearly crop exhibits at the fair,

And he buys the children peanuts, and his wife, perhaps, a gown,

And he meets his country neighbors who are there;

Now he gets some fancy cattle and, let's hope, a motor-car,

And his face is all a-crinkle with a grin;

For the farmer is the monarch of all monarchs that there are

When the money for the crops is coming in!

Cutting Corn Three Times

LAST winter, I heard a farmer say: "If we had counted time worth anything this winter, we would have come out in the 'hole'."

Further conversation made lucid the fact that throughout much of the winter conditions for feeding were such as to really add two cuttings to that performed on the corn when it was first put into shock in the fall.

Early in the winter there had come a storm which filled the shocks, inside and out, with snow. A short thaw followed, melting the snow in the shocks; then a freeze, and the bottoms of the shocks were a cake of ice. As conditions grew no better, the farmer took occasion to cut a lot of this corn loose, when his sons were home from school to help him, and hauled it up and stacked it near the barn. Another sudden shower put a pond of water around it here, which soon became ice. So to get it into the feed-racks he again had to cut it loose.

While this is an extreme case, the same thing occurs in a more moderate degree every winter. And as the man's statement insinuated, we farmers give too little consideration to the time-factor of our work.

If the farmer, whose case I have cited, was to rightly consider the benefits he would derive from a silo, he would make a grave error if he did not go further than the mere proposition of getting corn into silo or shock; he would have to figure the value of the time spent each winter in "cutting corn the second and third time," most of which the silo would save.

P. C. GROSE.

It is a fact that there is no department of effort from which a larger return can honestly be secured than from intelligent and painstaking cultivation of the soil. The scientific management, as now demonstrated, shows that the fertility of the average soil can be much increased and made more profitable.

If your cream-test varies more than one or two per cent., you have varied your dairy methods in some way, either in connection with handling, feeding and caring for the cows, in handling the milk or cream, or in running the cream-separator.

Some of us farmers seem to think that double cropping means a row of corn with a row of weeds between.

Wheel Grease AND Grime



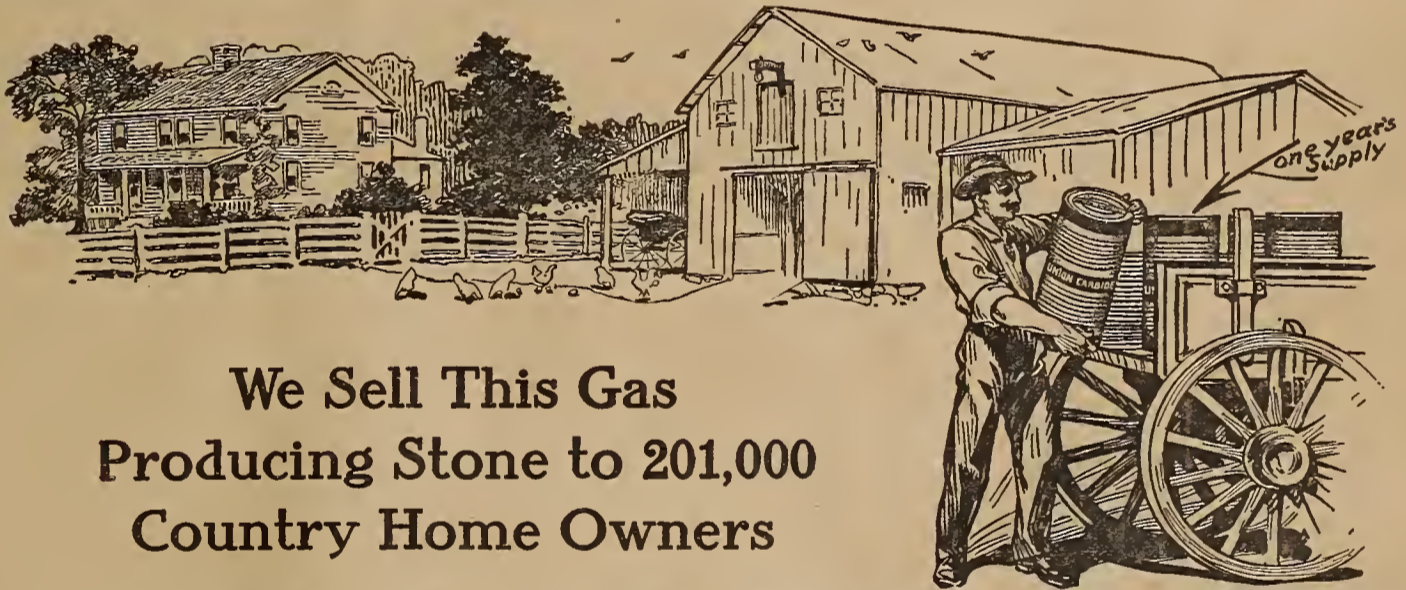
Quickly Taken off with —

After greasing the farm wagons, a little Old Dutch Cleanser will start that blackened grease and grime from your hands. It works just as well on any kind of stains and farm work discolorations. Moisten hands, sprinkle with Old Dutch Cleanser, and wash in clean water. Saves twice the effort and time.

Many other uses and full directions on large sifter can—10c.



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The stone is artificial. To make it we heat lime and coke in electric furnaces at a temperature of 6000° Fahrenheit—the highest temperature known to science. With the aid of this great heat the materials used are fused into the curious stone known commercially as Union Carbide. This Carbide comes from the furnaces in huge chunks. These we crush into a number of different "sizes" for different uses.



LIGHTING

Packed in sheet steel drums and cans, we ship this Union Carbide direct to customers from our own warehouses, located in all parts of the United States. In these drums the Carbide will keep indefinitely and can be stored and handled as safely as coal.

Drop a piece of this Union Carbide into water and a seeming miracle takes place. The dark stone instantly changes into white slacked lime. At the instant of this transformation, the stone releases a quantity of gas, which bubbles to the surface of the water. This gas is genuine acetylene, a hundred feet of which will give more light than a thousand feet of city gas.

The process of making this gas is simply one of bringing the Carbide and water in contact. Several types of machines have been designed to do this automatically. The best of these machines bring a very small quantity of Carbide and water together at a time—just enough to supply gas to the burners when they are in use. When the burners are turned out the machine stands idle.

These machines have been perfected with the aid of the National Board of Fire Insurance Underwriters. They are now mechanically perfect—so perfect that there are over 201,000 in use. No one who has ever seen one of these acetylene lighted country homes will ever forget the beauty and brilliancy of the light. No one who has ever cooked on an acetylene range will ever again go back to coal and wood.

We do not handle Carbide gas machines. We only sell the UNION CARBIDE, which the machines all use. It is obviously to our interest to exert every effort to aid country home owners to secure Carbide machines that will insure satisfaction. To this end, we keep posted on all machines which use our product. We know which ones are best suited to different requirements, and we gladly supply information and advice to all who care to write us.

Just send us your name and address and tell us how many rooms, barns and outbuildings you wish to light. We will tell you just what type of machine you should have—tell you where it is made and give you an estimate as to its cost.



COOKING

With our letter, we will send you with our compliments a book about this rural illuminant and cooking fuel. The book tells how the lights can be fixed to light without matches. How they can be permanently fixed to walls and posts in barns and outbuildings. How the machine, the handsome bronze chandeliers and the cooking range can all be set up with little labor. It tells the whole wonder story of just why over 201,000 of our customers have found this Carbide gas much safer and many times more convenient than coal, wood and kerosene it is displacing. Write us today.

Tell us how many rooms in your house and how many barns and outbuildings you have. We will write you fully and frankly and send our free literature by same mail. Just write to UNION CARBIDE SALES CO.—Peoples Gas Bldg., Michigan Blvd., Chicago, Ill.

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Farm Notes

Sold by Producers

HERE is a load of vegetables that was sold in South Water Street by a vegetable-selling concern whose members are growers. It is known as the Greenhouse Vegetable Company, and the members of the company are members of the Cook County Truck Farmers' Association, of which the membership is about fifteen hundred, divided up into a number of local unions.

It is thus seen that the sellers are their own producers and the producers are their own sellers, the profits of the concern being divided among its membership.

Aside from the fact that this commission company is composed of its own producers, the business is handled in the same way that



"This load was sold to a pedler"

any other commission business is handled. The accounts are kept in the same way, and a grower consigns his stuff to his company in the same way that he does to any other.

This wagon-load of stuff was sold to a pedler. It was hauled to Sixty-third Street and disposed of to consumers in that territory. In the same way sales are made to grocers and meat-market men, and by them hauled to many parts of all three divisions of the city.

J. L. GRAFF.

Managing Stubborn Horses

HOW can I get a horse to cross a stream of water when he is afraid to go in? The horse once threw a person off his back in a river, and ever since has been afraid to go into water.

"Also, I would like to know how to manage a horse that is worked to a one-horse delivery wagon in town. After the wagon is backed up to the platform, he will not stand, but keeps stepping forward, and back again, until he breaks the wagon or harness."

The questions come to us from a reader in South Dakota.

(1) I should first try to get the horse into the water by backing him in. If this does not work, tie him securely to the tail of a heavy wagon that is hauled by a good, strong team, and drive the team back and forth across the ford until he gets accustomed to it and forgets his fear. Repeat this for several days, and then try to ride him across with two or three horses in the lead. The chances are that with this companionship he will go all right. Then have one horse in the lead, and finally try him alone. This is the rational way to treat his case and ought to cure him, though I cannot say how much treatment will be necessary, as horses differ greatly in the readiness with which they respond to treatment.

(2) The cure for this second trouble is easy. First, have a good, strong harness. Attach a strong cord to the near forefoot between the hoof and fetlock; run this line up through the belly-band and back into the wagon. As soon as you get the wagon backed up where you want it, pull this cord till you have your horse standing on three legs, and hold it there till he is ready to stand quietly. In this, as in all other treatment for vices, you must be very patient and persevering, but with most horses, for a vice of this kind, only a few lessons, comparatively speaking, are necessary.

DAVID BUFFUM.

Storage Increases Profits

AT THE approach of winter even the city dweller shows a disposition to buy with an eye to the future and to a certain extent does so, although the fact of storage, shrinkage and decay are discouraging to a very extensive store on the part of the consumer. Notwithstanding this, market conditions are at low ebb before frost. Confronted by the problem of getting a quantity of farm produce off his hands in late fall the farmer often pushes it into an overfull market, and under these conditions, with the expense of handling and selling, he often realizes considerably less than he should for his labor and produce. Were farmers generally equipped with the means of holding their squashes, potatoes, pumpkins, cabbage and such crops well into the winter, with safe transportation, they would realize greater profit with no less advantage to the consumer. The risk of decay is too appalling, however, for the average farmer to assume. Nevertheless, there is a means of realizing a better price upon winter fruits and vegetables, that appeals strongly to the small producer of a great variety of fruits, and that is the supplying of individuals in nearby towns and cities. Freight rates are no worse, commission is eliminated, and the cartage may be looked after by the consumer.

One must win his way into the confidence of this class of customers by strict integrity as to quality and packing, and in turn he must deal on a strictly cash basis, to insure his profits. A customer once "queered" by a dishonest package is not regained, and fruit and vegetables that keep poorly will cause an aggrieved feeling on the part of the city customer.

To obviate this difficulty, greater pains must be taken to "cure" such vegetables as squashes, pumpkins and sweet potatoes and to retard the ripening process in winter pears and apples. Last year Baldwin apples, which in this New Jersey latitude are kept after Christmas with difficulty, owing to the ripening effect of our warm autumns, were with us yet by March 1st, and this, too, in spite of a long, dry autumn. These apples were kept in a cold cellar at a temperature almost scraping a freeze, in fact some hard-head citron did freeze beneath a window a few feet from the apples. Sweet potatoes, squash and pumpkins may be kept in a cellar heated by a furnace, provided they are well above the floor and away from the walls. Crates or baskets should be used for these, but these must be well cured before storage. The proper curing of squashes and pumpkins is accomplished by cutting them loose from the vine when mature and allowing them to lie in the sunshine of early fall until the stem dries hard and horny. Immature squashes do not cure well. They must not feel the frost. When this danger approaches, the heaps must be covered with leaves or straw on cool nights. As the weather grows cooler, they may be placed in a ventilated building with a dry floor.

In the case of sweet potatoes, their keeping depends upon drying out the moisture that is in the tuber when dug. Failure to do this results in sweating, so disastrous to their longevity. The potatoes may be allowed to lie on the ground in a moderate sun a few hours after digging, but intense heat will scald them. When taken up in small peach-baskets or other slatted receptacles, they should be dried for several days in a building heated to a low degree. This is the secret of sweet potatoes that keep.

Irish potatoes and turnips require a cool air, not lower than forty degrees.

Parsnips, carrots and beets are of the finest table quality when right from the soil, and where the ground does not freeze for more than an inch or so may be left where they grow until late in winter. Convenience usually requires that they be gathered, however. These keep splendidly when buried in sand upon the cellar floor. Where one has a good root-cellar, these crops may be made very profitable to the farmer who holds them for better prices.

M. ROBERTS CONOVER.

The American Goldfinch

SUPPOSE that you could pass by in the summer or early fall a meadow, field or lane in which there were a number of tall weeds and especially the common thistle. It is in such a place that the American goldfinch secures its food and rears its young. This wild canary, as it is often called, may often be seen perched on the top of a tall thistle, sour dock or wild lettuce busily engaged in securing a meal of the seeds. Another source of its food-supply is the sunflower and the many insects that are to be found along the roadsides and in the fields.

This thistle-bird, as he is known in some localities, is one of the brightest dressed birds that we will have the privilege of seeing during the summer. He often spends the winter in northern United States, but he often loses his bright coloring by early spring and does not look like the same bird that he did during the mating season. During the summer he is of a bright yellow, with the exception of the top of his head, wings and the tail, which are a black. This color-

ing is changed in the early fall to a plainer, but a beautiful, suit of olive and brown.

The goldfinch is one of the latest birds to begin nesting. The mating season seems to be a long one, as it is usually the last of July before the nests are made. During the early summer months the goldfinches may be seen in small flocks in the fields or along the small streams. It is in this mating period that he renders his best songs. They are easily recognized now as they fly about the fields, singing their clear and joyous notes. They have a wavy flight as they pass from field to field, and it is on the downward movement in their flight that they sing. The nest is made of mosses, fine grasses and the down of the thistle. The nests are commonly built in small trees or bushes that are near the fields in which their food is to be found. Quite frequently, however, the nest is built in the upper part of a cluster of grass. There are from four to six bluish-white eggs. The most striking characteristic of this happy songster is the fact that the brooding season occurs after nearly all the birds have nested. This may be accounted for in that he does not migrate so far as many other song-birds and also from the fact that he raises only one brood. Another reason that might be given for the apparently unnatural delay is that they are waiting until their food-supply has begun to ripen, thus affording better conditions in the rearing of the young. The most plausible reasons are that on account of his attractive coloring and his inability to defend himself against the larger birds that he has found that his nests will less likely be disturbed during a late season when the food-supply is abundant.

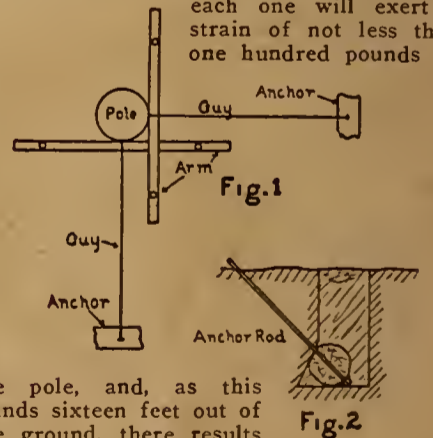
There are very few birds that have so many commendable traits and so few destructive tendencies. Taking into consideration his song, his highly colored plumage and his inestimable value in the destruction of seeds, it would help him much in his struggle for existence if we could leave a lettuce-stalk in the garden, a thistle in the byway or a sunflower in the field. Such a help to this little benefactor would also aid him to become more domesticated, and we would at the same time become more familiar with his ways of living and have a better opportunity to enjoy his song and to see his beauty.

EDGAR S. JONES.

The Farm Telephone

Problems and Methods of Guying and Wire-Stringing

IN THE course of an experience covering over twenty years of construction work I have had frequent occasions to examine country lines and have yet to find one properly guyed, although this is, perhaps, the most important detail of line-building. Poor poles, badly framed and carelessly set, are capable of long and effective service if the guying is well and properly done, while, on the other hand, if it is neglected or done improperly, the very finest poles and workmanship will fail to give good or even fair service. Just why practical men, as most farmers are, should neglect this item is something I could never understand. Imagine what would happen to your wire fences if the corners were not braced, or to a wagon if all the bracing-irons were left out. The fence or wagon so treated would not stand up very long, would it? Now consider a pole at the end of a line or, what is the same thing, on a corner. When the wires are pulled taut, each one will exert a strain of not less than one hundred pounds on



the pole, and, as this stands sixteen feet out of the ground, there results a pull of sixteen hundred pounds at the ground-line—sufficient to bend or break the pole. That it does not do so is owing to the fact that the top of the pole moves toward the strain; that is, leans toward it. The result is slack wires.

The simple rule applied in all good work is, "guy against every strain and in line with it." The commonest and best form of anchor is a log of wood not less than six inches in diameter, nor less than four feet long, buried in from four to five feet of earth. Through this is run an iron rod one-half inch in diameter, threaded at the lower end and furnished with a nut and three-inch square washer; the upper end is welded into an eye. These are furnished by all supply-houses more cheaply than a local blacksmith can make them. The usual length is six feet. They may be galvanized, but this adds to the price without any corresponding increase in quality—my own practice is to always use plain rods. The hole is dug as far from the pole as is convenient, the farther the better; but in no

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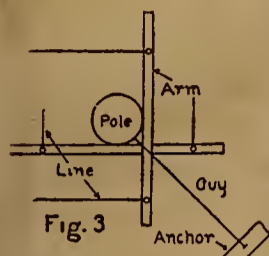
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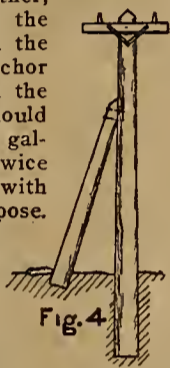
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case closer than one third the length of the pole above the ground. It is plainly evident that the farther back the anchor is set, the less the strain on it will be, but the distance must, of course, depend on the possibilities in each particular case. In heavy city work it is often necessary to set a guy stub—that is, an additional pole—across the road, but in rural construction this is rarely, if ever, necessary. Fig. 1 illustrates a simple corner and Fig. 2 the correct method of setting the anchor. Note that in this figure the buried log pulls against undisturbed earth, which is the only proper practice. One often sees a corner guyed as in Fig. 3, which is called a "quarter guy"; but this is a makeshift at best and should never be employed except in cases of absolute necessity. Another method much used some years ago is shown in Fig. 4, but this is clumsy and expensive. There are on the market a whole host of patent anchors, but their use is not recommended. I have had occasion to test all of them and find them many times as expensive as the form above described and invariably unsatisfactory except in the very large sizes, and the price of these prohibits their use.



All corners should be turned as shown in Fig. 4A, the pole being fitted with two arms at right angles to each other, care being taken to keep the jumpers out of contact with the arm or pole. From the anchor to just below the cross-arm the guy proper extends. This should be of five-sixteenths-inch galvanized steel strand passed twice around the pole and secured with a clamp made for the purpose. These clamps, as usually furnished, are of two patterns, one called the "Crosby clip," consisting of a staple running through a cast-iron seat with a nut on each leg of the staple; the other, called the two-bolt clamp, two flat plates grooved to receive the strand and clamped together with two bolts. Either form is equally good. The guy is made up around the pole first, and the free end led through the eye of the anchor-rod, pulled taut and then made up exactly as at the upper end.



One final word on this subject: don't be afraid to rake the pole against the strain. This little feature is often neglected, but is important. Pull the top of the pole over a good foot toward the guy.

Handle the Wire Carefully

The poles being set and guyed, the stringing of the wire will begin. Iron wire comes in half-mile coils, each tagged with its quality, "Steel," the poorest; "B," the poorest iron, little, if any, better than fence-wire; "BB," the quality recommended, and "EBB," the very best, but not ordinarily required. Steel wire should not be considered, as it simply will not last, and if the line be of any length, its high electrical resistance renders its use impossible. The "B" iron is only one grade better than steel and, as a rule, the galvanizing is very poor. The "BB" of any reputable maker is a good quality of soft iron, heavily galvanized, strong and capable of indefinite service if properly handled. The "EBB" is too soft and is used only in exceptional cases and for special purposes. It may be said, once for all, that wire should always be handled carefully, for a break in the galvanizing means a rusted and weak spot in the wire. Plain iron wire would easily rust down.

For handling the wire there will be required as many reels as there are wires to be strung—in the case we are considering, two. These may be purchased from the supply-houses at a cost of about seven dollars each, but, as a rule, can be borrowed or rented from the nearest telephone or electric-light company. There are two methods of stringing out the wire, one by having the reels stationary and pulling the wire out over the cross-arms or along the ground, the other, which I always use, by placing the reels in a wagon and letting the wire pay off as the wagon is driven slowly along as close to the poles as possible. This method saves all wear on the galvanizing. The same wagon will carry the insulators, extra coils of wire, tie-wires, tools, etc., and the driver will drop two insulators at the foot of each pole. If a bracket line is being built, he will drop the brackets, also. The wire being fastened to the insulators at the end pole, the linemen will carry them up the poles and place them in position. If but one or two wires are to be strung, the better practice is to pull slack as the work proceeds. Two men standing at the foot of the pole ahead of the lineman can pull the wire taut by hand

Fig. 4A

under his direction or can use a loop of strand around the bottom of the pole and a pair of "slack blocks" fitted with a hook at one end to engage the loop and a "Buffalo" grip at the other. The wire is tied into the groove of the insulator by a tie-wire made of the same wire as the line-wire, about twelve inches long, bent into proper form and tied by bringing both ends under the line-wire and taking not less than three complete turns around it. As the end of each coil is reached the next will be spliced on with the ordinary "Western Union" splice. Too much care cannot be taken in this matter of splicing, as the splices are invariably the weakest spots in the line from an electrical standpoint. It is common practice to solder the joints, but with a good quality of wire and careful workmanship it is doubtful if this is necessary or even expedient. One cannot give directions on this subject in writing, and a good lineman can teach anyone to make a first-class joint in half an hour. Splicing sleeves are now made for iron as well as for copper wires, but they require special tools and are not ordinarily recommended. The wire is invariably "dead-ended" at corners, and the greatest care should be used in splicing in the jumper wires. I have more than once seen these forgotten entirely with results that may be better imagined than described. It should have been said that, unless in regions where sleet-storms are prevalent, No. 14 wire will be amply large for all lines not exceeding thirty miles in length, unless a grounded circuit is used, when the wire should be No. 12. The next paper of this series will deal with the drops, house-wiring and installation of instruments and lightning-arresters.

H. J. MINHINICK.

Plan for a Brooder-House

ANYONE intending to build a brooder-house which shall be satisfactory, brood the chicks well and at the same time be comparatively cheap will find that the following type of house will do very well. The house is fifty feet long and ten feet wide, having two pitches to the roof, the longer pitch being in front. The back wall is six feet high and the front four. The first ten feet of the building is devoted to the heater, coal and other tools and accessories. The remaining forty is divided into eight parts by partitions made of inch-mesh poultry-netting one foot wide and fastened onto strapping. There are half-light windows hung on hinges from the top, one to each part. The heating system is hot water. Four pipes are used, being placed four inches from the floor at the end nearest the heater and about eight inches from the floor at the opposite end. Newly hatched chicks are kept in the end nearest the heater, and as they grow older are changed to compartments farther away. The four pipes are enclosed in a continuous box divided by partitions every five feet and are two and one-half feet wide. The sides of the box extend to within a few inches of the floor, this opening being left to allow the chicks to go in and out, also to facilitate the cleaning. The top of the box is hinged on the back so that it can be lifted up to allow the operator to see all his chicks. No space is left for a walk, as the writer believes that it is a waste of room. The operator in going through the house usually needs to be near the chicks and with them, and if he is in a walk it is less convenient to have doors or gates to each part than to step over a low partition. The floor timbers are two two-by-fours nailed together for the sill and two-by-fours for the cross-pieces. The studding and rafters are all two-by-fours and the floor is of matched boards, which is as nearly rat-proof as any board floor can be.

A. W. RICHARDSON.

Hunting for success is like seeking four-leaf clovers. The quickest way to get some of each is to raise them.

Necessity will in time force farmers to adopt better paying methods. The soil must be studied from a geological standpoint, and the essentials of fertility must be supplied wherever lacking. Then, and not until then, will come gains in yield worth corresponding profits.

The cost of poultry production could be reduced with small effort, and the amount of products greatly increased, if more of our farmers would save all the odd, small and second-hand truck products, such as turnips, beets, potatoes and cabbage, at harvest-time, storing them to cook with a bran-mash for the poultry during the winter months.

The Typewriter on the Farm

TO-DAY, as the farmer scans the advertising columns of his farm papers, he notices that the typewriter has a place in the multifarious array of modern conveniences and devices. Not so many years ago such a thing would have seemed remarkable indeed, but conditions have changed radically.

Now, to successfully manage a modern farm, accurate business methods are necessary. Records must be kept, computations made and correspondence conducted. The farmer used to get his mail only when he

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When You Buy this Quality Underwear

You wouldn't pay \$200 for a horse if you could buy one just as good for \$100. Then why pay \$1.00 per garment for underwear when "Hanes" costs only 50c per garment. It's just as good as—often superior to—underwear sold at twice the price?

Next time you're in town, take your wife along with you to size up "Hanes" Underwear—nobody like the women when it comes to judging quality in underwear.

50c per Garment

HANES

ELASTIC KNIT

UNDERWEAR

\$1.00 per Union Suit

Notice the elastic collarette—can't gape at the neck. The improved, firmly knit cuffs that hug the wrist snugly and cannot flare out. Notice the special piece of cloth running across the wale to keep the shoulders from stretching and dropping down.

If our mills were not located in cotton land—if we did not buy our raw material in large quantities direct from the grower—if we didn't specialize on one grade of underwear only, "Hanes" would cost you \$1.00 a garment instead of 50c. Buy two or three suits of this warm, durable, elastic knit underwear—let "Hanes" see you through this winter hale, hearty and strong. Don't forget the low price—50c per garment, \$1.00 per union suit.

If you can't find the "Hanes" dealer in your town, be sure and write us.

P. H. HANES KNITTING CO., Winston-Salem, N. C.

This label in every garment

Buy none without it

My Chatham Mill

Grain Grader and Cleaner

Loaned free for 30 days—no money down—freight prepaid—cash or credit. **FREE! LOAN!**

It grades, cleans and separates wheat, oats, corn, barley, flax, clover, timothy, etc. Takes cockle, wild oats, tame oats, smut, etc., from seed wheat; any mixture from flax. Sorts corn for drop planter. Rids clover of buckhorn. Takes out all dust, dirt, chaff and noxious weeds from timothy. Removes fowl weed seed and all the damaged, shrunk, cracked or feeble kernels from any grain. Handles up to 80 bushels per hour. Gas power or hand power. Easiest running mill on earth. Over 250,000 in use in U. S. and Canada. Postal brings low-price buy-on-time proposition and latest Catalog. I will loan 500 machines, "first come, first served." Write today if you want to be one of the lucky 500. Ask for Booklet 73 (33)

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1912 Big FREE BOOK is Ready

Write a postal—Phelps pays the postage to you.

Save \$25 To \$40 And Get a Better Buggy

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For Winter or Summer—Guaranteed for 2 Years

Rides extremely easy—runs lightly. Phelps experimented 3 years before perfecting this all season buggy. Built on our famous wrought iron gear. Weighs only a little more than ordinary buggy. Oil tempered tested four and four plate springs—soft and comfortable spring cushion and spring back. Beautifully painted—elegantly upholstered.

Closed Up Is Cold, Wind, Storm-Proof—Opened Up In a Second, Sunshine Let In From 4 Sides—No Jar, No Rattle

Get Phelps' 178-page beautifully illustrated Free Book—275 photographs showing over 125 different styles of Auto-Seat Buggies, Surreys, Runabouts, Carriages, Phaetons, Spring Wagons and full line of harness. Book shows you how to cut your buggy price almost in half. Write today to H. C. Phelps, Pres.

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There is good information in it for every car buyer. It will tell you how to look for both strong points and weak points in any car you buy. It tells just how Chalmers cars are built, and why they give more service and satisfaction than any other.

It will show the man of hard common-sense just why we can build a car at \$1950, that is not exceeded in strength, style, power, and durability by any other car at nearly double the price.

This is a broad statement, but true and provable. There is no mystery about it any more than there is mystery why one farmer gets 20 bushels per acre, and another gets 40. There is a reason for everything.

We want you to realize the value of these great features:

- Electric lights; Turkish cushions; nickel trimmings.
- Improved springs; self-starter; long stroke motor.
- Demountable rims; eleven-inch upholstery.
- 4-forward speed transmission; speedometer.
- Special silk mohair top; rain vision windshield.

A Chalmers is the car for you to buy for real service. You cannot afford to buy a cheaper car, and you cannot buy better service no matter what you pay.

Send for the book on the coupon today.

"Thirty-six", \$1950; "Six", \$2400
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Chalmers Motor Company.

Detroit, Michigan



This monogram on the radiator stands for all you can ask in a motor car

Please send "Story of the Chalmers Car" and catalog of 1913 cars

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went to town, and seldom, indeed, did he find occasion to gather up pen, ink and paper and write a letter. To-day the rural carrier brings him his daily mail; he reads each evening; he is next to what is going on in the world, and he gets business letters. In return, he writes letters to his representative in Congress and the legislature, to his farm papers, to the experiment station, to commission brokers, to seed firms and, if he is a specialist, advertisements to the papers and letters to his patrons.

Now we all know that we draw our conclusions from available evidence. In exact accord with this, we attach more significance, prestige or affluence to the writer when his letter comes typewritten than when it comes pen-written. When you receive two similar business letters from otherwise unknown persons, one typewritten and one pen-written, you experience a decided bias in favor of the one whose letter was typewritten. It is only a trait of human nature, but it is so. Hence the value of the typewriter to the up-to-date farmer.

Furthermore, typewritten copy presents fewer mistakes; and mistakes in business correspondence often entail serious difficulties.

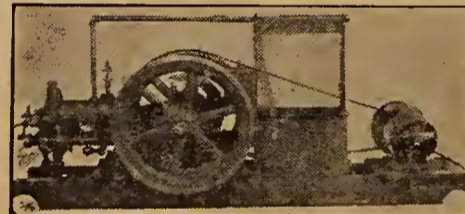
To the farmer having sons and daughters, there is another advantage in having a typewriter in the home. They will soon master the technic of the art, and the correspondence can be detailed to them to be typewritten. They will enjoy the work, and soon familiarize themselves with proper forms for business letters, etc., thus getting, right in the home, what would cost a considerable sum in the way of tuition, if obtained at a commercial school. Furthermore, it will add interest to the home and thereby be an incentive for the children to spend their evenings there instead of seeking diversion in a less wholesome environment.

The market supplies many kinds of typewriters, any one of the standard makes being very efficient. The up-to-date machines have the writing visible and present many other improvements over the older patterns. However, many of the older styles are still procurable and, though deficient in some minor respects, are yet sufficiently complete to serve in the essential capacity. For the farmer who conducts no great amount of correspondence, yet wishes it up-to-date, these machines offer a splendid proposition, the lack of newer adjustments being compensated for by a very reduced cost.

P. C. GROSE.

Portable Electricity

THE portable gasoline-motor-driven electric-lighting plant seen in the accompanying illustration has a capacity for seventy-five lamps of sixteen candle-power each. The dynamo equipped with a flywheel



is belt-driven from a seven-and-one-half-horsepower gasoline-engine which operates at a speed of three hundred revolutions per minute. The gasoline-motor is of the water-cooled type, the cooling-tank for the circulation water in the cylinder-jacket being mounted between the dynamo and the engine, as shown in the illustration. This equipment weighs about 2,600 pounds and occupies a floor space of forty inches wide by one hundred and fifty inches in length. A governor of the centrifugal ball type is utilized for controlling the speed under changes of load, regulating the voltage very closely.

FRANK C. PERKINS.

A part of the poultry on the farm is that covey of quail you have observed in the back fields somewhere, and a little attention to those small fowls is worth while.

How to Catch the Hog

ON NEARLY every farm about this time, or a little later, there can be seen two or more men and boys chasing after a hog which, when caught, after a frantic struggle, is thrown and a sharp knife thrust into his throat. Many a time have I helped at that job, and much as I like spareribs and sausage I can't help pitying the unfortunate animal and wishing that a form less brutal might convert a living hog into pork.

I am told that by a blow on the head with a hammer or the back of an ax the animal is put in such a condition it does not bleed well and so the pork does not keep. Will you invite farmers who have had experience in any but the old-fashioned way to tell how they do the distasteful job? And is there not some form of "hog-catcher," that any good blacksmith can make, that will catch the animal's leg and save the running which does neither hog nor man any good?

GEORGE S. THOMPSON.

EDITOR'S NOTE—Certainly. We would like to put in FARM and FIRESIDE just such ideas. So write us if you have had some good experience along this line.

The Food Tells Its Own Story

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The FARMERS' LOBBY.

Pouring Oil on Untroubled Waters

By Judson C. Welliver

OVER on Capitol Hill, in a noble old mansion such as they used to build a generation or two ago, just across a street from the Capitol grounds, I wandered into a great collection, the other day, of what on earth would you imagine? Right in a perfectly serious bureau chief's office, where one of the most dignified functions of the Government has its headquarters, I found the world's largest collection of—rat-traps! Yes, nothing but rat-traps!

There were rat-traps of wire, of wood, of glass, of copper, of tin; rat-traps that looked like self-binders, rat-traps that looked like telescopes, rat-traps that looked like diving-bells and one that looked like a catapult such as the ancients used to batter down the walls of the besieged city. The biggest rat-trap there could easily have been used to catch a baby elephant, and the smallest could almost have been carried around in a thimble. The biggest one, which was the catapult affair, wound up with a key and was operated by a huge spring. The theory on which it operated was that when a rat touched off the trigger he turned the thing loose, and a big swinging cast-iron arm landed on his head, killed him instantly and incidentally pitched him into the middle of next week. The experts in charge said that there was only one trouble with this trap, and that was that its efficacy depended upon securing the entire coöperation of the rat. A rat endowed with the intellect, say, of Herbert Spencer could probably have succeeded by diligent application in getting himself killed by the contraption. No rat that was less than an intellectual marvel, and that in addition was not positively bent on suicide, could possibly have been injured by the contrivance. They told me that this was the chief weakness of nearly all the traps in the collection; they were based on the presumption that the rat would have a thorough knowledge of engineering and mechanics, the patience of Job and an inordinate determination to get killed. On the other hand, a number of very simple and familiar contrivances have been found by actual test to be highly effective.

This collection of rat-traps has been made by the officers of the Public Health Service, and of course is an incident to their campaign for the destruction of rats in order to suppress the bubonic plague. Just as soon as all the traps have been sent in and thoroughly tested, the service is going to issue a bulletin on means of destroying rats; and entirely aside from its relation to the bubonic plague the document ought to be in great demand among farmers. In a preliminary sort of way, it is intimated that the verdict will probably be in favor of Tabby, provided she is not permitted to live in the house and become a thief. No better rat-trap is yet known than a slightly underfed tom-cat, that has been brought up to live the simple life and spend his time watching dark corners in the barn in the hope that a square meal may emerge from one of them, instead of curled up on the sofa or purring in front of the fireplace.

The Rat is a Carrier of Disease

THE compilation of information on rats, cats and traps may seem a curious diversion to be seriously occupying the time and attention of a bureau that is actually almost twice as old as this Government; but as a matter of fact it is a mighty useful business just at this time. In the three months of May, June and July of this year the bubonic plague numbered eighty-six thousand deaths in India alone, and it has invaded this country and occupied a territory half as big as the State of Ohio. It is primarily a disease of rodents, transported by them in ships to all quarters of the world, spreading with marvelous rapidity, extremely dangerous in almost all climates where rats can live, and most commonly carried from rats to men by a variety of flea which affects the rat.

In our country the rat and the common ground-squirrel are common carriers of the plague parasites. The rat is a great traveler and, perhaps because he is not an animal of very high-toned moral predilections, much given to the society of man. The squirrel, on the other hand, is more exclusive, and not much to be feared by reason of his immediate associations with man. The function of the squirrel is described as a

sort of rural reservoir from which the disease is communicated to the rural tribe of rats. The real business of fighting against plague, however, deals mainly with the destruction of rats. They may be poisoned, trapped or otherwise killed; destroyed by introducing into their habitations their natural enemies, such as cats, ferrets, dogs, etc.; starved to death by dint of making such disposal of refuse matter in cities as will prevent the rats living on it, or evicted, by the process of constructing only rat-proof buildings.

The sanitary authorities are optimistic enough to look forward hopefully to the time when we will have ratless cities. Needless to say, the ratless town will be a first cousin to Spotless Town; buildings will be constructed of stone, brick, cement, steel and other material inhospitable to rodents; sewers will be so built and maintained that they will not harbor the pests; garbage will be kept and destroyed so carefully and completely that it will not furnish provender on which the rat may subsist. When these things are accomplished, there will be mighty little danger of the plague establishing itself in a town. Concrete foundations, basements and floors are recommended for stables, warehouses, stores and markets where foods are kept. Barns, stables, chicken-yards, hog-pens and other places where domestic animals are kept need particular attention. All these and various other measures will seem at first glance to involve a very heavy expense, but actual experience has shown that, entirely aside from their value as a preventive of plague, these measures represent the very best element of economy, because rats are tremendously destructive of property. At least two States, California and Idaho, have passed laws declaring that the presence of rodents about places of human habitation is a menace to health and requiring that property-owners make reasonable efforts to eradicate them. Cities accomplish similar results through ordinances.

The Western Rats Are Bad Ones

IN SAN FRANCISCO it was found that the strict enforcement of regulations for the suppression of the rat not only prevented the spread of the plague, but also reduced the number of cases of all other infectious diseases, prevented flies from multiplying at the usual rate and caused a great reduction in the diseases of horses.

Rats and squirrels affected with the plague have been found in all the Pacific States, as far east as the Rio Grande in the South, and throughout Idaho, Montana and even as far east as Minnesota. The war against rats is being carried on with increasing diligence throughout the far Western States, inspired by a wholesome terror of the plague and an understanding of its awful possibilities such as people farther east have not gained.

Another disease concerning which we know very much less than we do about bubonic plague, but which seems to have a very similar origin and to be transported in much the same way, is the Rocky Mountain Spotted Fever. It is only twelve or thirteen years since this disease was definitely identified, and it has thus far hardly been found at all outside of Idaho and Montana. It is due, according to the medical authorities, to the bites of the wood-ticks; but how the tick is carried about so that he attaches himself to man is still a mooted question. Various domestic animals have been suspected, as have also some of the wild animals of those regions. Experiments, however, with the domestic animals and most of the larger wild mammals have led to the conclusion that they are probably not responsible. The present belief is that the ground-squirrel, ground-hog and chipmunk are the animals chiefly responsible for transporting the tick and getting it into association with man.

The fever itself, as it has appeared in men, has been in some seasons exceedingly fatal; some of the records have shown seventy-five per cent. of the cases resulting in death. A recent outbreak in Montana has concentrated efforts of the Bureau of Public Health in a new study of the whole subject. While the disease is greatly dreaded in regions where it has demonstrated its dan-

gers, it is generally regarded as unlikely ever to become such a menace to the entire country as the bubonic plague might very conceivably be, for the reason that in more closely settled communities the particular animals that seem to be responsible for its transmittal are not so numerous. Until a good deal more is known about the origin of the disease and about the animals that act as its hosts and vehicles, efforts for its treatment and eradication must necessarily be more or less experimental. Recently agents of the Public Health Service brought to Washington a consignment of the deadly tick, said to number something like fifty thousand, for observation and study. It was alleged that if they should get loose, biting folks, there was enough malignity in that one shipment to kill off the entire population of Washington.

We Swat the Fly and Get Rid of Fever

THE way these men of science go about the business of suppressing disease nowadays is one of the wonders of the age. Time was, and not so very long ago at that, when the plague, whether the bubonic plague, yellow fever, Asiatic cholera, or what not, was looked upon as a visitation of Divine wrath. There was nothing to do about it but to repent of our sins, make our peace with God and resign ourselves to the inevitable. Nowadays it's very different. Instead of worrying about Divine wrath, we swat the fly and get rid of typhoid fever. Instead of praying for deliverance from yellow fever, we get busy killing off the mosquito, and when we are rid of him there is no more yellow fever. Cuba, the Canal Zone, the Philippines, all used to be among the worst plague spots in the world; American sanitation has taught the people how to get rid of the mosquito and thereby to be rid of yellow fever. Instead of pouring oil on the troubled waters, we pour it on the untroubled waters, and that finishes Mr. Mosquito.

The work of the Public Health Bureau is one of the most interesting that the Government conducts. Curiously enough, this is the one department of the Government that has been in continual existence almost twice as long as the Government itself. It was established far back in colonial days, when yellow fever and other dreaded diseases were brought to the colonial ports by the sailors. The British crown provided as early as 1691 for the establishment of a series of marine hospitals to care for diseased sailors. At that time, of course, the modern scientific idea of disease was undreamed of. To keep it out, to exclude people afflicted with it, was the only thought. One of the very first bills introduced into Congress after the Federal Government was created provided for the establishment of a National Quarantine Service. It took almost exactly one hundred years to get that bill passed. Some of the States were unwilling to turn over to the Federal Government their authority in this direction; the good old States' rights idea outweighed other considerations. The Marine Hospital Service, however, was continued, and always took a prominent part, during the early decades of the last century, in fighting the epidemics of yellow fever, cholera, etc., that were so much dreaded. At that time only the most hazy ideas were entertained as to the cause of yellow fever. Shot-gun quarantines were established, and the people literally ran away from the disease wherever it appeared. The heroic agents of the service fought the ghost of ignorance, taking their lives in their hands, and often having as much to fear from the terrified people as from the diseases. In addition to caring for the sick, they were frequently compelled to bury the dead.

Not until the great European cholera epidemic of 1892 was a federal quarantine act passed. This measure provided that the State might in their discretion cede their quarantine power to the Federal Government; it laid down also the condition that if they did not make this settlement that they must maintain their State quarantines with as much rigor and effectiveness as the federal regulations imposed. Since the passage of this law, all the States except New York, Pennsylvania, Maryland, Massachusetts and New Hampshire have ceded their quarantine rights to the federal Government.

Speaking generally, the States now recognize the Government as *the one real authority* in all these matters, possessing the machinery, the scientific equipment and the skilled specialists to carry on the work.

Never Too Late to Be Happy

By Miriam Allen de Ford

Illustrations Drawn by W. C. Nims



AS THEY climbed on the train, they were all giggling. Aunt Sally had her bonnet on backward, and the others had to rearrange it, between spurts of laughter. Uncle George had forgotten his hickory cane after all, as everybody had prophesied he would; but he stoutly affirmed that he didn't need it, and that the durned old rheumatism was almost gone for the year anyway—leastways, till winter. Winter being only a few months off, one would hardly imagin that he had much respite, but they were all too excited and too happy to notice anything of such small importance.

Miss Enderby frowned as her charges tumbled into the seats, jostling each other, stepping on each other's toes, making silly jokes, acting generally like five-year-old children. She did not approve of jaunts for the asylum, to begin with; and she especially disapproved of anything as frivolous as the present expedition. But Mr. Southwick was a trustee and a member of the executive board, and he had insisted that every last one of them come, even down to old Aunt Sarah, who was bedridden and had to be carried on and off the train. "Give the old folks a good time for once, Miss Enderby," he had urged. "When we're that age, we'll be glad enough of a little change now and then, and my wife's set her heart on having them." To which Miss Enderby, who was superintendent of the asylum by virtue of her executive ability and not of her kindness, had returned only a sour smile; but she had got them ready, and here they were.

It was to be a matter of strict discipline, however. She had explained all that to them the night before, over the rice and baked apples. "You're going to go for a whole day, as I've told you, to Mr. Southwick's big house," she had said, "and Mrs. Southwick's going to entertain you and give you goodness knows what sort of dewdabs to eat, so that you'll all be sick on my hands for a week, most probably; but you've got to behave yourselves, every one of you. I ain't going to have the people in the train saying that the State charges are bad-mannered, and maybe blame it on me. The first one that acts bad's going to get put off at the nearest station and sent right back to the asylum. Now mind!"

They had minded. That was why, with all his hilarity, Uncle Warren lowered his voice at a glance from the superintendent, and Aunt Amanda, big and jovial, suddenly stayed her hand in the very act of sticking a caterpillar down Uncle Warren's neck. It might be the greatest event of their asylum lives, but they weren't going to spoil greater joys to come by too great effervescence now.

Perched up in the "window side" of a red plush seat, little Aunt Delia sat, primmest and most frightened of all. She had hardly dared to smile when she saw Aunt Sally's bonnet on hind part foremost, and she had almost choked on a peppermint lozenge trying not to laugh at Aunt Amanda's frustrated trick with the caterpillar. She had known the old Southwick estate well as a girl, and while the other inmates were chattering of the joys of a day of freedom, music and entertainment, and of change from the eternal rice and baked apples, her mind was busy with happy memories of a time when she had had a farm and a home of her own, and had kept house for three big bachelor brothers, herself the most cheerful and useful of gentle old maids.

Well, that was long ago now. Aunt Delia screamed suddenly and shrilly. Miss Enderby's back being turned, and Uncle Warren now out of reach, Aunt Amanda had gently dropped the squirming caterpillar down the dreamer's neck. She could feel it now, wriggling inside her black bombazine dress, and she screamed again.

Miss Enderby turned sharply. Uncle George was complaining already about his rheumatism, and Aunt Sarah was objecting to the sun, the motion of the cars, the noise, everything she could find to object to. It was hot, and she was tired and cross. "Who's making that noise?" she demanded.

It was needless to ask, for Aunt Delia was still screaming, and the caterpillar was still wriggling.

"It's you, is it, Aunt Delia?" she snapped. "Well, you heard what I said. We're nearly at Tremont Station now; if you don't stop that immediately, you can get off and go home."

"Oh!" chorused several sobered, timidly protesting voices. But poor Aunt Delia was beyond logic. Fumbling desperately for the squirming insect, she kept on screaming, shrilly and systematically. "Tremont Station!" called the conductor.

"Off you go," said Miss Enderby firmly, opening her pocketbook. "Here—here's your car-fare back, and Dinah will fix you some boiled rice for lunch. Come on now, Aunt Delia; I've got to keep to my word."

"It was my fault, Miss Enderby," quavered the repentant Aunt Amanda.

"No arguing," retorted the angry superintendent, pulling little Aunt Delia from her seat. Then, as she crept, frightened but still screaming, to the door, Uncle Warren suddenly arose.

"Hold on, Delia," he said; "I'm going too!"

I doubt if Aunt Delia heard Uncle Warren, so confused was her poor brain. But Miss Enderby did.

"Go on," she called after him, as he followed Aunt Delia, "and walk home. I won't give you any car-fare."

"I've got car-fare," responded Uncle Warren firmly, and in the midst of a dreadful silence he helped Aunt Delia from the car.

"Ain't it awful?" whispered Aunt Delia, as the two stood on the platform and watched the train vanish in the distance. The caterpillar, having caused the whole disturbance, had by this time climbed up her neck and been dexterously caught by the chivalrous Uncle Warren.

"Awful? Shucks! Here's where we begin to have a good time of our own, Delia."

Aunt Delia fairly blushed. There had been a time when young Warren Selfridge alone could have lured her from her maidenhood, and when they might have grown old together somewhere else than in the asylum. Something of the same thought must have flashed upon him.

"Look here, Delia," he said; "we ain't going back to the asylum—not right off, anyway. I got some money Enderby don't know nothing about—came in a letter from my nephew out West, yesterday. You and me's going to hire a team here in Tremont and make a day of it. Anywhere you want to go, and we can get back long before the rest do, and no one know any better."

"There's only one place I want to go, Warren," confided Aunt Delia, her faded cheeks red and her eyes shining with excitement. "I want to go to the Southwick estate and see the old place again."

"The Southwick estate! Why, that's where all the folks is going to be!"

"Well, can't we drive around back? They'll be in the house 'most of all morning. Mrs. Southwick's goin' to

Stevens farmhouse, had stood until its tearing-down ten years before. Further to the north were the chimneys of the Selfridge homestead, now occupied by strangers, where he had been born and bred. The woods themselves were full of memories. And sometimes, as he helped her over stones or untangled her skirts from the briars, a delicate flush came to her cheeks, and his gnarled, rough fingers trembled.

They were sitting on a moss-covered rock, leaning against a tree, a perilously rheumatic situation, when he spoke first of what had been in their hearts ever since he had followed her from the train.

"Delia," he said very gently; "how was it that things didn't go just right with us?"

"I don't know, Warren," she answered, a little shake in her piping voice, "but Jim and Phil and Hoyt didn't want me to get married and leave them; and they said if you'd—wanted me you'd have spoken more definitely—and so I just let you go, after those four years we went together."

"I was an awful fool, Delia. Honest truth, if it wasn't for the durned place we're living in now, I'd ask you even this late to take me. Would you, Delia? We could go out to my nephew out West. He's wanted me a long time."

"He wouldn't want me, Warren." There were tears in Aunt Delia's voice. But all at once she stopped dead short, and the man held his breath also. For directly behind their tree sounded voices, voices that they both knew well.

"It's a confounded outrage!" said Mr. Southwick's. "You're sure it was just as you say, Mrs. Lukens?"

"Absolutely!" answered Aunt Amanda's. "That's all she was doing, not a mite more. And now for those two poor old things to be traveling back to the asylum alone—I think it's a shame. I couldn't keep from telling you."

Uncle Warren grinned; Aunt Delia bridled. Amanda Lukens was only two years younger than she was. Poor old things indeed!

"And just when I've got the good news for Miss Stevens, too," said Mr. Southwick. "It was the queerest thing that it should come to me to-day. The first thing, when you people got here, I asked for her, and I couldn't understand Miss Enderby's answer. I have no right to say anything, but I know I can trust you, Mrs. Lukens; Miss Enderby isn't going to be with us after this year."

"Good riddance!" said Aunt Amanda succinctly. "But is it really true about Delia getting a house and an income?"

"Yes, indeed. It came to me as the asylum's lawyer. It's her sister-in-law, over in Tremont. She'd completely lost sight of Miss Stevens, but when she died she left her the cottage she lived in, and the grounds around it, and six hundred a year, all complete, if the lawyers could find her. That was six months ago, but they've tracked her at last. Look here, Mrs. Lukens! Whose team is that hitched over on my fence?"

And then, in his excitement, Uncle Warren sneezed!

When the hubbub of questioning and explanation was all over, and Mr. Southwick was driving the heiress and her friend over to inspect her legacy, Warren suddenly turned to Delia.

"That ends what I was saying, down in the woods," he said huskily. "I wouldn't have the cheek to ask you now."

"Then I'll ask you!" cried Delia in one burst of temerity, and, right in front of Mr. Southwick, she put up her face to be kissed!

An Invalid's Grab-Bag

By Pearle White McCowan

THE invalid, especially the one who is isolated from friends, has a more or less lonely time. This is especially true when, on account of climatic conditions or to secure better medical attendance, they are obliged to leave home and live among strangers.

One such invalid's heart was gladdened for many a day by the arrival of a grab-bag made up by friends and relatives at home. A large fancy cretonne bag (made with an eye to later service as a laundry-bag) had been filled to overflowing, then packed into a stout box and sent by express to the lonely sufferer. A little note accompanied it, stating that each package therein contained some little remembrance from a friend to help her pass the day more cheerily, and that only one package was to be opened each day. Sometimes it was a new photo or a few snapshots of various friends, sometimes a book, a box of candy, a little dish or bit of fancy-work; once a few small cakes of maple sugar, and from another farmer friend a little box of winter-green berries. Always something small and inexpensive, but suggestive of their love and good will.

One such invalid, now recovered, testifies to the fact that sometimes, even in the night-time, when restless and wakeful, she would slip her arm out of bed and get hold of that grab-bag and reach down into its depths and draw forth a package, just to hold it in her hand and give herself up to the pleasing pastime of surmising what it contained, and thus pass away the hours until the welcome daylight came.

The pleased expectancy, the delightful wondering what would be to-morrow's gift, did much toward hastening her recovery and added new life.



"Uncle Warren grinned; Aunt Delia bridled. Poor old things indeed!"

have a phonograph concert for them. And you and I can go over all the old landmarks. Don't you remember, Warren?" But here Aunt Delia stopped short, overcome by embarrassment.

There was an understanding glint in Uncle Warren's eye. "I remember all right," he said. "Come on; I'm going to find a livery-stable."

The drive over was like the morning, fresh and dewy and sweet-smelling, with all the pathetic charm of late summer. The horse was perfectly safe, but Uncle Warren had been a great man for horseflesh in his day, and he drove at brisk speed, slowing up every now and then to show where he and his brother chopped down a tree in twelve minutes, or to allow Aunt Delia some reminiscence of this or that abandoned country school or deserted farmhouse. It was noon when they passed through Martinville, the next station to Southwick's, and there they hitched the team by the hotel door while they went in and had dinner with Uncle Warren's nephew's precious gift.

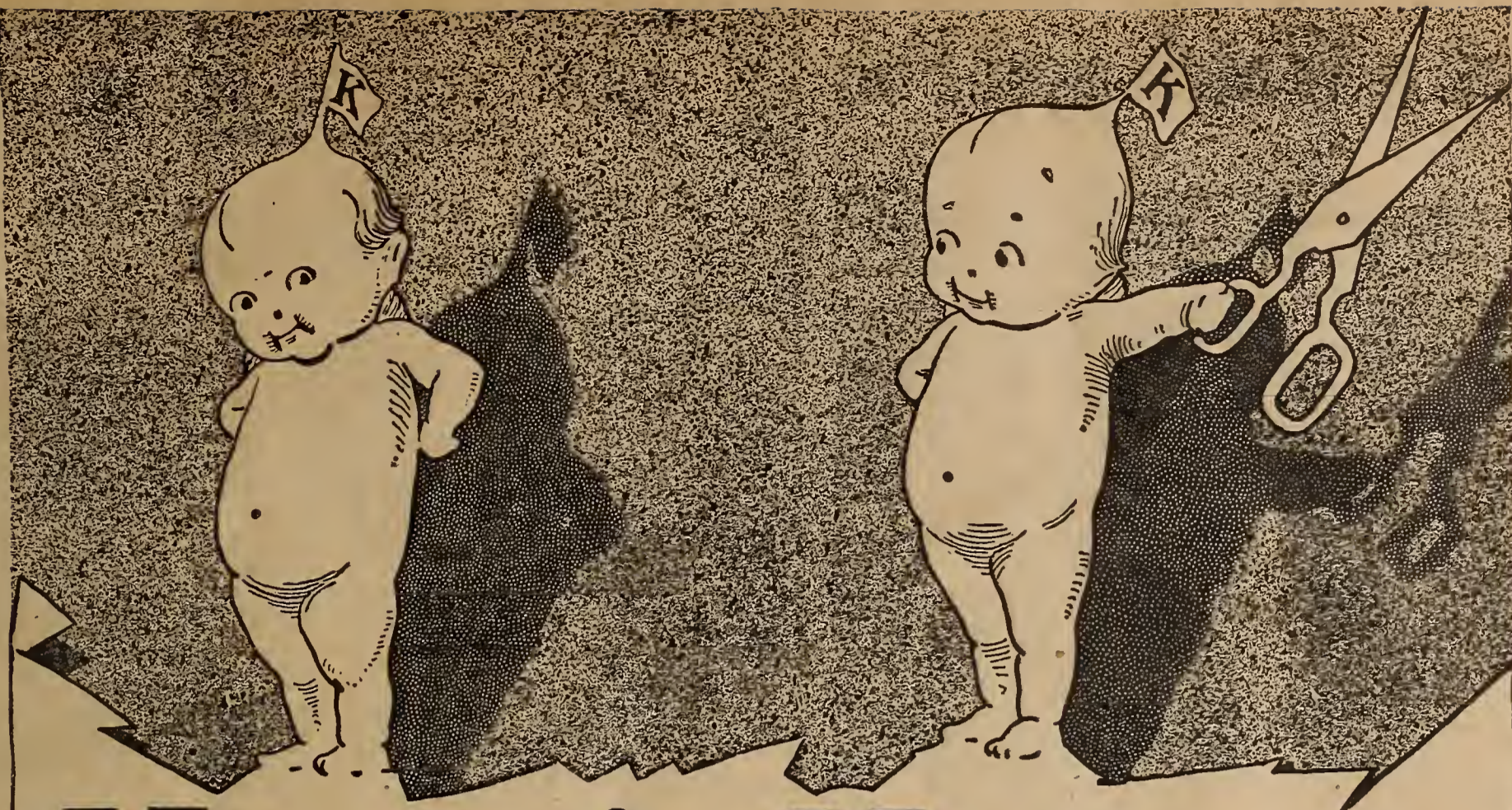
"Just like folks," exclaimed Aunt Delia appreciatively, as they devoured indigestible foods absolutely prohibited at the asylum, and all the more delicious for that reason.

The old woods back of the Southwick estate were the first familiar sight to greet them as they drove up.

"Ain't changed a bit!" exclaimed Uncle Warren; and Aunt Delia's heart was beating a pæan of tumultuous joy.

From the house they could hear the clatter of dishes, but it woke no rancor in their hearts. It was a pleasure to be free from other people for a while—to feel, now that they were alone, that old attachment which was stifled by the jarring of so many personalities at the asylum. It was more than a pleasure to be rid for one afternoon of the danger of scolding or complaint from the petulant Miss Enderby.

For an hour Aunt Delia and Uncle Warren explored thoroughly. Over there was where her old home, the



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DESCRIPTION: This watch has a handsome nickel case, with open face. It is a stem-wind and a stem-set, just like other high-priced watches. It has a close-fitted snap back. It is only 3/8 inch in thickness. It is a perfect timekeeper, tested and regulated before leaving the factory. It is engraved front and back, and is a watch of which anyone would be proud.

The Fob is of handsome black leather with a polished buckle, like illustration, with a rich gilt charm engraved with your own initial.



MOVEMENT: Regular 16 size. Lantern pinion (smallest made). American lever escapement, polished spring. Weight, complete, with case, 3 ounces. Quick train, 240 beats to the minute. Short wind, runs 30 to 36 hours with one winding.

Every watch is fully guaranteed by the manufacturers and by FARM AND FIRESIDE.

The manufacturers will make all repairs for a year free, as explained on the guarantee.

How to Get the Watch

You can get this dandy watch and fob very easily. Write a postal-card to the Watch Man. Tell him you want to get this watch and fob without spending one penny. He will be glad to help you get your watch. This is a chance you must not overlook.

Thousands of delighted boys have secured their watches this way with the help of the Watch Man. You can do it, too. Any boy that really wants one can easily get this fine watch. But how will the Watch Man know about you if you don't tell him?

Write a Postal To-Day to THE WATCH MAN

FARM AND FIRESIDE, Springfield, Ohio

Who Wants a Talking Doll?



WE want every little girl in FARM AND FIRESIDE'S extensive family to have one of these beautiful talking dolls. Just think, this doll says "Papa" and "Mama," and cries just like a real baby. She opens and closes her eyes and goes to sleep, and with her pretty face and beautiful hair is just the doll that every girl will want. Her limbs are jointed, and her dress and hat are tastefully and prettily trimmed.

This doll is manufactured abroad, in the country where all of the best dolls are made, and we have gone to considerable trouble and expense in order to secure this doll for our little ones. But we count this as nothing against the pleasure that we know this doll will give to the children, and we want every little girl in our large family to have one.

This Wonderful Doll

Write us to-day, saying that you want to obtain FARM AND FIRESIDE'S Beautiful Talking and Sleeping Doll. We will then give you full particulars how the Doll can be obtained without one cent of expense to you.

WRITE AT ONCE TO
FARM AND FIRESIDE

SPRINGFIELD, OHIO

Please tell me how I can get the Talking and Sleeping Doll, without cost.
Name.....
Address.....

OUR YOUNG FOLKS

Conducted by Cousin Sally

A Night in the Clock-Shop

By Flora Charlotte Finley

THE shop was closed. The boy had swept the floor and put things in order for the next day; then he had lighted one gas-jet at the back of the store, turned it low, put on the outside shutters, locked the doors and gone whistling down the street toward his home. Everything was still but for the gentle, steady ticking of the many clocks on the wall and desks in the great jewelry-store.

It was just midnight. As the hands of all the clocks pointed to twelve, there was a slight stir as of expectation, and first one and then another struck the hour, some fast, some slow, some loudly, some softly. The deep, resonant bell of the big hall clock chimed pleasantly with the silvery sweet tone of a little Dresden clock, while a plain kitchen clock and a round-faced nickel clock struck at the same time hurriedly and loudly.

After all the rest, a cuckoo stepped jauntily from his little door and told the world what time it was, made his jerky little bow and disappeared.

As the last sounds faded away, a cracked and trembling voice from the corner where a grandfather clock stood quavered fretfully. "Who is that keeps saying 'Seaton, Seaton, Seaton' all the time? I'm sick of hearing it."

A metallic voice promptly replied, "Guilty! Although I'm nickel, not gilt; ha! ha!" A round clock on the showcase glittered in a ray of moonlight which fell through a crack in the shutter. "I'm a traveling clock, sir, and it's my business to advertise the firm of Seaton. Seaton, Seaton, Seaton."

"I'll be glad when you travel on about your business, sir," retorted the grandfather clock, who seemed in a bad temper.

A gay little French clock which stood near the nickel one looked at him sideways and jingled a trifle to attract his attention. She was there for repairs which were delayed because she had tried to put an extra curl in her hairspring one day and had broken down in consequence. It was whispered around that she was awfully fast anyway, and the respectable kitchen clocks kept close together, and pretended not to hear her when she tried to strike an acquaintance with them.

The cuckoo always bowed to her, but she pretended not to notice him. All the same, she ticked faster than usual and hoped those proud kitchen clocks saw him do it.

"You'd better watch out, young man, snapped the nickel clock, who considered the cuckoo a rival. "Hands off," retorted the cuckoo, which was mean, for the nickel clock had both hands broken off, and that was the reason he was in the shop instead of traveling. The French clock snickered in spite of herself, then put one hand over her key-hole and yawned softly to herself. She was bored to death in this place, and she'd have been glad to go home and stand once more under a lovely glass globe on a mantel, where she could always see her reflection in the mirror.

Some nights, between twelve and one, when clocks and toys are permitted to talk, they told stories, but to-night they were very subdued. The favorite of all, the beautiful cathedral clock, had that day been taken away. To be sure, she had gone to be a wedding present, and that was worth while, but they all missed her sweet voice, and thought of the time, perhaps not far away, when they too would go, one by one.

After a few moments a voice from a dark corner on a high shelf said, "Well, friends, time flies. If we are to have any stories to-night, we must hurry, for morning



Cuckoo clock

comes early these summer days, and after dawn the spell is upon us, and we must be silent and attend to business. How surprised all the mortals would be if they knew how we watched and listened and understood them. They think we are only bits of steel and glass and wood, and they wind us up and wipe the dust off our faces and never know we understand all they say. Has anyone had any unusual experience to-day? I have been put so high and in so dark a corner that I can't see very well, and there is an echo which so confuses sounds I can hardly hear myself strike."

"This is, I suppose, the last night I shall be with you here," said the grandfather clock. "To-morrow I am to go to a great house to stand on the stairway. I know there will be drafts."

"Well, we shall miss you, sir," said the polite French clock. "Indeed, we shall," said all the others.

"Thank you, friends," replied the grandfather clock. "May you all find pleasant homes and measure only happy hours."

"I've not been introduced," said a new voice, "but I'm here for repairs and would like to get acquainted while I am with you."

"You are very welcome," said the courtly grandfather clock. "Maybe you will tell us a story to-night."

"I've nothing very exciting to tell," said the newcomer. "I've lived in a busy family where there are lots of children. Bless their bright faces! I shall miss them."

"I don't like children," snapped the nickel clock. "They are always setting your alarm at all hours just to hear it go off. An alarm is for business, and children shouldn't be allowed to meddle."

"Oh, well," said the newcomer indulgently, "children have to try things. It's the way they learn. Why, the children where I live play all kinds of tricks with me. I suppose maybe that's why once in a while I have to come here to be repaired, but I don't mind it, and they are always so glad to see me when I get home, it's really touching."

"Too much touching, that's just what I said," continued the nickel grumbler.

"I've measured all kinds of times for them," went on the newcomer. "Sad ones and glad ones, merry ones, commonplace ones. Anxious hours sometimes, as when the baby, the darling of all our hearts, lay so ill, and the doctor sat all night with his finger on the tiny wrist, counting, counting the faint beats, and I ticked as softly as I could, not to disturb the little one. In the morning, just before I was ready to strike six, the doctor laid down the little hand and said, 'she will live,' and I struck right out as loud as I could I was so happy, and the little angel opened her blue eyes and said, 'Ole clock!' the first words she had spoken for days. That was an hour worth remembering."

"Another hour I well remember was when the children had their party. All day they watched my face, and every time I struck they would clap their hands and say, 'Another hour gone. Soon now it will be time for the party.' I was almost as anxious as they were, and I think I gained a little that day. At last the hour came. I struck it as clearly and loudly as I could. I had hardly finished striking when the children began to come. They danced and played games and told stories, and after a while somebody looked at me and said, 'Why, it's time for supper,' and then the little ones all clapped their hands and laughed more than ever. Pretty soon they all went into the next room, and I could only [CONCLUDED ON PAGE 31]



Student's clock



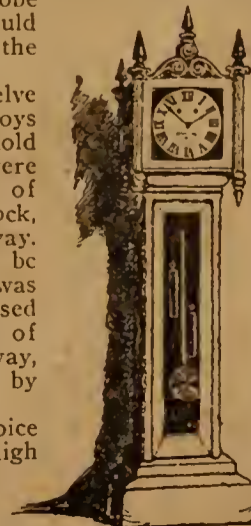
Plain kitchen clock



French clock



Dresden clock



Big hall clock

The Plumbing of Country Homes

By William Draper Brinckle, Architect

TOO many country homes have either no sanitary system whatever or one that is worse than nothing; for bad plumbing is one of the most dangerous things conceivable. In the cities, all these matters are strictly regulated by law, and looked after by plumbing inspectors and health officers; but it's different in the

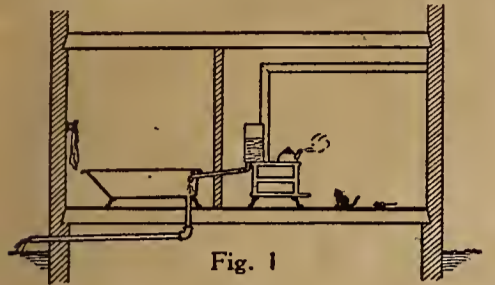


Fig. 1

country. So, if you will attend a moment, here's just a little talk on plumbing, and so forth.

Suppose you want a bathroom; but suppose, also, you only have the most limited amount of cash to put in it. Then build a little room directly adjoining the kitchen, and set up your bathtub in it (Fig. 1). Get a cook-stove that has a large, open tank at the back, to hold hot water; run a pipe from the bottom of this tank through the partition, and connect it to the faucet of the tub. Another pipe should be connected to the waste, under the tub, and run out through the wall, to some gutter or drain. All this is extremely simple; indeed, if you have the proper tools, you can do it.

Secure a Reliable Plumber

Now this is satisfactory enough, as far as it goes; but no bathroom is really complete without a water-closet. In that case, you will need water under pressure, and a proper sewage system; and you will also need the best and most reliable plumber you can get. Don't attempt to put in this sort of work with your own hands. A defective joint, that looks fair enough to you, may nevertheless leak sewer-gas and cause a mysterious outbreak of illness in your family; or a water-pipe improperly protected against frost may burst and do one hundred or two hundred dollars' worth of damage to the furniture and fittings of your house. Smaller leaks will be constantly occurring in an "amateur" job; and they are often frightfully troublesome to fix. Above all, don't get

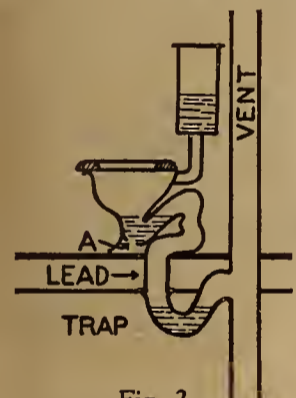


Fig. 2

some local jack-of-all-trades, who can "turn his hand to anything," to put in your plumbing, even if he offers to do it for half-price! There is no other branch of house-building (save perhaps the heating and the electric wiring) where an unskilled workman can put your property and your life in such jeopardy. If you can't afford to pay a good man to do a good job, give up the whole thing; it's far too serious a matter to trust in incompetent hands!

The best type of water-closet is the "syphon jet" (Fig. 2). The "syphon action" is very similar and nearly as good; the "washout" (Fig. 3) is a little older style, but still quite satisfactory. All these should have low tanks; the old-fashioned high tank, set up at the end of a five-foot pipe, is much more apt to get out of order, and also, of course, much more difficult to get at.

In setting these closets, a short brass pipe with screw threads cut in it is fastened to the bottom with melted lead; a corresponding brass pipe is fastened to a short bit of lead pipe, also with melted lead, and then the lead pipe is joined to the iron soil-pipe. Then the closet is screwed down in place, by means of the two brass pipes. To use putty, white lead or cement to join a closet to a soil-pipe, is absolutely forbidden by the plumbing laws of all large cities, and rightly so. From the closet, a line of cast-iron pipe,

not less than four inches inside diameter, runs down to the cellar and thence outside the house; this pipe must be what is known as "extra-heavy" and all joints are filled with melted lead; not cement! Just under the closet a special S-shaped bit of pipe, called a "trap," is set; some water always lies in this, keeping sewer-gas from coming up. A vent-pipe is cut into the upper bend of the trap, and from there continues on up through the roof of the house; this not only permits the sewer-gas to escape harmlessly, but, by letting in air, keeps the trap from "syphoning" or emptying itself whenever a strong rush of water passes through.

But just a word of caution here: It is an extremely bad plan to buy your own plumbing fixtures directly. If anything doesn't work properly afterward, you have no redress; your plumber will insist that it's all the fault of the fixtures, while the concern you bought them from will blame it all on the plumber who put them in! The only safe way is to let your



Fig. 4

plumber furnish all the fixtures himself; you can select, beforehand, the ones you want from his illustrated catalogues. If you prefer, you can go to the showrooms of some large plumbing-fixture concern in the nearest big city and pick out exactly what you want; but always let your plumber attend to the actual buying and shipping of the things you have chosen. "But I can buy things for half the price out of a catalogue!" you say.

Yes, no doubt; but just listen a second; all makers of plumbing fixtures have an extremely cheap line (which doesn't appear in their own catalogues) called "competition goods." These are meant for the cheap rows of houses that are built to "sell," and therefore it's only needful that the fixtures last long enough to get the house sold and the money paid over. These fixtures seldom bear the maker's name; they are sold by middlemen, who "guarantee them to be just as represented; if on arrival you find them otherwise, return them at our expense, and we will refund money." Exactly; but this competition stuff is always very beautifully finished up, on the outside, and until it is put to the test of actual use the average man can't possibly see any difference between this worthless junk and really high-grade goods. Therefore, many guarantees don't amount to much. It's precisely as if a man were to "guarantee" garden-seed, provided you made the claim within forty-eight hours after receiving the seed!

The Label Assures Good Material

But all reliable fixtures have a printed slip pasted on them, bearing not only the maker's name, but also his guarantee: "Material and workmanship guaranteed for two years," or for five years, according to the price. If the label isn't there, then the fixtures are worthless.

The outside of the bathtub will be primed with a dark coat of paint; see that your plumber gives it a finishing-coat of white enamel paint the last thing. The inside of the tub is porcelain enameled.

A few years ago stationary wash-stands had marble slabs and backs; but now the whole thing—basin, top and back—is all in one piece of enameled work.

The wash-basin and the bathtub should have lead pipes run from their waste connections over to the water-closet soil-pipe; and, of course, a trap is set directly under each. These traps must either be the "Benmor" type, or they must have a vent-

pipe to keep them from syphoning out. After all the pipe (water and waste) has been put in, but before any fixtures are set, the plumber must test it; he closes all openings, connects his air-pump, and works away until his gage shows quite a

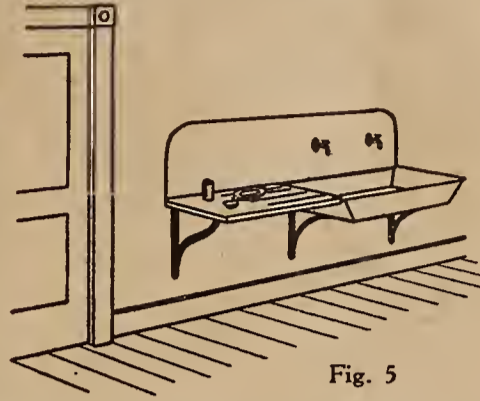


Fig. 5

little pressure. Then he waits for a few minutes; if the gage drops back, even an ounce or so, that shows his work isn't properly done; and he must hunt out and stop the leak.

Now, very possibly, you will also want an outside water-closet, on the kitchen porch; this should be of the "frost-proof hopper" type (Fig. 4). The seat is counterweighted and always stands up; when pressed down by the weight of a person, it opens a valve and lets the tank fill with water; then, when the pressure is removed, the water rushes out and flushes the closet. Thus, there is never any water standing in the tank, and consequently no danger of freezing. A hopper closet, however, is not considered sanitary for indoor use; in most cities they are forbidden, save in yard closets and such outdoor cases.

Essentials for a Modern Home

A kitchen sink (Fig. 5) is an extremely great comfort; it should be enameled, with an enameled back. The drain board, however, had best be of wood; it's not so hard as enamel, and therefore less likely to crack dishes that are dropped on it. Fig. 6 is a pair of stationary wash-tubs or "laundry trays," as the plumber will call them. These may be had in slate, soapstone, enameled iron, brown earthenware or concrete; there is really very little to choose, save that the earthenware or the enameled iron are a trifle easier to keep clean. Wooden lids cover the tubs and make a most convenient ironing-bench; be sure to insist on this feature.

But these fixtures require water under pressure; therefore, one must have a water-system. Probably the best is the air-pressure tank; this sets in the cellar, or any other convenient frost-proof place. By means of a specially constructed pump,

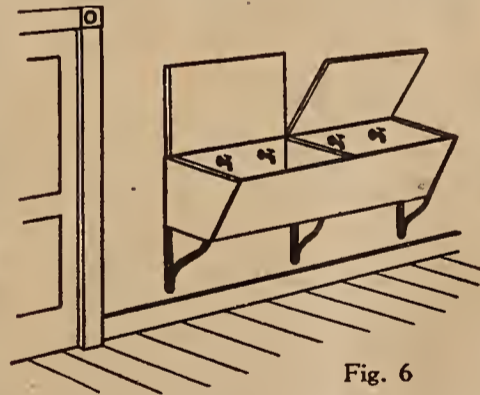


Fig. 6

air is stored in the tank, together with the water, at a fairly high pressure; this compressed air forces the water through the pipes to the different fixtures. Hand-power can be used to work the pump, if desired, though a windmill or a gasoline-engine will naturally be more convenient.

Another water-system uses the ordinary open wooden tank; this system gets its pressure, of course, by the force of gravity, and therefore the tank has to be set well above the highest fixture. This tank can be filled by windmill, gasoline-engine, hydraulic ram or hand-power.

Often the tank is put up on an open tower; but then the pipes run great risk of freezing, no matter how warmly they may be packed. The best place is probably the attic of the dwelling-house; but a large tin-lined box should be set underneath, to catch the water in case the tank springs a leak.

For hot water, a large galvanized iron boiler stands in the kitchen, connected by a pipe-coil to the cook-stove; then, hot-water pipes run to bathtub, wash-basin, sink, wash-trays, and so on.

There should be two or three spigots ("wash-paves" as they are called) at various points on the outside of the house, to connect on a garden-hose; and it's a good idea to run one [CONCLUDED ON PAGE 27]

HARD TO SEE Even When the Facts About Coffee are Plain

It is curious how people will refuse to believe what one can clearly see.

Tell the average man or woman that the slow but cumulative poisonous effect of caffeine—the alkaloid in tea and coffee—tends to weaken the heart, upset the nervous system and cause indigestion, and they may laugh at you if they don't know the facts.

Prove it by science or by practical demonstration in the recovery of coffee drinkers from the above conditions, and a large per cent of the human family will shrug their shoulders, take some drugs and—keep on drinking coffee or tea.

"Coffee never agreed with me nor with several members of our household," writes a lady. "It enervates, depresses and creates a feeling of languor and heaviness. It was only by leaving off coffee and using Postum that we discovered the cause and way out of these ills."

"The only reason, I am sure, why Postum is not used altogether to the exclusion of ordinary coffee is, many persons do not know and do not seem willing to learn the facts and how to prepare this nutritious beverage. There's only one way—according to directions—boil it fully 15 minutes. Then it is delicious." Name given by Postum Co., Battle Creek, Mich. Read the little book, "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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Miss Z. N. Baker, Spokane, Wash., is in charge of the Nursing Department of a Salvation Army Maternity Home.
Miss B. M. Emberg, Lowell, Mass., writes, "I receive \$15 and \$18 a week, and have had more work than I can do."
Mrs. W. N. Barbour, North Attleboro, Mass., writes, "With the knowledge obtained from the lectures, I have been able to take difficult cases and hold a responsible position in an institution."
Our method of home training has enabled thousands of women, with and without experience, to earn \$10 to \$25 a week as nurses. Send for a copy of "How I Became a Nurse" and our Year Book explaining method—320 pages with intensely interesting experiences by our graduates.
Forty-eight specimen lesson pages sent free to all inquirers.
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Market conditions for farm-made pork products were never better than right now. Don't lose several dollars per hog by selling them alive. Cut them up yourself. Use an Enterprise Meat AND Food Chopper—and a combination Enterprise Sausage Stuffer and Lard Press and realize the most money out of your hogs.

The ENTERPRISE Meat AND Food Chopper



enables you to make the sweetest, juiciest and most nourishing sausage meat you ever produced.

The big use for a chopper is to cut meat, less frequently to cut other food. But both are important. Therefore, be sure you get a Meat AND Food Chopper. It's useful not only at hog-killing time—but always useful in the kitchen. The exquisite dishes you can prepare from left-overs and bits of food that otherwise would be wasted are a source of delight to the family that lives well. It also contributes so much to economy in furnishing the table that it is really indispensable. It repays its cost almost every week in the farm home.

There are lots of choppers that cut meat by crushing and mangling it, but only one that really cuts—the ENTERPRISE Meat AND Food Chopper. Has four-bladed knife—four cuts at every turn of the handle.

"ENTERPRISE" Meat AND Food Choppers are made in 45 sizes and styles for hand, steam and electric power. We also make cheaper food choppers, but recommend the above.

No. 5. Family size : : : \$1.75
No. 12. Farmers' size : : : 2.25
No. 22. Farmers' size : : : 4.00

"The Enterprising Housekeeper," 200-Recipe Cook Book, sent for postage, 4c. Enterprise specialties are for sale at hardware and general stores everywhere.

THE ENTERPRISE MFG. CO. OF PENNA.
Dept. 71, Philadelphia, Penna.

The ENTERPRISE Sausage Stuffer and Lard Press



makes failure entirely a thing of the past in sausage-making. It prevents air bubbles—and air bubbles are the main cause of sausage spoilage. To have good sausage always—keep out the air. It can be done surely and easily only by using an Enterprise Sausage Stuffer with the patented corrugated spout. Other machines offer corrugated spouts—but such corrugations are more for looks than for any practical purpose, for the corrugated spout of the ENTERPRISE is patented and cannot be used or imitated by any other machine. It can be had only with the Enterprise Sausage Stuffer and Lard and Fruit Press—three machines in one. The change to either use is instantly made. They can be had in 9 sizes and styles—up to eight-quart capacity. All are accurately machined. Plate fits closely without binding. Meat does not squeeze out. These presses are an absolute necessity at butchering time. Illustrated catalogue on request.

No. 25, 4-Quart, Japanned Price, \$5.50
Tinned and Japanned

Tatted Collar and Crocheted Bag

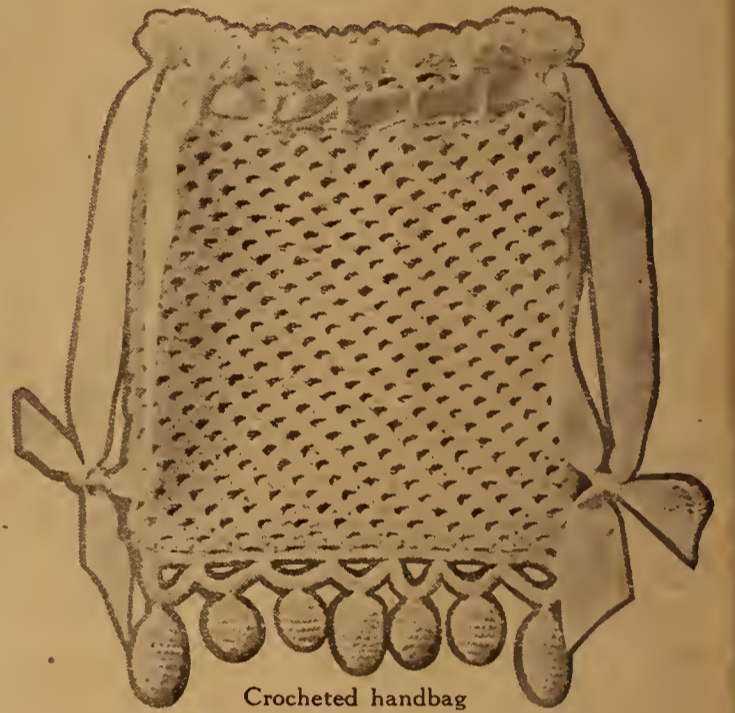
By Gwen Keys



Dutch collar

IN THE issue of FARM AND FIRESIDE for July 20, 1912, we published a Dutch collar in Irish crochet. The collar shown on this page is made of tating, braid and Battenberg rings. The work is very easily done, although at first sight it looks rather difficult. The design is very pretty and one that is sure to please. Complete directions for making this collar will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address your requests for the directions for making this collar to Gwen Keys, FARM AND FIRESIDE, Springfield, Ohio.

IN THE issue of FARM AND FIRESIDE for April 27, 1912, we published a handbag made of Irish crochet. Here is another handbag, made of plain crochet, and one that is sure to be appreciated by those who crochet. The directions for making this bag are very explicit and easy to follow. These crocheted bags have been very popular, and there is as yet no decrease in the demand for them. Complete directions for crocheting this handbag will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope. In writing be sure to state whether you want the bag or the collar directions. Address your requests for these directions to Gwen Keys, care of FARM AND FIRESIDE, Springfield, Ohio.



Crocheted handbag

Some Important Books and Bulletins

THE Senate from 1907 to 1912, by Lynn Haines. This little book is the story of the sort of work those senators have done whose terms expire next March. It is an inside history of the last six sessions of the United States Senate, and should be read by all those who desire light on the manner in which the senators have discharged themselves of their duties. Mr. Haines is the man whose lucid and fearless histories of the Minnesota legislature led to the reforms which that State has recently adopted. In the field of the National Congress, Mr. Haines has risen to the occasion. In a private letter, Senator La Follette, who is as well qualified to speak as any man in the world, says of Mr. Haines's book, "It deals strikingly with the big facts of the last few years, and reveals Senate records and conditions as they have never been shown before." By mail, 55 cents. Published by Lynn Haines, Bethesda, Maryland. Paper cover.

Association for Highway Improvement, and may be obtained by anyone as long as the edition lasts for \$1.00 by remitting that sum to the offices of that association in the Colorado Building, Washington, D. C. Four hundred pages. Cloth.

County School Fairs of Virginia. A publication of the Department of Public Instruction of Virginia. To be obtained of J. D. Eggleston, Superintendent, Richmond. Recommended to sufferers from either hookworms or bookworms in any latitude or longitude.

The Indiana Weed Book, by W. S. Blatchley. The Nature Publishing Co., Indianapolis. Pages, 181, with glossary. Postpaid, \$1.00. Paper covers. An excellent treatise, with many illustrations of the weeds of Indiana, but useful to students and farmers almost anywhere. A botanist's book. Adapted to the uses of schools.

Good Bulletins on spraying and the control of insect pests are the following: Bulletin 9 of 1911, of the Texas Experiment Station, College Station, Texas; "Insect Pests and Diseases of the Apple," Maine Experiment Station, Orono, Maine; "The Spraying of Trees," Massachusetts Station Report for 1910.

Paper-bag cooking is fast obtaining a literature of its own. The latest addition to this interesting field of housewifery is the "Standard Paper Bag Cookery" a book by Emma Paddock Telford, Household Editor of *The Delinicator*, *New Ideas* and *The Designer*. The book is very complete in its table of contents and will meet a want of the American housewife who is a bit confused by the European recipes that were given her at first when she desired to try this most economical method of cooking. The book is attractively and appropriately bound in white oil-cloth. Cupples & Leon, 443-449 Fourth Avenue, New York, are the publishers. The book sells for 50 cents, postage extra.

The Home Nurse's Handbook of Practical Nursing, by Charlotte A. Aikens, is a book that might well be placed in every home in the country. Its suggestions as to nursing, care of the room in which the patient is ill, food, clothing and its tables of infectious diseases make it a very valuable acquisition to any library. The illustrations are exceedingly valuable, as much so as the reading matter. W. B. Saunders Company, of Philadelphia and London, are the publishers.

The Potato, by E. H. Grubb and W. S. Guilford. This is an exhaustive treatise on potatoes and potato culture which should be read by all students of this crop. It has 545 pages and many illustrations. Doubleday, Page & Co. Price, \$2.00 net.

Good Roads Year-Book for 1912. This is a mine of information as to the laws and roads of different States, and is sure to be considered a valuable acquisition to the book-shelves of all people who are really studying the question of good roads. It is free to all members of the American

Write for Free Trial Bottle



Write today for a free trial bottle of LIQUID VENEER, and learn how easy it will make your housework, and how beautifully bright and new it will make and keep everything—with no more trouble on your part than dusting with it. When you

Dust With

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the whole house takes on a new tone of cheer. Chairs look brighter—floors and woodwork look like new—tables, dressers, and the piano retain a mirror finish that is good to behold—brass fixtures and metalwork have a beauty all their own. Moisten a cheese cloth duster and dust with it—that's all. Write for the free trial bottle now.

BUFFALO SPECIALTY COMPANY,
250-J Liquid Veneer Building, Buffalo, N. Y.

HOME OIL, our new product, beats them all for lubricating, cleaning and polishing metal and preventing rust.

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Guaranteed 5 Years

To advertise our business, make new friends and introduce our great catalogue of Elgin Watches we will send this elegant watch to any address by mail post paid for ONLY 98 CENTS. Regular gentlemen's size, open face, full nickel silver plated plain polished case, Arabic dial, lever escapement, stem wind and stem set, a perfect timekeeper and fully guaranteed for 5 years. Send this adv. to us with your name & address & 98c, and watch will be sent by return mail postpaid. Satisfaction guaranteed or money refunded. Send 98c today. Address R. E. CHALMERS & CO., 538 So. Dearborn St., CHICAGO.

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Write for Free Stove Book 400 Styles

At Reduced Factory Prices
NO OTHER stove offer compares with the Kalamazoo—more features that you will say are necessary and that you must have. Yet we offer reduced prices this year—lower than ever before. Just think of trying a stove 30 Days before you decide to keep it. And that's only one of a dozen advantages. You have a 300 Day Approval Test—\$100,000 Bank Bond Guarantee—Stove Shipped the Day Your Order Arrives.

Cash or Credit \$5 to \$40 Saved

There's no use of our trying to give our entire offer here. You must send for the big book of 400 stoves, and get all the offer. Kalamazoo stoves are America's standard—and our terms the most liberal known. Write just a postal—mail it today. Ask for Catalog No. 133, giving name of this paper.

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We also make Furnaces and Gas Stoves.
Special Catalogs on Request.

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A Kalamazoo And Gas Stoves Too
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Their Wedding-Journey

By Anna Content

WHEN the first anniversary of our wedding-journey came around, we felt that we would like to make some return more elaborate than a simple tea or informal dinner for all the kindly hospitality which had been shown us since we settled down in our own home. We had not wealth for a gorgeous fête, nor an elaborate entertainment, so we cast about for some idea which by its originality might be pleasing to our friends.

The character of our old-fashioned house, and the fact of commemorating the day when we started out on our wedding-trip gave me the idea I sought. The parlor was long and narrow, so I placed seats along either side and hung two lamps from the ceiling along the mid-line of the room, to suggest the interior of a car.

Back of this was a small sitting-room, which I bereft of all ornaments; I then placed a water-set on a little table in one corner and a desk at one side, placing above this the sign: "Ticket Office." Along the sides of the room the seats were placed in a straight row.

Outside the door was the sign "Waiting-Room," and the door leading into the parlor was placarded "Train Leaves at 8:30."

At the foot of the stairs in the entrance-hall was an index finger pointing upward, beneath which was the legend: "Bundles, Baggage and Babies Checked Up-Stairs."

The dining-room, like the parlor, was a long room, and this I decorated with greenery, and placed small tables at intervals along either side.

While these preparations were in progress, we had sent notes to our many friends, to the effect that, as Mr. and Mrs. _____ had greatly enjoyed their

trip of the year previous, they would like to take their friends with them on this occasion, and therefore they would be pleased if Mr. and Mrs. _____ would be present on the evening of September _____, and accompany them on "Their Wedding-Journey." "P. S.—The train leaves promptly at 8 P. M."

Our guests were met at the doorway by a young niece and nephew who conducted them up-stairs to the ladies' and gentlemen's dressing-rooms respectively, and on descending to the

Waiting-Room they were received by the host and hostess.

The train was slightly delayed by reason of a few late arrivals, but this gave me more time to dispense from the ticket office a series of cards, to each one of which a tiny pencil was attached by means of baby ribbon—red for the gentlemen and blue for the ladies. These cards bore duplicate numbers, which settled the question of partnerships for the evening.

The host, acting as conductor, now called the train, and all went into the "parlor-car." At the forward part I had placed a large easel, to which was fastened a number of full-sized sheets of manila paper. My husband, in the character of conductor, explained that in the ordinary method of travel the brakeman or porter announced each station in Choctaw or kindred tongue, leaving the public to study out the same as best they could.

Here, however, the stations would be announced on a placard by means of a rebus or conundrum, and the passengers could while away the time between stops by guessing what each signified. To lend zest to such an amusement, the Company offered two prizes, the first as a reward to the one guessing most successfully, the other as a consolation prize to the worst failure.

The stations were as given below.

When we arrived at our home station, our conductor announced: "As far as we go," and the cards were collected.

After a few moments' conversation, a fresh announcement was made through the very convenient placard system: "Dinner is now ready in the dining-car," to which the guests of honor led the way.

The small tables seated two couples each, and these readily found their places by means of place-cards. Simple refreshments, consisting of cake and ice-cream, were served.

The prizes, which were awarded while we were still at supper, were a doll's trunk with lock and key for the best, and a pasteboard trunk of candy for the consolation prize. The enthusiastic compliments of our guests led us to believe that our attempt to please and entertain had not been in any sense a failure, and for that fact, of course, we were pleased.



The stations were announced on a placard

MEN'S CLOTHING BOOK

FREE With Samples of the New Materials

Write for it to-day. This book will save you a search for the style that you want, and save you money on the suit or overcoat you order. Ask for MEN'S Clothing Sample Book by express letter or postal to Dept. 12 FF.

MEN'S MERCHANT TAILORED CLOTHING

Suits \$8.75 to \$16.50
Overcoats \$8.75 to \$16.50

We save you half and give you twice the QUALITY and STYLE

THIS SUIT \$8.75

This smart serviceable suit is made of fine quality Gray Cheviot.

Coat is the popular City three button model with Puritan lapels. Four outside pockets and one inside breast pocket. A splendid lining is used and coat front is tailored to retain its shape and smoothness.

Vest is cut to match coat and the trousers are cut medium peg style with side buckle straps. Trousers may be ordered with permanent cuff or 2 1/2 inch hem as desired. All seams are carefully taped and sewn with pure flax linen thread and every other detail has been watched so as to make this suit positively the most sensational value ever offered under \$15.00.

Comes in regular sizes, 34 to 44 chest measure or in extra stout sizes 37 to 48 chest. \$1.00 additional for extra sizes.

Price delivered free from CHICAGO to your home **\$8.75**
Order by number, 22FF 30.

Our Guarantee If you are not pleased (more than satisfied) with any article return it at our expense and we will refund your money as cheerfully as we accept it.

FREE DELIVERY FROM CHICAGO



For FREE SAMPLE BOOK Address Dept. 12FF

THE ORIGINAL SIEGEL COOPER & CO
The Big Store Chicago's Economy Center
- CHICAGO -

Ostrich Plume 16 in. All Colors

ONE DOLLAR

Money Back If Not Pleased
This is an Ostrich Plume of which you will always be proud. Full 16 inches long. Extra wide, willowy flues; large, heavy, drooping head. Sent by mail prepaid, on receipt of \$1.00. Also an extra large, very handsome French Plume, \$2.50.
WILLOW PLUMES—16 in. long, 16 in. wide; triple hand knotted; very durable and stylish. Special, \$3.95. Send Your Order Today.
New York Ostrich Feather Co., Inc., Dept. B, 184 Fifth Ave., N. Y.

Select Your Own Terms



Cornish Pianos and Organs
are sold direct from the factory at a saving of one third or more to you. We have no dealers, so can make our own terms. Every instrument sold on a every one backed by a bonded guarantee for 25 years. Send today for the New Cornish Book and learn how easy it is now to own a highest grade Piano or Organ. Washington, Write TODAY. **Cornish Co., New Jersey**

AGENTS \$8 a Day

Should be easily made selling our Concentrated Non-Alcoholic Food Flavors, Perfumes and Toilet Preparations. Over 60 kinds, put up in collapsible tubes. Ten times the strength of bottle extracts. Every home in city or country is a possible customer. Entirely new. Quick sellers. Good repeaters. Not sold in stores. No competition. 100 per cent. profit to agents. Elegant sample case for workers. Start now while it's new. Write to-day—a post card will do—**FREE** for full particulars
AMERICAN PRODUCTS CO., 5233 Sycamore St., Cincinnati, O.

Saves Clothes, Time, Health and Strength
The one machine that is built on right lines—actually rubs clothes spotlessly clean on exclusive wash board principle—*absorbent in less than 10 minutes*—without wearing or tearing—without strong soaps—without effort—the
BOSS Washing Machine
First Ever Made—Best Today
Nothing to get out of order. Child can tend it. Made of Red Cypress—lasts a lifetime. Can be operated by hand, water, electric or engine power.
FREE—30 Days' Home Trial
If it doesn't do all we claim, the simplest, best made machine you ever saw, don't keep it, you won't be out a penny. Write for free Book and details of trial offer today.
BOSS Washing Mach. Co. Dept. 13 Cincinnati, O.

1 Where all have been: BOSTON	2 PATTERSON	3 The act of an infuriated pedagogue: SCHUYLKILL	4 WEST POINT
5 SING SING	6 ALBANY	7 ERIE	8 The greatest engineering feat on record: WHEELING, W. VA.
9 CLEVELAND	10 The greatest surgical feat ever mentioned: LANSING, MICH.	11 MILWAUKEE	12 BUREAU

The Plumbing of Country Homes

[CONTINUED FROM PAGE 25]

pipe over to the stable, too. Special frost-proof hydrants can be bought; and, of course, the pipe will not freeze, if it is laid sufficiently far underground.

When you have decided to put in a bathroom or other plumbing, by far the safest way is to consult an architect or sanitary engineer, and have him prepare your specifications; but, of course, there are cases where this isn't practicable. The next best thing, therefore, is to go to a really competent, reliable plumber, and let him bid on your work, stating in his bid exactly what he means to furnish. The form will be something like this:

DEAR SIR:
I agree to furnish and put in place, complete, in your residence, the following fixtures:
One "Marvel" bathtub, Plate 2658-A.
One "Economy" closet, Plate 5411-A.
One "Skardon" lavatory, Plate 4307-A.
One 18x24-inch enameled kitchen sink, without drain-board or back, but with brass bibs.

One 30-gallon Barwell boiler, with range connection.

Two brass wash-pave cocks.
I will supply all plumbing, material and labor and do a first-class job (guaranteeing against defects of workmanship or material for two years) for the sum of _____ dollars.

You are to arrange for all carpenter-work and to provide the water-supply system and the sewage system.

Signed, **PAUL PIPER.**

The plate numbers refer to the catalogue of some particular manufacturer, and indicate precisely the fixtures you have selected.

Now, it's perfectly proper for you to get a bid from one or two other good plumbers, using the same plate numbers; but it's rankly dishonorable to give out the first man's figures and ask the others to "beat that." This is sometimes done, I know; but, aside from being dishonorable, it's also very foolish. The plumbers will instantly lose all respect whatever for a

man who "peddles around" a bid like this; they consider that he is trying to "do" them, and therefore they feel perfectly justified in "doing" him. And remember that you are absolutely and entirely at your plumber's mercy (unless you have a supervising architect or engineer to oversee the work); he can skin you most beautifully, if he chooses, and you can't prevent it! For can you tell the difference between "heavy" and "extra heavy" pipe? Do you know a "wiped joint" when you see it? And why, please, is an "eighth-bend" so much less likely to get stopped up than a "sanitary-tee"?

Now, I meant to say something of sewage-disposal, but that's such a very important subject that I haven't nearly enough space left for it here. So you'll have to wait until I write again; then I'll try to tell you something about cesspools, septic-tanks, and all such things. "Sewage-Disposal for Country Homes," I'll call it. Until you hear from me again, then!

Fashions With a Smart Style of Their Own

Designs by Grace Margaret Gould



No. 2124

No. 2124—Felt Hat with Stole and Muff

Cut in one size only. Material required, two yards of thirty-six-inch material, or one yard of seventy-two-inch material, with two and one-half yards of satin thirty-six inches wide. Pattern, ten cents

The price of each pattern is ten cents. Order from our pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado

No. 2125—Surplice Waist with Large Rever

32 to 44 inch bust. Material for 36-inch bust, three and one-fourth yards twenty-two-inch material, or two and one-eighth yards thirty-six-inch material, three fourths of a yard contrasting material, one-half yard of all-over lace. The price of this waist pattern is ten cents



No. 2125
No. 2126

No. 2067—Single-Breasted Norfolk Jacket

32 to 42 inch bust. Quantity of material required for medium size, or 36-inch bust, four and one-fourth yards of twenty-four-inch material, or three and one-eighth yards of thirty-six-inch material. The price of this jacket pattern is ten cents

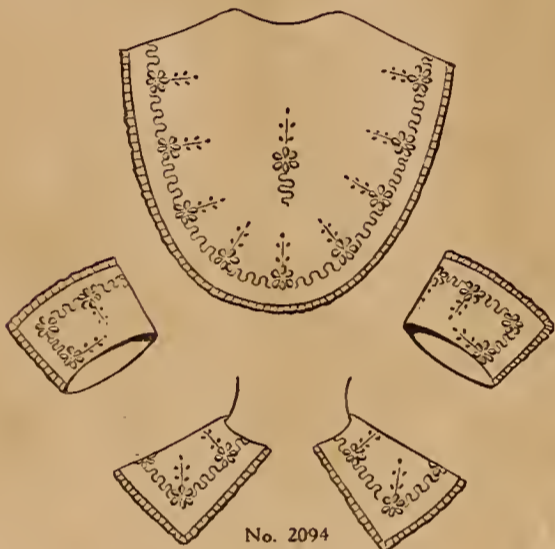
If you have not used our Woman's Home Companion patterns before, do give them a trial. You will see our patterns displayed at their best in the new fall and winter pattern catalogue. Order from pattern depots. Price of catalogue, four cents



No. 2067

No. 2126—Two-Piece Skirt with Pointed Panel

22 to 34 inch waist. Length of skirt, 40 inches. Material for 26-inch waist, five and one-eighth yards of twenty-two-inch material, or three and one-eighth yards of thirty-six-inch material, one and one-eighth yards of contrasting material for panel. Pattern, ten cents



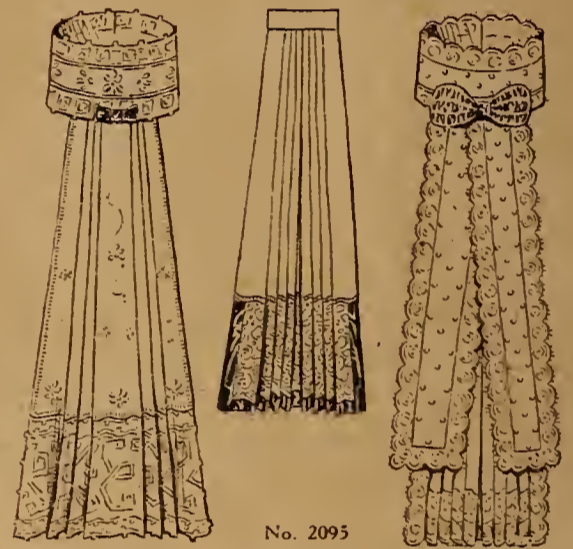
No. 2094

No. 2094—Collar-and-Cuff Set

This pattern is cut in one size. Material required, three fourths of a yard of twenty-seven-inch material. The price of this pattern is ten cents

No. 2095—Set of Three Jabots

This pattern is cut in one size. There is a pattern for each jabot. The price of this pattern is ten cents



No. 2095



No. 1656—Housework Dress: Buttoned in Front

32 to 44 inch bust. Quantity of material for medium size, or 36-inch bust, seven and one-fourth yards of thirty-six-inch material. Be sure to make this very useful dress of some good wash fabric or of a serviceable wool material. The price of this pattern is ten cents



No. 1786—Morning Dress with Rolling Collar

32 to 44 inch bust. Quantity of material for medium size, or 36-inch bust, five and seven-eighths yards of thirty-six-inch material, three eighths of a yard of contrasting material, either striped or in a dark tone, thirty-six inches wide. Price of pattern, ten cents



No. 2121—Tailored Shirt-Waist: New Style Collar

32 to 46 inch bust. Price of this pattern, ten cents



No. 1943—House Dress with Princess Panel

32 to 42 inch bust. Quantity of material required for medium size, or 36-inch bust, six and one-fourth yards of thirty-six-inch material, three eighths of a yard of lace, and three fourths of a yard of satin for trimming. The price of this pattern is ten cents

No. 1826—Six-Gored Skirt with Foot Plaits

22 to 34 inch waist. Price of this pattern, ten cents

The Housewife's Club

EDITOR'S NOTE—Monthly we give prizes of \$2.00 for the two best descriptions (with rough sketch) of original home-made household conveniences or labor-saving devices, and \$1.00 for the third best or any that can be used. We also give 25 cents each for helpful kitchen hints and suggestions, also good tested recipes that can be used. We would suggest that you do not send more than two recipes, and not more than five kitchen hints each month, because we receive so many that space will not allow us to print them all, in spite of the fact that they are reliable and practical. All copy must be in by the tenth of November, and must be written in ink, on one side of the paper. Manuscripts should not contain more than 250 words. We would suggest that contributors retain duplicate copy, as no manuscripts will be returned. The mail is so heavy that it is impossible for us to acknowledge receipt of manuscripts. Address "The Housewife's Club," care of FARM AND FIRESIDE, Springfield, Ohio.

To Shrink Gingham—Before making up, put in tub of cold water to which has been added a handful of salt to set color. Let stand overnight, dry, and press, being careful to keep the edges straight.
Mrs. W. W. P., Oregon.

To Relieve Fatigue—After doing a hard morning's work, if you will bathe the face in warm water and brush the hair and if convenient change the shoes, you will be surprised how much relief you will find.
Mrs. N. C. D., Indiana.

For the Sewing-Machine—When the sewing-machine bothers and the remedy is not known, try unscrewing the feed-plates and cleaning out beneath them. It is astonishing the amount of dirt collected beneath those small plates, and it is doubtful if one sewing-machine in twenty has ever been cleaned beneath those plates.
R. S. M., South Dakota.

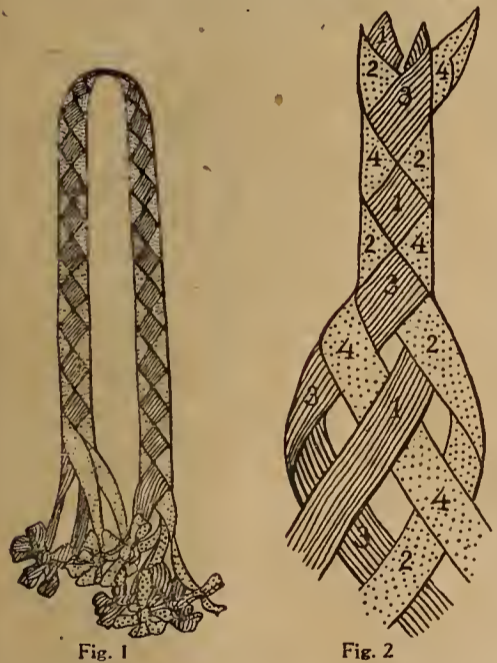
One ten-cent scrub-brush sawed into four pieces makes better brushes for various kitchen uses than the small brushes sold for kitchen use. The scrub-brush bristles are longer and heavier enough to make the brushes easier to hold when rinsing.
R. R. R. C., Maryland.

Plaited Tie—As Directoire ties are now very fashionable an attractive design is shown in plaited ribbon and may be with or without band finishing. To the lover of pretty novelties it will be found not very difficult to manufacture.

Fig. 1 shows a tie in basket weave finished with a bead at the corner of each check in the plaiting.

It is of two contrasting shades of taffeta ribbon, No. 2 in width, three yards of each shade, cut into one-and-one-half-yard lengths, making four strands of ribbon.

Some aid to the weaver attempting it for the first time will be the following rules: The ribbons should be handled in pairs, as



1 and 2 in Fig. 2; the mates in a pair must never be separated by more than one of the other ribbons at a time; at right edge of braid (as in Fig. 2) one strand of a pair always turns downward on the bias, and its mate should be folded immediately over it, turning upward; at left edge of braid the folding is reversed, one strand turned downward and its mate immediately over it, turning upward. Work the plaiting each way to about one-fourth yard of the ends of the ribbons, stay with invisible stitches, and tie the ends of ribbons in tiny bows. If desired, bead finishing may be applied, as illustrated in Fig. 1.
D. C.

For Cleaning Kitchen-Sink—A little kerosene on a cloth is splendid.
Mrs. J. S., Michigan.

Strengthening an Iron Bed—One of our iron beds was beginning to sag. I took a long clothes-line or heavy rope and removed springs and mattress. I began at one end of the top, tied the rope in place where the springs rest and brought it to the bottom of the bed. Thus I used all of the rope, stretching tight from bottom to top after the manner of old-fashioned corded beds. The springs were placed directly on this. The result was no more sagging of the bedstead. I examine it occasionally, tightening as the rope stretches. The bedstead is now as firm as when new.
Mrs. E. O. S., Ohio.

Lard Strainer—To make a good lard strainer, sew a cloth, one of sufficient strength to hold the cracklings while being rendered, to two strong smooth sticks, in such a way so as to allow the ends to be loose so that they can slide easily on the sticks.

This affords a very convenient and ready help to the housewife, and prevents her from becoming burned by the lard. If made of good substantial material this strainer will last a long time.
Mrs. N. R. McL., Ala.

Griddle-Cake Hint—In baking griddle-cakes, most of the smoke from the griddle can be avoided if it is only greased once instead of each time the cakes are put on. The cakes do not stick and are just as crisp and nice as when more grease is used.
Mrs. W. W. M., Pennsylvania.

Mock Venison—Leg of lamb (four pounds), one pint of grape or currant juice, one-fourth bay-leaf, two cloves, one teaspoonful of salt, one-eighth teaspoonful of pepper, one-fourth teaspoonful of curry-powder and two cupfuls of bread-crumbs. *Directions:* Remove bone from roast. Cook roast in hot fruit-juice ten minutes in a covered kettle. *Dressing:* Add salt, pepper and curry-powder to bread-crumbs, moisten with hot fruit-juice, and fill cavity in roast. *Directions for Roasting:* Place roast in pan. Pour fruit-juice in pan. Add cloves and bay-leaf. Baste one hour and twenty minutes.
Miss N. K.

Keep a bottle of borax-water in the kitchen. Pour a little over the hands to remove the odor of dish-water and kitchen soap. Much easier than going up-stairs to one's own soap and nail-brush.
R. R. R. C., Maryland.

In having a skirt made even around the bottom, the top of the stairs is the best place to stand. Whoever is fitting it will find it much easier to sit a step lower down, when putting in pins, than sitting on the floor of a room.
R. R. R. C., Maryland.

Using the Red Part of Watermelon—While camping last summer, my friend made delicious preserves from the red part of watermelon. It turned out somewhat of a surprise to me, as I had never heard of using the red part. Upon returning home I tried it, slicing the red part and cutting away all of the white part. Weigh and use almost as much sugar as you have melon, add two lemons, the juice and grated rind. No water is added. Put all together in a granite kettle, and boil slowly. At first it will seem all water, but gradually it will cook thicker. When thick as desired, put hot in jelly glasses and cover with paraffin, or can it in fruit jars. A bit of rose flavor put in after being removed from the fire is delicious. If not cooked too stiff, it makes a delightful filling to spread between layer-cakes, the top then iced with pink. "Watermelon layer-cake" I have called it.
Mrs. E. O. S., Ohio.

For people with steam heat, old magazines stuck in the radiators will be found a fine substitute for hot-water bottles. Magazines so heated never burn, and when placed in a bed or a baby's carriage, hold the heat for a long time.
R. R. R. C., Maryland.

Pancakes—Try putting a tablespoonful of syrup or brown sugar in your buckwheat cakes and see what golden-brown cakes you will have. They won't be that sickly white color.
Mrs. J. W. S., South Dakota.

Evaporated-Apple Dumplings—Carefully pick over and wash one pint of evaporated apples. Pour one quart of warm water over them, and soak overnight. Stew until soft. Strain off the juice, and mash and sweeten the apples. Stir in a few drops of lemon.

Take one coffee-cupful of flour and one heaping teaspoonful of baking-powder and not quite a level teaspoonful of salt. Sift together, and put into it one heaping tablespoonful of butter. Rub the butter into the flour until fine. Mix with enough sweet milk to make a stiff dough. Divide into four equal parts, and roll out until as large as a tea-plate.

Have a two-quart pudding-dish well buttered and warm. Place one fourth of the apple upon each circle of dough, and gather

up the sides to form a bowl, and place in the pudding dish. Mix together two thirds of a cupful of sugar and two tablespoonfuls of flour, and spread evenly over the top. Put in butter, and pour over all the apple-juice. There should be enough juice to cover the flour and sugar, and if there is not enough, add water. Bake from three quarters to one hour.
Mrs. H. L. M., Montana.

Johnny Cake—Two cupfuls of corn-meal, one cupful of flour, two tablespoonfuls of sugar, two tablespoonfuls of melted butter, or lard, one pint of sour milk in which one level teaspoonful of soda has been dissolved, one teaspoonful of salt. Mix the milk and soda together, stir well, then add the sugar and salt, then stir in the corn-meal and flour, then last the melted shortening. Stir well together. I melt my shortening in the pan in which I will bake the cake. That serves two purposes: it greases the pan and melts it, also. If you use sweet milk or water, use two level teaspoonfuls of cream of tartar and one teaspoonful of soda, or two heaping teaspoonfuls of baking-powder.
R. C., Minneapolis.

Cream Puffs—One cupful of hot water and one-half cupful of butter. Boil water and butter together, and stir in one cupful of flour while boiling. When cool, add three eggs not beaten. Mix and drop in gem-pans. Bake twenty-five minutes. *Filling:* One cupful of milk, one-half cupful of sugar, one egg, two tablespoonfuls of flour and vanilla to taste.
E. L. K., Ohio.

An Easy Way to Make Lye Hominy—To every quart of clean corn, take two tablespoonfuls of common baking-soda, with enough water to cover corn. Let it stand in this water overnight. Boil the corn next morning in this soda-water until the husks will come off. Wash through as many waters as necessary to clean corn, then put back on fire in clear water and cook until tender enough to eat. Season to taste. This is very nice and is easy to make.
Mrs. J. P. T., North Carolina.

No-Egg Cake—One cupful of sugar and butter the size of an egg, cream together. Add one heaping tablespoonful of corn-starch, and stir well. Next add one cupful of milk. Mix two teaspoonfuls of baking-powder with two heaping cupfuls of flour and a little salt. Beat until light, and add any flavoring. Bake in a loaf or in two Washington-pie plates.

Add cocoa to one third of the mixture, and bake two pie-tins of light and one of dark. Less butter and four tablespoonfuls of cocoa, baked in loaf, make a nice chocolate cake. By adding fruit you have a nice light fruit cake, and by adding two tablespoonfuls of molasses and fruit, such as raisins, dates, figs, currants and nut-meats, you have a nice dark cake.
Mrs. M. E. W., Massachusetts.

Baked Cheese—Cut cheese in small pieces. Place in small baking-dish, and season with a very little salt and pepper. Cover with milk, and place in the oven. By the time this has browned the cheese will be cooked enough. Serve immediately. Our family likes this better than Welsh rarebit.
R. R. R. C., Maryland.

Fruit Mix—A delicious jam may be made from odds and ends of canned fruits, preserves and jellies. I have used a half-cupful of peach-juice, a few stewed prunes with their juice, a few spoonfuls of several kinds of jelly and even a little bit of canned tomatoes. I always add the juice and rind of a lemon or orange and a very little ginger (say a half-teaspoonful to a quart of fruit), cut everything up into tiny bits, and it is much improved by the addition of a few raisins. Cook down to a firm jam.
R. R. R. C., Maryland.

Lady Baltimore Cake, for C. D. A., Ohio: One cupful of butter, three and one-half cupfuls of flour, one cupful of milk, two cupfuls of sugar, two teaspoonfuls of baking-powder and whites of six eggs. Work butter and sugar to a cream, sift flour and baking-powder together, add the well-beaten whites to the butter and sugar, then part of the flour. Add the milk and then the rest of the flour. Beat well, and bake in layers. For the filling: One cupful of boiling water, three cupfuls of sugar, one cupful of nuts, one cupful of chopped raisins, five figs and whites of three eggs. Boil water and sugar to soft-ball stage. Then add chopped fruit.
A READER.

Setsnug UNDERWEAR

With the Sliding Waistband Solves the Problem of Well Fitting Clothes

The vests are comfortably shaped with extra width across the bust. The sleeves have close-fitting flexible cuffs.

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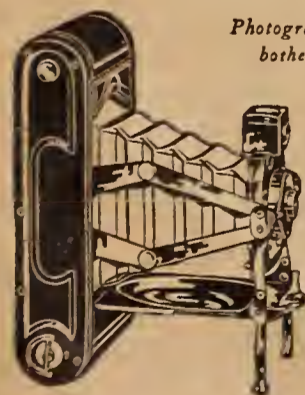
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Salt-Rising Bread

Some Comparisons With Bread Made With Yeast

By Henry A. Kohman

EDITOR'S NOTE—For the first time science has taken hold of the "emptins" of our grandmothers and shows why they "riz." We think this article a most important one. It gives a tested and tried recipe for salt-rising bread—the only bread that is really good to eat with milk. It shows that salt-rising is more economical than yeast bread. And it holds out hope that we shall one of these days be able to buy salt-rising starter in the market, just as we now buy yeast, and of a better quality than the "emptins" have been able to pick up out of the air.

TWO methods of aëration make bread light and porous. The oldest of these, and the one which is most extensively used at present, involves a process of fermentation in which various forms of germ life produce the gas necessary to raise the bread. By the other method bread is given a porous character by mixing, with the flour and other ingredients, certain chemicals in the form of baking-powder, which during the baking evolve the gas that aërates the bread.

The method of preparing bread with the aid of yeast has been extensively investigated, and the function of this micro-organism in bread is thoroughly understood. By its growth and activities in the dough yeast converts a part of the natural sugar into alcohol and carbon dioxide, and the latter, because of its gaseous character, aërates the bread.

Another type of bread involving a process of fermentation, the so-called salt-rising bread, is made by many housewives and bakers, particularly in the South. This bread is neither so thoroughly understood nor so easily made, yet with many people it is the favorite. Governor Stubbs of Kansas eats salt-rising bread altogether and praises its strength-giving powers. The Governor is so fond of this bread that he offered his daughter a valuable prize to induce her to become proficient in the art of making it. In her first attempts failures were frequent and at times she was counseled to throw a batch out to the chickens. But when it was good it was good.

If we search the literature upon bread we will find volumes upon its preparation by means of yeast and a mere smattering upon salt-rising methods. While yeast bread is made on scientific principles, the methods for the salt-rising type are as crude and uncertain as they were centuries ago. The rising of this bread still depends upon a more or less accidental introduction of the proper ferment, as no leaven is used.

Most of the writers upon the subject maintain that the gas formation which aërates the bread owes its origin to "wild" yeast that incidentally gets into the dough either from some of the ingredients or from the air. Necessarily, then, it is a matter of chance whether the bread will rise or not, and indeed failures are of frequent occurrence. Other writers speak of a spontaneous fermentation and ferments, but they do not specify what the germs are.

With the view of putting the preparation of salt-rising bread upon a scientific basis, a thorough investigation was carried on during the past three years in the Department of Industrial Research in the University of Kansas. In this investigation some surprising and interesting results were obtained. Microscopic examinations revealed the fact that it is not yeast at all, as has been maintained, but certain bacteria that raise this bread. From the many kinds of bacteria in the fermenting dough it was possible, with extreme difficulty, to isolate a bacillus which by itself can be used in making salt-rising bread. There was prepared in the laboratory a dry product containing this bacillus, which could be used at will in making this bread. Not only was it tried in the laboratory, but in the home and bakery as well. Numerous housewives used it repeatedly with good success, and in a modern up-to-date bakery where formerly failures had been frequent, this product was used for a month with perfect uniformity of bread from day to day, and without a single failure. In view of this discovery, is it not likely that the results obtained in the manufacture of yeast and yeast bread may be paralleled with this bacillus and salt-rising bread?

But my reader may exclaim, "Make bread with bacteria?" When we think of bacillus typhosus and tuberculosis, we are apt to think that a bacillus is as "dangerous as a bullet," and indeed it may be. While bacteria cause our most dreaded diseases, they are also among our best friends, and we couldn't live without them. There are good ones and bad ones. Each species is specific in its action, and not all, by any means, are deadly. They make our vinegar, ripen our cheese, flavor our butter and tobacco, and now it has been discovered that they may raise our bread.

How does this bacillus differ from yeast? Both are small microscopic plants, so small indeed that they must be magnified several hundred times to be visible to the human eye. The yeast cells are oval-shaped bodies so small that it takes four thousand of them placed end to end to measure an inch. The salt-rising bacillus is rod-shaped, smaller than yeast. Each cell is an independent plant capable of reproduction. In the process of reproduction each cell divides into two about every half-hour and these in turn continue to form cells in a geometric ratio. So rapidly do they multiply, that if there were sufficient food-material, and growth were not curtailed by obnoxious by-products, the progeny of a single cell would, within a week, fill the oceans.

Chemically, this bacillus differs radically from yeast. As everyone knows, yeast decomposes sugar into carbon dioxide and alcohol, the former of which is gaseous and aërates the bread. Curiously enough, these same chemical changes take place in the production of alcoholic liquors by fermentation.

The salt-rising bacillus, on the other hand, forms no alcohol, and the gases, instead of consisting totally of carbon dioxide, consist of hydrogen and carbon dioxide in the ratio of two to one. Hydrogen is many times lighter than carbon dioxide, and in equal weights will aërate twenty-two times as much bread. Owing to its buoyancy, it is used in filling balloons and dirigibles. It must not be inferred however, because the gases produced by this bacillus are so light, that the bread is correspondingly lighter, for indeed it is more solid and closer grained than bread made with yeast. In texture and lightness it resembles more nearly home-made bread than bakers' bread.



Salt-rising bread

The lightness of the gases in salt-rising bread and the fact that no alcohol is produced has a significant economic interest. The alcohol produced by yeast in bread is very volatile and is vaporized by the heat of the oven. This, together with the other volatile products that are driven off, approximates four or five per cent. of the total nutrient value of the bread. In salt-rising bread, on the other hand, this loss is less than one per cent. This difference in the mode of fermentation of the two breads leaves the salt-rising bread richer and sweeter, for it is the sugar that is decomposed by the yeast into alcohol and carbon dioxide. A difference of three or four per cent. of the bread yield from a sack of flour is indeed a small matter, but in the aggregate it sums up to a surprising amount. Calculated on the Kansas wheat crop, for example, the possible saving is sufficient to maintain both the university and the agricultural college.

As weeds and wheat often grow together, so good and bad bacteria may be found in the same fermenting mass. In the search for this salt-rising bacillus, it was found very frequently to be associated with *Bacillus coli communis*, which organism when found in water is sufficient evidence of danger to warrant its condemnation. Not that this bacillus itself is necessarily harmful, but because typhoid and other disease germs are so often associated with it. But there is no cause for alarm, for even if *Bacillus coli* does at times occur in the bread, it is killed by the heat of the oven. Besides, there is a sure way of preventing its occurrence. It is this: If the liquid used in setting the ferment or "emptins" is made boiling-hot before the corn-meal is stirred into it, this bacillus always perishes, while the salt-rising bacillus discovered in these experiments easily withstands this treatment. This is to be explained by the fact that in the



Bread laboratory, University of Kansas

spore state this last bacillus is extremely resistant to heat. In dough, however, when it is actively growing, it is very sensitive and is completely killed in the oven. Salt-rising bread, then, is as sterile as any bread and fully as wholesome and nutritious.

My reader who is not familiar with this bread may ask why should we make salt-rising bread and what are its advantages. We may safely say that it is largely a matter of taste. The bread is different. With the first bite one will notice its distinctive odor and flavor. Some people like it all the time, some a part of the time and a few none of the time. Most people, however, welcome an occasional change in bread as well as a change in any other article of food.

As an outgrowth of this research, we may safely predict that in the near future a leaven for salt-rising bread will be put upon the market, for home and bakery use. With this product will come the elimination of failures and an improved loaf, and salt-rising bread may justly claim its share in the title, "The Staff of Life." In the meantime those who wish to try their luck at making this bread by present methods will find the following recipe a good one:

RECIPE FOR SALT-RISING BREAD

Yeast—Take one cupful of sweet milk in a quart cup. Place cup upon stove until milk boils well. Stir into the boiling-hot milk five or six teaspoonfuls of white corn-meal to which a pinch of soda has been added. Wrap up well, and set in a warm place overnight, or until it is light.

Sponge—Pour one and one-fourth cupfuls of water, as hot as the hand can bear, in a bowl, and add about two cupfuls of flour. Then add the yeast from the quart cup, and stir with a spoon until mixed. Place the bowl in a warm place until the sponge rises well, about one to one and one-half hours. A good way to keep the sponge warm is to place the bowl in warm water. The water should be at body temperature or warmer.

Dough—Take one and one-fourth cupfuls of hot water (almost boiling), and dissolve in it four teaspoonfuls of sugar, one teaspoonful of salt, two teaspoonfuls of lard, and add six or seven cupfuls of flour. Then add the sponge, and mix well. Add more flour if necessary to make a rather soft dough. Mold the bread into loaves at once. Put in a warm place to rise one to one and one-half hours, and bake in the usual way.

Salt-rising bread is close-grained, and it should not be made as light as other bread.

Browned Corn-Meal Biscuits—Spread one cupful of corn-meal thinly on a flat tin, and brown lightly in the oven, stirring, to get an even color. While still hot, add one-half teaspoonful of salt, and mix to a stiff batter with boiling-hot nut cream (about two cupfuls), beating thoroughly. Drop by spoonfuls on buttered tins, and bake until well browned. The nut cream is made by rubbing nut butter smooth with a little water until of the consistency of cream.



Section of salt-rising bread

Sunday Reading

Not by Bread Only

By Richard Braunstein

MOSES said, "Man doth not live by bread only." The Israelites had been gaging the goodness of the Lord by the fulness of their stomachs. Many people fancy themselves religious when they are merely good-natured over the supply of their bodily needs. It is good to praise our Maker for temporal gifts, but He bestows more than bread. There are other things in the world by which we grow strong. Let Israel remember that man is not fed until the whole man has been fed. Body, soul and spirit must each and all be fed. "Not by bread only, but by every word . . . of God." Every gift of Deity, every part of His wondrous creation, must be appropriated to the diet of mankind.

"This is a glorious message for our age," says a noted writer. Let the whole man be fed! Let each broaden his dietary until it includes food for the eye and food for the fancy; food for the heart life and food until the whole self has been nourished.

There have been and are to-day certain votaries of religion who starve the body as a form of piety. There is no essential religious merit in abstaining from the lower bread of life. Note the entire phrase. Not bread only. There is no intimation that it is not ordinarily worth while to feed the body. God is least edified by the vision of emaciated saints. Renunciation is not the final measure of piety. Man has no business to go hungry in body except in the interest of feeding some higher hunger.

Dr. Clarke Peck tells the story of Professor Brooks, how he heard from his own lips the story of his early sacrifices. He had been a successful photographer, but had been seized with a passion for the stars. Soon he gave up his business to lie under the open sky that he might study its marvels. Hard times came to the little cottage. Luxuries and then necessities were given up so that Professor Brooks might pursue his "high calling." Sleep too was a nightly sacrifice on the altar of the man's devotion. To-day Professor Brooks is famous and has high honors and titles everywhere. He has discovered a comet which bears his name. He talks to the stars as men talk to familiar friends. He calls them by name. The sacrifices of his early life—were they not worth while?

One of our most famous writers used to shut himself up in his study for days at a time. A few crackers and a pitcher of water were his only nourishment during these productive times. He almost starved his body lest he lose the vision of his mind. It is a hard doctrine, doubtless. Nor will it be approved by the man who always quits at the stroke of the hour. But it may be said to be one measure of the grade of the man.

Agassiz was under the same spell when he refused a high salary for a foreign lecture tour, saying that he could not afford to make money. He was fearful lest he lose some of the banquet of wonder God had spread for him at home.

How many bearings this has upon life! Books, friendships, truth, beauty, righteousness—these are all food for men. Every flower of the field is a word of God. He has spoken in lily and rose. Every sunset and rainbow are eloquent of him! Think of living for "bread only."

I am glad that there are men and women in the world who are writing books and songs of help and inspiration; building cathedrals, tunneling mountains, toiling not for bread only, but because they are in love with their work. Nourishing not alone their own souls in so doing, but the souls of those who listen to their divine messages.

Brutus once asked:

Upon what meat hath this our Cæsar fed
That he hath grown so great?

The answer is that in so far as Cæsar had grown really great he had done so by feeding upon more than bread, had learned that man does not live by "bread only." May the divine spirit direct us to feed the whole man. To be nourished through eye and ear, through heart and soul, is to grow in the likeness of Him over whom the angels sang carols twenty centuries ago. The bread of truth and beauty and power.

When God made man in His own image, He made him to love after His own manner of loving. Therefore, man's love is a little like God's love, when he obeys God, and cultivates it; and very much unlike God's love, when he disobeys God, and does not cultivate it.

A Night in the Clock-Shop

[CONTINUED FROM PAGE 24]

hear their happy voices as the door swung to and fro upon its hinges.

"After supper they played more games, and then the very little ones began to yawn and rub their eyes, and the grown people said it was time to go home. They all begged for just a few minutes more, and I tried not to hurry a bit, but at last the few minutes' grace was gone, and they all went away, and our children went to bed, and I was left alone in the moonlight to measure off the hours."

"It must be pleasant to live in such a house," said the voice from the high shelf. "I've never been where there were little people."

"Hope I won't have to live where there are any," growled the nickel clock.

Nobody paid any attention to him, and for a long time nothing was said, and all the clocks ticked softly, as if they were thinking. The kitchen clocks whispered a little together, the grandfather clock murmured in his sleep. It was so still a little mouse came out and ran across the counter in the moonlight, so close to the French clock that she almost fainted from fright. The nickel clock and the cuckoo both tried to speak at once to reassure her, and then the nickel clock, who was a loud fellow, began to sing, "We won't go home till—" "One!" rang a big bell, and they were all still, and by and by all the clocks were asleep and dreaming of old times. In the morning the boy came and took down the shutters and turned out the gas and wound up all the clocks. Then some men came and carried off the grandfather clock, and a student came to see if the nickel clock was mended.

The clock which was on the high shelf was taken down and taken to pieces, and the French clock was left alone.

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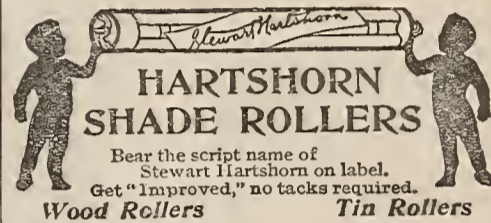
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Large Living and
Main Bedroom. Modern
in every respect. Size 27x36 ft.

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\$26.50 Buys This Complete Bath Room Outfit
Here is a saving to you of 50%; a high grade, perfect white enameled bath tub, 5 feet long, all nickel plated trimmings, including door, with nickel plated hot and cold water; lavatory of latest design, with high one piece back, all white enameled, big size, nickel plated basin cocks, nickel plated trimmings. Closet is latest, most sanitary Syphon acting, vitreous closet bowl; hardwood seat and cover, nickel plated hinges; fitted with hardwood, copper lined, low down tank, latest style, easy working, noiseless hard wood seat and cover, with nickel plated hinges. Low down, latest style, copper lined tank. Outfit is Lot 5-AD-106. Write for prices on other styles, also our Plumbing and Heating Catalog.

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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, OCTOBER 26, 1912



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A Lone Wrestler on the Mountaintop

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With the Editor

PROGRESS places a great strain on people.

Jesus said, "I come not to bring peace to the world, but a sword." Some people have thought that by this he meant war, and favored war; but by this time we ought to be able to see that what he meant was the conflict that always comes when new truth appears in the field. His gospel is a gospel of progress, and progress can't be achieved without stress and strain and more or less of a fight.

It's the same with any new truth. Our doctors are still treating malaria as something which comes from "bad air" or "exhalations" which we breathe. Anyhow, some doctors are. I talked with one not very long ago who told me very wisely that malaria comes from those things! Of course, intelligent people, whether doctors or not, have known for years now that malaria has no relation to bad air. It is the result of a disease germ which we get from mosquito-bites, and in no other way under the sun.

Now this doctor of whom I speak is a busy man—so busy "practising" that he fails to keep in touch with the times. One may say that he has so much practice that he can't find the time to learn how to cure people.

Some of us farmers are in the same situation. We can't find the time to study the really scientific things we ought to know in order to make the most of our opportunities. And again, some farmers are doing so well—like the doctor, perhaps—in the old way that they are pretty well satisfied. I met an old Iowa friend a few months ago, a man whom I knew when I was a boy. He is a good farmer. He is making money. He was, at the time, on his way home from Chicago, where he went with a few car-loads of hogs and returned with a new automobile. He reads the farm papers. But he has no silo.

Well, my old friend had no high charge for interest. He bought his land half a century ago for less than \$5 an acre, and owes no man. He can afford to follow any system he pleases so long as it affords him a living and doesn't deplete the soil. But if he had to make a living and pay for the land at \$150 an acre—which is what his farm is worth,—or if he had to pay rent on the basis of interest on \$150 an acre, and make a living on top of that, he would have to have a silo. Or, in some way he would have to utilize every ounce of crop grown on the farm.

He is in easy circumstances, because he was willing to be in hard circumstances fifty years ago when Iowa was a good deal of a wilderness. Progress doesn't worry him because he doesn't have to pay any attention to it. He is doing business on \$150-an-acre land at an expense of \$5—that is, he has a lead of \$145 an acre over the competition which progress has established.

SOMETIMES the best educated college graduate finds that he has overshot the mark in his researches and investigations. He finds that, while he knows a lot which the old codgers about him do not, they have him beaten in the most important agricultural matters. I know a young man who lived in a city until he had graduated from an agricultural college. He worked on farms in vacations, and he did everything that a city man can do to learn farming practically as well as theoretically. But he had not had the advantage the farm boy possesses of driving a team year after year and listening to the discussion of farm problems about the hearth in a farm home while a child. He went on a large farm as tenant. Three hundred acres of land to be plowed, put into crops, tended and harvested. I visited him about the first of July of his first summer. Things looked badly. He had made a lot of mistakes that an old farmer would never have made. The college course did not tell him that if he plowed around an eighty-acre field and had any bad luck with the plowing it would bother in the cultivation of the whole field, while if he took it in small "lands" whatever was wrong was localized in a "land." He had a strip of poor plowing twenty rods wide all around the field which made bad corn-plowing all the time. A lot of other blunders of the same sort he had made.

"I thought," said he when I talked to him of the situation, "that I knew a great deal more about farming than the neighbors about here, but I'm making up my mind that I would be hundreds of dollars better off this year if I knew as much as the fifteen-year-old boys of the neighborhood. It'll take me years to learn the things that are second nature to them!"

Did he fail? By no means. He stuck to the farm, and is now successful. He caught up in his knack of doing things. Gradually he pulled ahead of his neighbors. After a while the art of doing things began to cooperate with the scientific truths he had mastered, and money began to come into his till, and recognition from his neighbors as the best farmer of them all was no small part of his reward.

Now suppose that one of those old farmers had been his father and the owner of the farm. The strain of progress would have been still more severe. My young friend had the right to make his mistakes and suffer by them, but Dad might have refused him that freedom. He might have been kept from using his superior science by the standpat adherence of Dad to his superior practice.

DID any of you ever live near an Indian reservation whence went the young people to college? Then you have seen that strangest and most natural phenomenon, a "blanket" Indian or squaw, living in a tepee, refusing to talk English, eating, wearing and apparently thinking what the tribe ate, talked and thought—and perhaps possessing in some secret place the parchment certificate of an A. B. or a B. Sc.

Why did the Indian who was a college graduate go back and become a "blanket" Indian? Unthinking people say it is because of heredity. But it is not. It is because of environment. Blankets are no more hereditary than boots or hickory shirts. But the Indian with the college degree has given up to the strain of progress. He is too far ahead of his people, and rather than live in loneliness, set off from friends by different ways, different thoughts and different dress he throws up the trappings of progress and goes back to the traps of his people.

The man with a son who is a college graduate—who has studied the science of agriculture—should not force him to become a "blanket" farmer. He should let the young man put his ideas into effect, even though it seems to him that the new methods are not so good as the old. Thus he will relieve the strain of progress. It is for the old to give way to the young when it comes to the new knowledge. The young may not know the how so well, but they have a better acquaintance with the why. And in the long run the why is most important.

Robert Quick

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A Good Position Open

THOUSANDS of men and women keep pegging on in the same old way, barely making a living, perhaps without steady employment. They don't know how to get a position that will pay better.

Here is a chance for someone in your county to get a permanent position that will pay well. It is mighty pleasant work, and we guarantee good pay.

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STRONGEST FENCE MADE

FROM FACTORY DIRECT TO FARM
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Hertzler & Zook Co., Box 9, Belleville, Pa.

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FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/4 inches, length of columns two hundred lines. 3% discount for cash with order. Three lines is smallest space accepted.

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Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVI. No. 2

Springfield, Ohio, October 26, 1912

PUBLISHED
BI-WEEKLY

The English sparrow is a good food-bird. That's all he is good for. In Scriptural times the sparrow was used for food, and in St. Matthew's day two were sold for a farthing. The Department of Agriculture, in a recent bulletin, tells how to catch, cook and serve them. This food use may solve the problem.

The Unarmed Honey-Bee

THE stingless bee is on the job of honey-making in undress parade, if we are to credit the statement of one Burroughs, bee-breeding specialist of England. Two years of cross-breeding Cyprian drones (gentlemen bees of leisure) with Italian queens (female bees of quality) has resulted in stingless, not stingerless, workers. The stinging organ is still in the bee's scabbard, so to speak, but it cannot be unlimbered (to mix the figure).

The claim is made that these unarmed bees are more vigorous than the ones arrayed for battle, the vitalized fighting blood being diverted to business equipment. The sterilizing strength of the unused poison gland seems also to have immuned this coming bee against disease.

This breeding experiment may not prove to have given the world a race of bees that will perpetuate a harmless honey-gathering insect, but, if not, such a bee will be bred later. Mankind likes not to be stung. Therefore the sting must go.

Birds a Farm Asset

FOR generations poets and sentimentalists have rhymed, raved and written of the beauty and graces of bird life. Countless farm folk and town dwellers have perhaps equal or greater appreciation of their breezy bird acquaintances, but its expression is less picturesque and pronounced. The trouble with all this praiseworthy interest in birds has been, and is, that the appreciation is for their beauty and allurements without giving heed to the economic importance of bird life. True, systematic work is being done by the Audubon Society and other organized workers, but these are not accomplishing the country-wide protection in the full measure that must prevail if birds are to render their fullest possible service to agriculture.

The most energetic and influential farmers whose conversion would count the most for bird protection do not take time to understand the immeasurable insect-destruction work the birds about them are capable of doing. Could every thoughtful farmer be induced to devote an entire day to observation and study of his bird neighbors during the young-rearing season (which is likewise the crop-destruction period by most pests), beginning with the friendly chippy and saucy house-wren up through the ranks to the larks and quail, the fighting champions of bird conservation would increase by leaps and bounds. Pot-hunters, sportsmen with scurrying dogs, prowling, homeless cats and the urchins armed with sling-shot and air-gun would then get their just deserts.

It is an economic folly to constantly increase expenditure and labor for artificial destruction of insects without turning a hand to prevent the decimation of our bird life—Nature's intended check against insect pests. Government dissection of bird-craws showing the birds with the goods in them and Audubon-born sentiment and statistics are both valuable aids, but the farmer himself must be induced to study the problem of bird values. Then he will act for bird preservation and bird multiplication without much loss of time.

An Unidentified Horse Disease

THE horse disease variously known as "blind," "sleepy" or "mad" staggers, which has attracted more and more attention for several years following the harvest season, is again occasioning anxiety and loss. News comes from Nebraska, Kansas, Virginia, Ohio and other sections indicating that horse-owners will suffer heavier losses this season than before.

Singularly, the veterinary authorities are not yet fully satisfied as to what is the actual cause of the disease. Some hold it to be of parasitic origin. Others believe its nature to be similar to cerebro-spinal meningitis. And others that the disease is caused by a cumulative poisoning following the eating of corn-ears



Dr. Cyril G. Hopkins

NOWADAYS when soil-fertility problems are under consideration the name of Doctor Hopkins never fails to get into the discussion. Doctor Hopkins stands for the improvement of soils. He accepts doctrines and theories only when they have been tried and proven of value to the farmer. And he thinks mainly of the Illinois farmer. The practical standpoint, that touching dollars and cents, that in which the farmer is interested, is the one he has most at heart. That is the reason why FARM AND FIRESIDE is always glad to present contributions from his pen. His statements have the true ring of authority.

containing mold and filth commonly present in corn that has been the host of the corn ear-worm. Other kinds of moldy fodders found in pastures and stubble-fields are likewise suspected.

But little headway has thus far been made in the way of an effective cure or control of this ailment, unless the work of the Kansas College of Agriculture proves to be effective for the purpose. A vaccine for inoculating affected horses is now being made at the Kansas Field Station to fill rush demands for the remedy. Already over two thousand horses have been treated at the station, only nineteen of which died. It is early yet to make any forecast about the ultimate value of the remedy. If it cures the disease, the after results may prevent its use. The truth will soon be known.

It is quite clear that the situation is considered serious from the fact that veterinarians to the number of nearly one hundred recently met in Nebraska, representing several adjacent States, to confer in regard to the best handling of the disease. Nebraska's loss in horses from this disease is already estimated to be upward of two hundred thousand dollars.

Concrete vs. Wood Construction

INNUMERABLE farmers are now making use of concrete for construction purposes for which lumber, stone or brick were almost entirely used a decade ago. Nevertheless, a very great number are still using lumber, and of extremely poor quality, for making improvements and repairs, simply because concrete construction is unfamiliar work. Hesitation in making use of this newer permanent material is sure to be a losing experience to many who must soon tear out and renew workmanship, and meanwhile lose in using a less satisfactory equipment.

There is still something bordering on mystery in concrete-making to many who are unacquainted with the process. The changing of a moist, yielding mass to a substance very like stone induces the idea that the stuff might "set" before the workers get ready and spoil the job. As a matter of fact, the few simple rules governing the correct making of concrete for different purposes can be mastered in an hour. The operation is no more complex than mixing different kinds of bread—rolls, rusks, biscuits, etc. Of course, the "know how" will come quicker from watching experienced workmen actively at work.

If concrete construction of some importance is to be undertaken, it is the part of wisdom to spend a day going to see operations of a like nature under way, as a means of getting ideas that will insure and expedite the work.

Scores of uses are now being made of concrete that may well be given consideration by every farmer. Some of these are fence-posts, permanent fence-corner braces, drain-tile, hotbeds, cold-frames, feeding-floors, well-platforms, watering-troughs, hog-wallows, stock-dipping tanks, septic tanks, spraying-solution mixing-tanks, feed-cookers, milk-cooling vats, mangers, feeding-racks, foundations for machinery, duck-ponds, chimney-caps, cisterns, etc., in addition to more pretentious improvements, such as root-cellars, ice-houses, silos and farm buildings generally.

Lack of sand and gravel are the limiting factors that prevent the economical making of concrete in some localities, but broken rock, small stone and cobblestone can take the place of gravel to furnish a part of the "coarse aggregate" in the concrete mixture. The introduction of waste rough stone of varying sizes into the forms to become a part of the concrete body is a means of considerable saving in cost for some kinds of construction. The concrete "sets" in contact with every portion of the rough stone surfaces, the stone taking the place of that much bulk of the more expensive concrete mixture.

Even the farmer who has his own timber-lot may well calculate closely and inform himself carefully before using lumber for farm repairs and improvements. Many kinds of lumber and wood products now have a commercial value for special uses that will surprise those who have not kept close tab on lumber values.

There is a prospect that considerable increase of the local lumber supply may result from the new interest in forestry instruction, but the demands being made on the timber of the country must continue to overbalance the new acreage growth for several generations to come.

Sorghum Syrup—Its Place on American Farms

By A. Hugh Bryan

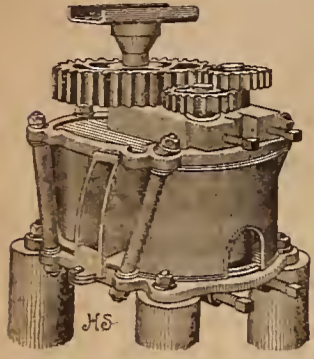


Fig. 1—Heavy three-roller vertical horse-power cane-mill

the use of dangerous chemicals. The processes to be described are simple, but, as in all sugar or syrup making, cleanliness and despatch are necessary, and unless one is very careful numerous unsuccessful trials may be made before a fine syrup is produced. The manufacture of a good grade of syrup is influenced to a great extent by the variety of sorghum, its growth and care used, so it will be necessary to discuss some of these points.

When selecting land for a patch, do not take some obscure, shaded spot where the sun never penetrates, nor some corner of a corn-field where during the former year weeds flourished, nor some wet spot or dry, sandy hill in a field, nor land on the lower side of the barn-yard where the washings from the manure-pile will run down, as none of these will produce good sorghum for syrup-making. Select a clear, clean, open spot where the sun can get at it, in a good, dry, warm land of a clayey or sandy texture, well drained and in good condition. In fact, select your best corn-land. This plot should be plowed deep and well pulverized early in the fall, then harrowed or disked to keep down weeds. Plant the sorghum when the ground is warm enough to plant corn. In the Southern States the first of April is considered early planting; northward, using the northern line of Louisiana as a limit, the season gets later at the rate of about one week for every two degrees, or one hundred and fifty miles. Early planting is preferable for the reason that it may produce a second crop for forage. Do not plant all the plot at one time.

How to Manage the Sorghum Crop

Sorghum for syrup-making should always be planted in rows three or three and one-half feet apart. The seeding should be done so that the plants will be very evenly distributed and average a distance of four to six inches in the row, or even thinner. Guard against having the plants too close. Not over one to two pounds of seed an acre are needed.

As to the best varieties, one has many from which to select. In the Northern States, where the growing season is short, one should plant some form of Amber or Orange. Farther south these can be planted and also some of the Sumac, Honey or Gooseneck varieties. Amber sorghum-cane is small and gives small yields per acre, but produces a good syrup. Orange is a heavier one and a larger producer as a general rule.

After planting, and while the sorghum is small, the ground should be thoroughly cultivated to destroy the weeds. When it is waist high, care should be exercised in cultivating not to cut off the roots, as this stunts the plant and spoils it for syrup making. If planting has been too thick, it is well to cut out some. Cultivation may be continued until the plant begins to head. From then on no work need be done until it is ripe.

The stage at which sorghum should be cut for syrup is when the juice or sap of the plant contains the most sugar. Analysis has shown that when the seeds are in the late milk stage it is ripe enough to harvest, and from this stage on till the seeds are hard and flinty the plant should yield good syrup. Before harvesting, or best while the flowers are still out, it is well to go through the patch and cut off the suckers from the stalks. These decrease the yield of syrup, and when crushed in quantity with the ripe stalks produce a greenish taste in the juice and syrup. The start of the harvest depends somewhat upon the size of the plot, the manufacturing capacity and the nearness to the time of killing frost, which spoils sorghum for syrup-making. Light frosts do not do so much damage. Standing sorghum, on the approach of conditions favorable to a heavy frost, should be cut, tied in bundles and shocked, as it keeps better than when the bundles are laid down. In this cutting, if time permits, it should be stripped of leaves, as they tend to heat the pile, causing decomposition.

Harvesting can be done with an ordinary corn-knife. The individual stalks should be stripped of leaves, cut at the base within a few inches of the ground, then laid in piles with the heads in one direction. A saw-buck is a good accessory for each cutter during harvest, as they can be laid in this, then tied in a bundle. The heads can be removed when



Fig. 5—Tank connection for drawing off juice

THE past two or three years have witnessed a revival of the manufacture of sorghum syrup. Whether this has been due to the quality of the commercial syrup on the market, to the scarcity of good sugar-cane syrups, or to the fact that a better grade of syrup can be produced now than formerly, is hard to say.

The manufacture of this syrup is not complicated and does not require special skill, expensive apparatus and machinery, or processes to be described are simple, but, as in all sugar or syrup making, cleanliness and despatch are necessary, and unless one is very careful numerous unsuccessful trials may be made before a fine syrup is produced. The manufacture of a good grade of syrup is influenced to a great extent by the variety of sorghum, its growth and care used, so it will be necessary to discuss some of these points.



Fig. 2—Three-roller horizontal horse-power cane-mill

The production of the sorghums for syrup is becoming of more and more importance in this country. Doctor Bryan, the author of this article, is Chief of the Sugar Laboratory, Bureau of Chemistry, United States Department of Agriculture. Some few months ago he wrote Farmer's Bulletin No. 477, the subject of which was much the same as the subject of this article. This bulletin was so practical that we asked him to give the readers of Farm and Fireside his latest ideas. He has done so. The publishing of this contribution is a pleasure. EDITOR.

harvesting in the field or when tied in bundles, but must be removed before running through the mill, as they greatly influence the flavor of the syrup. Harvesting should not be carried on in a wet field where the stalks will get dirty and should not be completed faster than the material can be worked up at the mill during the next day or day and a half; in other words, it is not well to have more than one or two days' supply of sorghum-cane on hand at the mill unless toward the last of the season when freezes are expected. The seed-heads can be left in the field to dry and then be collected.

Manufacturing Sorghum on a Small Scale

When harvesting, select several typical sorghum-canes and place them in shock, cover with a net or other protection from birds, and when quite dry cut the seed-heads and place them in a stout grain bag. These seeds can be thrashed out later and used as the seed for next year's crop. In this way an unmixed seed of good quality can be obtained by the syrup-maker.

The apparatus necessary for manufacture on a small scale is a mill of some sort, a tank or barrels and an evaporator. Accessories are dry wood, coal or oil for the fire, some quicklime, clean, large milk-cans and tin cans or barrels for receiving the syrup.

The mill may be a two-roller mill, but a three-roller mill will give better yields. Fig. 1 shows a type of three-roller mill with a shaft for sweep operated by horse-power. These are made in sizes with a capacity varying from two to eight tons of sorghum in twelve hours and cost from \$15 up to \$100. The rolls are generally serrated so that when placed in an upright position the stalks cannot twist to one side. Mills can be obtained with the rolls horizontal; these are somewhat more expensive than the upright mill. Fig. 2 shows such a form. The mill to purchase is one that can be easily taken apart and new pieces substituted when breaks occur. It must run smoothly and true for good results. The rolls must be capable of being adjusted to any distance from each other by means of set-screws. In setting up such mills care should be exercised to have the mill level and rigid on the frame or upright supports, which should be carefully braced.

Without these precautions imperfect pressing will result and a break in the mill be caused.

For manufacture on a larger scale, power mills, using some form of engine, can be obtained. These may be fitted with a carrier for bagasse (as the expressed sorghum-cane is called) and a feed table. Both are good adjuncts, as the latter allows the stalks to be arranged in some form before entering the mill, and the latter carries the bagasse some distance from the mill. Fig. 3 shows such an arrangement.

A mill of sufficient size should be obtained to yield in a forenoon enough juice to boil all the afternoon. The reason for this is plain, considering the process of clarification and evaporation. Having selected a mill, the next point is to set the rolls so as to obtain the maximum pressing with the minimum expense of labor. The distance between the rolls should be guided somewhat by the size of the individual stalks and by the "feed." By "feed" is meant the quantity passing through the mill at one time. If the rolls are set for a heavy "feed," then if only a few stalks are fed to the mill at one time, the quantity of juice pressed out is too small. Again, if the rolls are set for a small "feed," a large feed will clog the mill and will tend to break some part.

Sorghum generally contains from seventy to eighty per cent. of water and about ten to twelve per cent. of fiber. With proper milling in a three-roller mill one should obtain at least about fifty per cent. of the total weight in juice. Sixty per cent. is sometimes obtained with three-roller mills. One can easily ascertain this by weighing a quantity of the sorghum before and after pressing.

The juice as it comes from the mill is greenish in color, generally, and if put in a bottle shows considerable material that will settle to the bottom on standing. It is of prime importance to allow this material to settle before evaporation, if a fine-flavored, good-colored syrup is to be produced. The juice contains, besides sucrose (cane-sugar), reducing sugars, some nitrogenous matter (similar to white of egg), mineral matter and a number of other organic bodies. In suspension are held the dirt on the sorghum-cane, starch granules, pieces of dry leaves, bagasse, etc. A

fine wire sieve placed at the end of the trough coming from the mill will tend to collect some of this dirt, but much will pass the sieve, so it is best to have a large tank capable of holding nearly a half-day's supply, or better, two or three tanks of smaller size, into which the juice runs from the mill. Fill one of these tanks and part of another before starting evaporation. By this means a large part of this suspended matter will drop to the bottom and not go into the evaporator to spoil the syrup. It is this material which in eighty per cent. of the cases spoils the flavor of the syrup and has given sorghum a setback as a table preparation. A tank divided into three parts is best; fill one portion, then fill the second, and do not draw any into the evaporator until the third is being filled. In that way one tank is always being settled. Half-barrels arranged as in Fig. 4 will serve for tanks, and the clear juice can be tipped from the settlings.

Fig. 5 shows a pipe arrangement for inside of tanks. The arm can be dropped down to take off the clear juice from the sediment.

There are many forms of evaporators available. The portable one shown in Fig. 6 has many points to be considered. The fire-box is in place and good value is obtained from the fire. The rocker allows the furnace and pan to be tipped so that the juice will flow from one compartment to another. Little gates are noted in the walls of the compartment so that the flow can be stopped. These evaporators can be obtained from \$35 up. In this form the raw juice is generally let into the compartment immediately over the fire, and when it has reached a boiling temperature is skimmed and passed on back. The finished syrup is drawn off at the back.

Fig. 8 represents a cheaper form of evaporator. The pan itself is bought and the brickwork or stonework is put up by the syrup-maker. This arch does not have to be as elaborate as shown; it should, however, be strong and should be tight to keep the fire in. In place of the zigzag arrangement of the pan, a single pan or, better, two smaller ones could be substituted.

These pans are best made of metal, but many makers have the sides of heavy boards of hard wood and use a piece of sheet iron, carefully luted on, for the bottom. With these home-made pans and arches one should use care to see that the bottom is straight and the arch is level or has a slight slope toward the back. In the production of the best grade of syrup there are many important points to be considered. The juice coming to be evaporated must be clear and free from suspended matter. The evaporation must be as quick as possible and all material coming to the surface must be skimmed off.

What Will the Profits Be?

To determine the finishing-point of a syrup, one or two methods may be used. A thermometer, with a scale up to 230° F. or higher, placed in the boiling syrup gives some idea of the finishing-point if the temperature at which the syrup is boiling is noted. A syrup of proper density will boil at about 224° F., the boiling-point of water being 212° F. Another method is the use of a hydrometer, the usual form of which (shown in Fig. 7) is the Baumé hydrometer. This is of glass about eight inches long and obtainable from any chemical firm or most wholesale druggists. The instrument is placed in the syrup in a cup at least one inch longer than the hydrometer. The point on the scale at which the instrument comes to rest is the density. In water this instrument sinks to 0; a finished syrup while hot reads between 35° to 36°, but when cold should read over 38° F. The accuracy of these glass hydrometers is very much affected by using them in hot liquids, hence it is not good practice to use your accurate instrument in the hot syrup.

Other methods of determining the finishing-point are by noting the way the liquid boils and falls or pours from a spoon. These are not as accurate, however. A syrup properly concentrated should weigh when cold not less than eleven and one-fourth pounds to a gallon. With such concentration the product should keep with little danger of fermentation and crystallization. Sorghum syrup should be stored in dry rooms or places of even temperature, as great changes of temperature induce crystallization and fermentation.

Sorghum may yield as high as fifteen tons to the acre or as low as four or five or even lower. One acre should produce from sixty to one hundred gallons of syrup. The cost of manufacture varies somewhat. Some makers claim as low as twenty-five cents a gallon, while others state double this. The selling price is anywhere from thirty-five to seventy-five cents, sometimes higher.

The points necessary for a good syrup, then, are: use ripe sorghum-cane, have it clean of trash before milling, allow the juice to settle before evaporation and then hurry the work of evaporation as rapidly as possible.

Fig. 6—A portable evaporator

Fig. 7—Hydrometer and its position in the liquid

Fig. 8—A pan evaporator

Fig. 3—Mill with feed-table and bagasse-carrier

Fig. 4—A swinging barrel for easily pouring off settled juice

Placing Your Money Where It Pays Dividends

Lack of Drains Means Loss

By Charles Dillon

MORE than thirty million dollars a year could be added to the crop value of Kansas if land that needs it were properly drained. At present the crop from this land, between three and four million acres of it in eastern Kansas, averages \$5 an acre. That this condition is not improved surprises business men, because it has been proved, again and again, that in many cases the drain has paid for itself in a year. A safe estimate applied to this neglected land shows that the crop value could be increased \$10 an acre by draining.

If these conditions are true in Kansas, a State not remarkable for its bogs, how much larger must be the loss in States where there is much water! One farmer near Kansas City has, in the last two years, actually reclaimed from the rankest condition more than two hundred acres of low bottom-land that never had produced anything except coarse, low-value hay. Now this land is growing alfalfa. The rate to Kansas City on this hay is \$1 a ton; the farmer can easily get four crops a year—about five tons an acre, safe estimate—and make more money with the first crop, when the price is up to \$21 or \$22 a ton, than he could with wheat or corn in the whole year. Of course, alfalfa goes down to \$11 and \$12 as the season advances, but the crop is so attractive and takes so much less labor than anything else that there is grave danger of its being overdone and the land injured. It is mentioned here to show what one man fell into by draining his land.

Wet lands along the lower edge of a hill can usually be drained at a minimum expense and will return a satisfactory profit for the work. Black gumbo is easily drained, and if a convenient outlet can be obtained will pay for its tile-drain. Hardpan, however, is rather more difficult to handle. The best authorities hold that it must have at least twelve inches of fertile soil on top of the hardpan before it can be drained.

Occasionally it is possible to drain, successfully, a seepy hillside with one line of tile underdrain. This should be laid near the upper edge of the seep outcrop, and should be laid deep enough to lie on the impervious under strata. This method is known as the cut-off system.

H. B. Walker of the Kansas Agricultural College, a drainage engineer of long experience, has lately undertaken the somewhat unusual task of teaching road salesmen how to sell drain-tile. They must know how to describe the advantages, the increased yields, the probable value of the increase, the cost of the pipe and many other things that every farmer will insist upon knowing.

A drainage system, Mr. Walker says, should be planned to have as few junctions as possible. Wherever there is a junction, a small amount of land is double-drained. To avoid this several plans have been employed successfully: To drain an old pond the herring-bone system should be used, while for a sloping field extending in one direction the gridiron is the best. The gridiron should not be used, however, on fields that are almost level, where all parts are equally in need of drainage. Never try to drain a seepy hillside by extending short laterals from a main up the hill. It is expensive and ineffective.

It is sometimes possible to drain successfully extensive level bottom-lands and old ponds by surface drains, but these drains are being replaced, nowadays, by under drains of burned clay or cement tile. Before laying a system of drain-tile or laying out the line for the drain it is necessary to know the character of the soil and, in a general way, the slope or amount of fall from the upper to the lower part of the field. In most cases the farmer knows his soil, but the best depth for the laterals and distances between them must be determined by experience. In heavy soils they are placed as close as fifty feet and three feet deep, while in a more porous soil one hundred or even one hundred and fifty feet is close enough at that depth.

It is not advisable for any man to trust to his eyes alone in laying out lines for tiles. You can buy a farm level with full instructions for operating for \$15, or you can make a water level like the one shown in the sketch at the bottom of the page. It is easily constructed: A, cork; B, glass tubes; C, three-quarter-inch gas-pipe; D, colored water.

With the outlet located, assign it an elevation of ten feet. Set the level over the main line one hundred and fifty feet from the outlet. Sight to a measuring-stick or a leveling-rod at the outlet, and you will have the distance of your level above the outlet. By adding

the assigned elevation of the outlet, ten feet, to this reading you get the height of your instrument. Take a reading at the one-hundred-foot mark. Subtract this from the height of your level, and you have the elevation of the one-hundred-foot mark. Continue making calculations and leveling along the main line of tile to the upper end, when you can determine the difference in elevation between the outlet and this place. This is really the easiest part of the work. It wipes out the supposed mystery of surveying. Of course, if your time is more valuable than ordinary folks, it will pay to hire an engineer, but by following these directions and those that come with the farm level you can do your own engineering, particularly if you have had four years in college, as many farmers nowadays have had.

Your tile will be laid three feet underground, so take three from the difference, just referred to, and divide by the number of feet in the main. This gives the fall



Draining Kansas lands is a profitable investment

or grade for every hundred feet. Beginning at the outlet, where the elevation is ten feet, add this grade to every hundred feet consecutively to get the elevation of the line of tile. If your grade is two inches, for instance, the elevation of the grade line at the one-hundred-foot mark will be ten feet two inches, at the two-hundred-foot point ten feet four inches, and so on. To find how deep to cut the ditch at these points, subtract the elevation of the grade line from the elevation of the ground surface.

Coming down to actual figures, the cost of a drain can scarcely be known before it is built, but a close estimate may be obtained by comparing with work upon which a cost record has been kept. For instance, 4,450 feet of four, five, six, and eight inch tile were laid at an average depth of three feet seven inches, on the Kansas Agricultural College farm, last spring, for \$252.25. That is about ninety-three and one-half cents a rod.

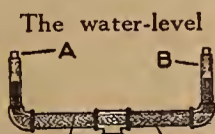
Never use tile smaller than four inches. The first one thousand feet of a lateral may be four-inch tile, but if longer than one thousand feet the remainder should be five inches. Mains with a two-inch fall for each one hundred feet, and for lengths less than one thousand feet, should be of the size tile shown here:

Size of Tile	Land Drained
5 inches	.....22 acres
6 "	.....35 "
7 "	.....50 "
8 "	.....70 "
9 "	.....95 "

Utilizing the Farm By-Products

By Clifford E. Davis

IN EVERY factory the utilization of all the waste materials into valuable products is one of the special industries. A farm should be merely an ever-at-work factory, with part of its members making the crops grow, turning soil, sunshine and rain into salable produce, while down in the engine-room (the kitchen) the others should be making good foods, jellies, etc. The waste products of ashes should go to orchard or garden, in order to able potash. The to the garden squeezed-out making should yard or hog-lot, used by the pants. The dishes should go on the land table-crums and scraps or poultry. Unless there the waste every day, there which suggests that it is woeful want." My old that it was a sin to waste used. Even the old tin cans gles by melting off the top open the side with a pair To the poor farmer all much, and to the prosperous



The water-level

as liquid fertilizer, and the should be thrown to birds is a systematic use of all soon arises the condition "wilful waste that makes grandmother always said any thing that could be can be made into tin shin- and bottom and cutting of old scissors or shears. such ideas and plans mean farmer more than he thinks.

Eliminating the Road Contractor

By Isaac L. Totten

IN THIS State (Indiana) we have what is termed "The Three-Mile Gravel Road" law. Under the provisions of this law fifty freeholders of a township may petition the county commissioners to establish and construct three miles of gravel road at any place within the bounds of that township, providing the road is to connect with a township-line road or another gravel road at either of its terminals; and the road may be established and built if the township is not already overbonded, and if the bonds for the new road can be sold.

This is a very elastic law and permits of the dissipation of a very large amount of county money, because of the fact that the work is let to contractors.

Of course, the construction work of the roads is let to the lowest bidders; but there are so many hooks and crooks—mostly crooks—in connection with the work, when placed in the hands of a contractor, that the cost of constructing the roads is greatly in excess of the benefits.

After the county commissioners have established the road for which the fifty freeholders of the township have petitioned, they appoint a superintendent, whose duty is to see that the proper grade is made for the road, and also to see that the right kind of gravel is used and applied according to specifications.

The one who usually gets the job of being superintendent is someone to whom the commissioners owe political obligations, and in many instances he is not in the least competent to supervise the work.

I had an opportunity recently to observe how some of the road work was handled. I was one of the gravel-haulers employed. The gravel—or what was supposed to be gravel—was hauled from cars, a distance of about a mile during the time I was working. This alleged gravel was obtained from the gravel-pits belonging to the contractors. The superintendent, who was employed by the county to see that the contractors carried out the work according to specifications, engineered all of the work, with the exception of managing the teams and keeping the time. He did the contractors' work while the contractors loafed around the saloons in town making themselves good fellows with whoever they thought would play into their hands.

Although the superintendent was employed and paid by the county, he asked the contractors for compensation for the work he did of setting grade boards and helping level the gravel.

The contractors were nothing more than figureheads. The county was paying them a good round profit merely for their signature on the contract; the county was doing the work for them, and not the contractors doing the work for the county. A pretty way to work it!

Why cannot this kind of work be handled direct by the county, state or national government and so eliminate the contractors? It would save millions of dollars.

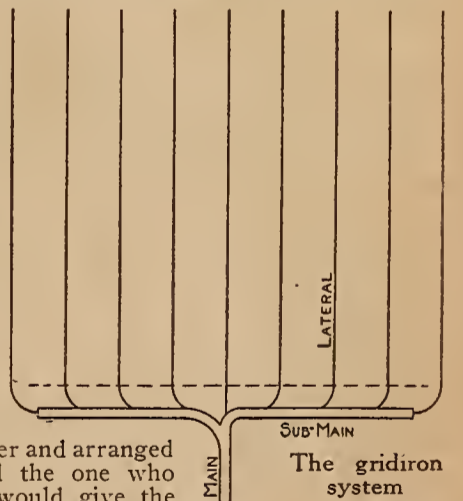
One contractor told of how the "bid game" was worked when bids were placed on a certain piece of work. He said that the contractors usually got together and arranged their bids, and the one who wanted the job would give the others a bonus and have them put their bids in higher than his. Of course, they were high enough to give him a chance to so place his bid as to bring in a sum large enough to pay the bonus and besides that a handsome profit for himself.

I read this letter the other day from one of our townsmen who was recently appointed a trustee in bankruptcy of a big irrigation deal in eastern Oregon.

At the request of creditors to the amount of two and one-half million dollars in Chicago, I was appointed by the Federal Court trustee in bankruptcy of a big irrigation deal, Willow River Irrigation Co., in eastern Oregon. I get absolutely dumfounded to see the incompetency and graft that has put this company where it is; there is a loss to date of nearly two million dollars. The bonds are held all over the East by banks and trust companies.

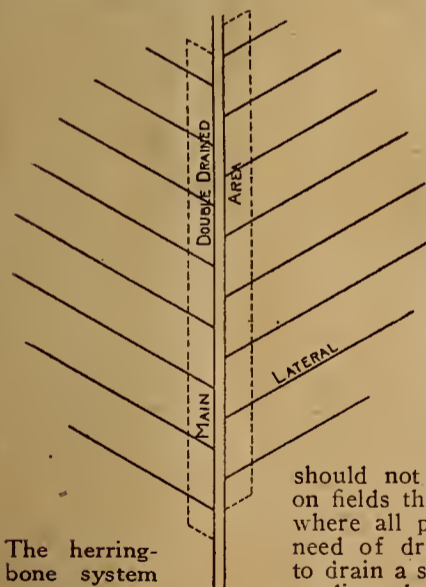
I have never been very much in favor of the national government doing work of this kind, but I am beginning to think that, in spite of all the red tape and slow moving, the government work is by far the best and most economical. The trouble with the private enterprises is that they are undertaken for profit of the people getting them up; and if, on top of that, incompetency and graft get in, it is a pretty tough proposition.

This feeling that all kinds of work that it is possible for the local and national governments to handle direct should be handled in that way is becoming more in evidence every day in all parts of the United States.



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Postum Cereal Company, Ltd.,
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The Market Outlook

Steady Cattle-Market

THE bulk of the cattle from western pastures are now being marketed, but unlike former years we have had no gluts and no excessive runs, consequently the markets keep fairly steady; nor is there very much chance for cheaper beef for some months to come. Weather in western Iowa has for twenty days through September been anything but ideal—cold, gloomy, cloudy, with frequent rain. Hard weather to hay in and hard on the corn, which was frozen and killed on the twenty-sixth and twenty-eighth. Eighty-five per cent. of the crop is safe however, and a large crop.

Iowa is buying stock cattle freely at all the western markets, mostly on the light-weight order. The heavy feeders are a hard proposition to buy, as packers are still keen buyers for anything carrying beef. Consequently there can be no serious break in prices for months to come, as the light cattle now going out will not come back before spring and summer of 1913. The freeze on the twenty-sixth was not generally expected, and as our agricultural papers have been preaching for weeks past to the farmers not to fill their siloes until the corn was ready, the consequence is, a large number of the siloes are empty, and as they (the farmers) are not fixed in many cases to add water, the siloes will not be filled this year. I have always held that one half a loaf was better than none, and when the fifteenth of September comes around and the corn is not quite ready, it is a pretty good plan to play safe. Always remember that all this talk about letting the corn get glazed and hard before cutting is all right if the season is normal, but in a late season you can make good ensilage when the corn begins to dent, and if it is very green, cut it a day or two ahead, and let it dry out a little. That's what I did, and my siloes were filled before the freeze came, and I'm losing no sleep over sour silage. Last year we had corn in the shock everywhere all over this State. I could stand on my farm and see the shocks in every direction. To-day, outside of my own, I can see but a few scattered acres. This practically applies to the State.

I suppose the farmers figure that there is a good crop of hay, and the best way to get a good price for it is to eat up three fourths of it during the winter and sell one fourth for good money in spring. They seem to forget that they could just reverse this if they liked (by cutting corn), feed one fourth in winter and sell three fourths in spring, or keep it against a rainy day. There's seldom a year I don't meet, on the way to my farm, dozens of teams in the late summer hauling hay to town to sell and never a Saturday in spring but these same farmers I again meet going home with a couple of bales of hay in the back of the wagon, and the few bales in spring is costing as much as the load sold in late summer. To some of them it would be a dreadful and unheard-of thing to have a stack or two of hay left over.

In Egypt they had seven years of plenty and seven years of famine, and they stored up in the seven years of plenty enough to see them through the seven years of famine. Here in this country things move faster. It's one year of plenty and one year of famine, and the money is made by the man who has something over and to sell in the famine year. Our hindsight is generally better than our foresight.

W. S. A. SMITH, Iowa.

Sheep-Market Firm

THOUGH receipts of both sheep and lambs have been unusually large in most of the leading markets, and fat sheep now and then something of a drug, yet the general tone has been very firm. Occasionally the packers have been able to beat down prices to some extent, but what with an evidently increasing demand for mutton and lamb, and the anxiety of feeders to buy while the big run lasts, nearly everything offered has been cleared at satisfactory prices, considering that quality has too often been far from what it ought to be.

There appears to be no question as to the scarcity of feeders and of breeding ewes. Hay and feed of all kinds are so plentiful in the West that the sheepmen in many cases have decided to keep much of their stock which in ordinary seasons would be coming to market. In a recent issue of their *Live Stock Report*, Clay, Robinson & Co. say that: "The price pendulum for sheep and lambs will swing toward the better side just as soon as western range shipments have spent their force. No cheap meats are in sight for some time to come." The *South Omaha Journal Stockman* has this to say:

"There are signs in plenty that the sheep-market is going to follow the cattle-market before next summer. People are going to be compelled to use mutton in place of beef, and the available supply of sheep and lambs is limited."

Quite recently a lot of seven hundred good two-year-old 102-pound Idaho breeding ewes brought the very satisfactory price of \$7.30 per hundredweight in Chicago, and very soon it will be hard to buy good ones at any price; so farmers who propose to "get into the band-wagon" and have some lambs for next year will have to hurry up if they are short of ewes.

The wool-market is in a most satisfactory condition. Unwashed Ohio Delaines have been selling at twenty-four cents, and one half, three eighths and one fourth blood wools have gone as high as thirty cents. *The Breeders' Gazette* tells a tale which should sound well to all wool-growers. It is that those funny skimmed skirts which have for a time pleased some of us and shocked others are, by the mandate of the Parisian fashion-makers, to go out and the big skirts of our grandmothers to come in. Since the skimpy ones take only three and one-fourth yards of fifty-four-inch cloth to make, and the ample ones six yards, wool-growers will have to give thanks to lovely woman for another blessing bestowed.

I have always been inclined to respect the opinions of practical men ever since, as a child, I read how Jacob beat his father-in-law Laban in a sheep deal, and so will not apologize for giving here the opinions of some men eminent as sheep breeders and feeders. In *The Drovers' Telegram*, of Kansas City, W. H. Fisher of Grantville, Kansas, says: "It is my opinion that sheep pay out now better than cattle. Less money has to be invested, and better results are made every time on a flock of sheep." H. E. Divilbiss, of Cleveland, Missouri, says that "in an experience of six years he never handled sheep at a loss." He does not feed sheep, but breeds them.

British farmers, too, are showing undiminished faith in the future of the sheep trade, for though incessant rains during both hay-time and harvest have made this one of the most disastrous years on record they have never been more ready to pay high prices for them for breeding purposes. At a recent auction sale forty-one Shropshire rams brought the average price of \$42, and twenty-five breeding ewes, \$17. One ram brought \$175, and another, \$150. All were bought for home use, and this sale is by no means exceptional.

JOHN PICKERING ROSS, Illinois.

Hogs Advance Slightly

THE October decline in the hog-market was a short-lived affair. Almost immediately upon the decline the receipts dropped, the shipping demand showed some improvement and a sharp reaction occurred, with prices returning to the September high levels. The packers were forced to follow the advance to fill their current fresh-meat demand. They had overplayed their game in their raid.

The current supply hardly equals the demand from the fresh-meat channels, and the packers' cellars are gradually getting barer.

By winter but little will remain on their shelves.

During the past few months they have done a large cash business both in fresh and cured meats.

Among the consignments now reaching the yards those coming from the territory tributary to Chicago and St. Louis are of poor quality and few in numbers. The ravages of cholera a year ago still show their effects. On Mondays at Chicago the run is of good quality, as it comes from west of the Mississippi, where conditions have been more favorable, from whence the greater part of the winter's supply will come.

There are but few little pigs now reaching market, and so they are in good demand. The grower is reticent about selling any of his stock under present conditions. He has a bounteous crop on hand with much of it not in a marketable condition and feeding operations are profitable, so he prefers to keep all stock as long as possible to make an outlet for his grain. Under such circumstances it looks as if there will be no marked declines in the hog-market for some weeks to come.

In the provisions-market the firm tone of the live-hog market has been felt, and prices have advanced slightly on a strong market.

LLOYD K. BROWN, South Dakota.



Hogs have lifted many mortgages

High Prices for Eggs

WHEN the poor hatches came off last spring, many poulterers decided to give up raising any great amount of stock this season and buy pullets later. This idea was so general among both fancy and utility breeders that the outcome seems to be a general shortage of stock all over the country. To make the matter more serious, feed prices began rising early in the summer, and farmers and poulterers in general from all sections of the country began selling all surplus old stock. Thousands of car-lots were shipped to our cities, and still the prices kept up higher than usual for poultry of all grades.

As a result from this exodus of poultry the supply is much lower than usual this fall, and the outlook now is favorable for higher prices than last year for both poultry and eggs. Few of our larger egg and poultry centers are now receiving more than enough for daily consumption, and our exports this year will be smaller than last without doubt. New York, Chicago, St. Louis, Pittsburgh and other leading poultry and egg markets have had considerable trouble in securing enough of the best grades to supply their demand, even though larger prices than usual have been paid for over three weeks now. Eastern cities have been buying western eggs at the highest prices known for this time of the year to help out. The second week of September New York city was buying western eggs at 28 cents and 29 cents per dozen, case count. This is as high as State and near-by eggs usually bring in New York, and the market for fresh hennery eggs went from 28 cents to 36 cents in less than ten days in this city.

From the reports all over our country it is fair to assume eggs of a fine quality, strictly fresh and good size will reach higher prices this season than last winter. As feed prices are slowly dropping as new crops are getting on the market, it is hardly probable any considerable amount of stock will be sold from now on, with egg prices going up. The situation for September 15th in general is better for good prices than we have had for several years, as advices below will show:

New York advices: A scarcity of fine fresh eggs since September 1st. Receipts for all grades of eggs lower than the same time last year. No accumulation of any stock at present is being made, and all offerings of State and near-by hennery eggs are accepted at extreme quotations; often at 1 cent to 2 cents above quotations. The Hebrew holidays took near fifty per cent. of the buyers, and a much larger per cent. of the packers and candlers, off the street, and business was somewhat crippled, though prices were not greatly affected by it. At present markets are quiet, prices are firm.

Chicago advices: Receipts run light, and many shipments lack quality. Near-by stock brought a premium, and some stock is being taken from cold storage for meeting local demands. From present conditions dealers claim there will be a steady movement out of the coolers from now on. Prices remain 25 cents for extras, running to 14 cents for chicks. Poultry runs lower than New York quotations, which were 20 cents per pound for young chickens; fowls, 18 cents; ducks, 14 cents to 18 cents; turkeys, 15 cents.

St. Louis advices: Receipts are falling steadily, and cold-storage stock is being used to meet demands. Owing to very poor quality of stock received, prices are running low for fresh stock. Both quality and quantity is below average, which shows that western farmers and poultrymen have sold short on birds. At Kansas City eggs were running poor, and light shipments. Prices accordingly were not advanced from early in September. A good demand was reported for poultry, and shipments fairly light.

Pittsburgh advices: Few producers realize that Pittsburgh, Pennsylvania, is becoming a progressive and noted market for poultry produce. This city covers a considerable field, and prices usually run very good there. There is a strong demand for fine fresh hennery eggs, and while prices are not as high as New York, Boston or Philadelphia markets usually, they are better than shipments to these markets would net the shipper. There is a strong demand also for dirty and cheap eggs, and these are kept cleaned up. Prices on poultry are good. Hens, 16 cents to 20 cents; ducks, 15 cents to 16 cents; turkeys, 16 cents to 17 cents; pigeons, 35 cents to 40 cents.

Boston advices: Eggs and poultry run a few cents under New York quotations, and supply fully cleaned out. Fancy goods in demand, good prices. Little storage used.

Altogether the outlook for winter prices to the producer seems good. Many New York hotels and other consumers of considerable eggs are beginning to make contracts direct with the producer where producer will guarantee a fancy article of fresh goods in desired quantity. News comes that the Canadian Pacific Railroad is entering into cooperative deals with poulterers and farmers near and in the province of Alberta to secure eggs and poultry for its dining-car service. The company offer about 5 cents per dozen over local prices for guaranteed eggs in cartons and will have a central storage near Calgary, Alberta, for its use.

O. F. SAMPSON, New York.

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It runs on kerosene (coal oil), gasoline, alcohol or distillate without change of equipment—starts without cranking—runs in either direction—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—starts easily at 40 degrees below zero—complete, ready to run—children operate them—5-year iron-clad guarantee—15-day money-back trial. Sizes 2 to 20 H. P. Send a postal today for free catalog, which shows how Sandow will be useful to you. Our special advertising proposition makes you one-half cost of first engine sold in your county. (167) Detroit Motor Car Supply Co., 88 Canton Ave., Detroit, Mich.

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1913

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The Fastest Selling Car in America

BEFORE we announced this car we had signed contracts for over 39,000. Yet we had planned to limit our 1913 production to 40,000 cars. We are now shipping 150 cars a day. Yet we could ship 500 a day if we could make them. Right now we are over 3,000 cars behind our immediate shipping orders. We have been in this condition for the last 30 days. It is beginning to look as if we never could catch up.

Practically every important 1913 announcement has been made. A careful examination of these announcements will prove precisely what we have been claiming—that there is not a \$1,200 car built that has any more practical value to offer than this one for \$985.

And here are the comparative facts which support this seemingly bold statement.

Automobile values must be looked at from several different angles. You must consider not only the price, but what that price buys you. You must take into consideration the power, the strength, the beauty, the construction, the size, the appearance and the equipment of the car. You must judge a car by the material in it; the workmanship on it; the methods employed to produce it; and last but not least, the facilities behind the production methods.

Examine each one of these fundamentals in this Overland at \$985 and you will find a car that is identical with any \$1,200 car in the world. Go further and

you find high-grade construction and painstaking care in finish that equal the production methods employed in the making of any \$5,000 car you know of.

This car has the power of a \$1,200 car; it has the strength of a \$1,200 car; it has the size of a \$1,200 car; it has the seating capacity of a \$1,200 car; it has the wheel base of a \$1,200 car; it has the chassis construction of a \$1,200 car; it has the comfort of a \$1,200 car; it has the beauty and finish of a \$1,200 car.

Take the equipment item alone. It has a Warner speedometer—the best made; it has a fine mohair top and boot; it has a clear vision wind shield; it has a self-starter and Prestolite tank—every practical accessory made for an automobile. And all for the one price—\$985. There are no "extras."

Then there are those important construction features which are only found on the very high-priced cars. This model has a drop-forged I beam section front axle, fitted with the famous Timken bearings; a three-quarter floating rear axle fitted with Hyatt bearings; a selective transmission, with three speeds forward and reverse, fitted with annular bearings, and a cold rolled pressed steel frame. It has the center control. The brakes are unusually large for a car of this size and power, and are ample for cars of much greater weight. There are two powerful sets of the drum type, internal expanding and external contracting. The great braking surface of these is indicated by their dimensions,

13 inches by 2¼ inches each. These are the brake dimensions you find on \$1,500 cars. Pick up the catalogue of any \$1,500 car and see for yourself. The springs are semi-elliptic front, three-quarter elliptic rear. Each spring has six leaves. Tires are 32x3½ Q. D.

This model is superbly finished. The striking body is in dark Overland blue. Battleship Gray wheels harmonize perfectly with the rich, dark body which is trimmed in black and nickel plate.

How can we market this car at this price? By making 40,000 cars a year. Increased production brings decreased selling prices. There is the answer in six small words.

If we could bring you fully to realize the size of our huge organization, you would more fully appreciate and understand the value of this car and why we can do what others cannot.

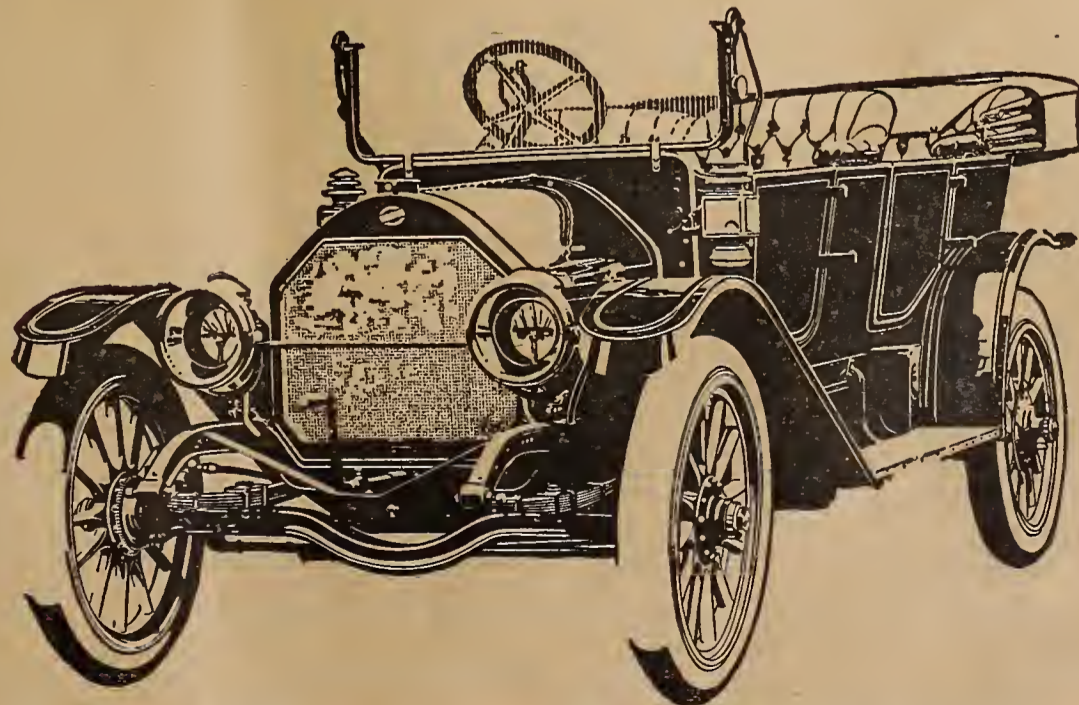
The demand for this car has already swamped the entire visible supply for the 1913 season. It has actually simmered down to a mere allotment proposition. So if you want an Overland "69" get your order in quick.

Any man who pays over \$985 for a completely equipped 30 horsepower, five passenger touring car of this type and size is just wasting money.

See this Model "69" at the Overland salesroom in your city at once. Order early if you want it early. Handsome catalogue on request. Write today, addressing Department 62.

The Willys-Overland Company, Toledo, Ohio

Self Starter
30 Horsepower
5-Passenger Touring Car
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Timken Bearings
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Warner Speedometer
Remy Magneto
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Selling Certified Milk

Certified Milk is Merely High-Grade Milk Produced and Handled in a Specified Manner. Expensive Equipment Not Essential

CERTIFIED milk is frequently spoken of as though it could be found only in the bucket of gold at the end of the rainbow, but in reality it is becoming quite a commonplace article of food. For a time most certified milk was produced in dairies supported by philanthropists and impractical business men who were riding a farm hobby. But what is certified milk?

When a man receives a certified check, he knows the check is good, and he is safe in accepting it. Certified milk is simply milk which is guaranteed to be safe and free from contamination. The most important point in the certification or guaranteeing of milk is to have some recognized and competent body of men vouch for the purity of the milk and the condition of the dairy. Most eastern cities have a milk commission composed of influential physicians, business men, a milk-inspector or two and generally a veterinarian.

The State of New York provides that "all milk sold as certified milk be conspicuously marked with the name of the commission certifying it." The commissions serve without pay in the interests of the public. Of course, the standard for the milk is determined by the milk commission or controlling board. Certified milk must be handled under certain regulations drawn up by the board, and the premises of the dairymen selling certified milk are open to inspection by authorized persons acting for the board of commission. The cows, of course, must be free from disease.

Standards for Cleanliness

The richness and general nature of certified milk does not differ materially, if at all, from that of ordinary milk. The cleanliness of the milk receives by far the greatest attention. Since bacteria which cause milk to sour are carried into the milk chiefly on particles of dirt and dust, the number of bacteria in the milk have a close relation to the cleanliness of the milk. Certain standards for the number of bacteria allowed are therefore generally made. The numbers for each cubic centimeter (about a thimbleful) range from 10,000 to 50,000, with an average of about 25,000 of bacteria allowed. The summer standards are generally more liberal than winter standards. Most milk which is handled in a clean place will not contain that number of bacteria, but unless the milk is cooled quickly and kept cool the number will increase, so a cooling system must be provided, by which

the temperature may be kept between forty and fifty degrees Fahrenheit.

Certified milk sells for ten cents a quart and up. If the town in which the milk is sold does not have a milk commission, the first step is to consult the mayor or health officer and have a commission appointed. Their approval of the dairy or dairies must then be secured, and as soon as the milk is produced in the manner specified by them, it may be sold as certified milk. Certified milk is in demand chiefly for feeding children and invalids, and as it invariably advertises itself, a trade is quickly built up. Certified milk is invariably sold in bottles.

The production of certified milk involves a greater investment and probably a better class of hired help than the average dairy. The actual running expenses of a certified-milk dairy will be about twenty per cent. more than for an ordinary milk business, and the selling price of certified milk is from forty to fifty per cent. more than for ordinary market milk. For example, when the retail price of ordinary milk is eight cents a quart, certified milk sells for twelve. In very warm weather, when milk prices are generally low, certified milk is in greatest demand because of its superior keeping qualities.

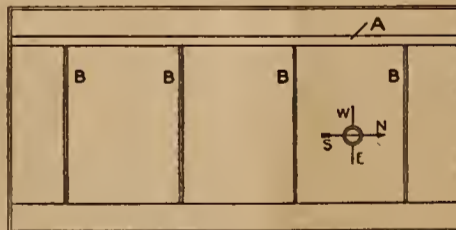
The actual work involved in running a certified-milk dairy is not sufficient cause for the extra prices charged. But the knowledge and skill and care which is necessary ARE sufficient cause and justify any price which the dairyman is able to get. The most expensive milk is always cheaper than medicine and doctors' visits. And, besides, there is the human aspect, which overshadows commercial considerations.

As a warning to dairymen who desire to produce certified milk, I will cite a case of a certified-milk establishment which barely covers expenses in summer and runs at a loss in the winter. The first error was overcapitalization. White uniforms and caps were provided for the drivers of the wagons, and money spent lavishly for purposes of making a display, but which had no bearing on the actual purity of the milk. The hay and feed barns were built more than thirty rods from the cow-barns on the false theory that hay and feed too near the stables would contaminate the milk. The enormous expense of doing the feeding under such circumstances need only be mentioned. The best rule to observe is to make investments for extra equipment only when the quality of the milk can be improved thereby, or when such equipment will reduce the cost of production or be of real advertising value.

D. S. BURCH.

Housing the Sheep

AFTER keeping sheep for many years and being abundantly satisfied with the returns, not only in plenty of money, but in restoring worn-out pastures and in top-dressing, I know what I want for a sheep-barn. First, it must have plenty of fresh air and sunshine. Next, is good water, and fortunately, like most other New England farms, mine has unfailing springs, one of which is already piped to the barn and flows through it without freezing, even in the coldest weather. Let us suppose the barn is to accommodate 125 sheep. We make it 28x64, end to the north, so the sunshine may pour in during the morning and afternoon. One of the important phases of the stable may be seen in the sketch. There is a four-foot lamb-pen running the entire length of the stable on each side, with plenty of windows to admit sunlight and to let in air most of the days in winter. Sheep require far less close shelter than most persons imagine. Each sheep wears an all-wool



overcoat, remember, and this is one reason why such stock winters so cheaply. The south side of a hill is a most excellent location for the stable, and if it is worked into the gravel somewhat for one-half its length, it will be all the more protected and will make easy hauling for the hay-wagons in hot weather. I would not have much trumpery where the sheep live, and would divide the stable into three double pens and two single ones, as I have outlined. These pens are sixteen and eight feet, respectively. The lambs leave them and get into the long lamb-runs through small doors which sheep cannot pass. At A is shown a long, narrow trough the water runs in, and this is left open, except at the entrance of the feeding-racks and where the lambs pass over it. The hay and other feeds are stored above, and passed to the four-foot runs through chutes. I have not found anything for racks superior to the ones which have walks through the middle and hinged sides that may be used to shut out the sheep when putting grain in the troughs. This stable should be eight, nine or ten feet high, and have at least thirty windows. Make every partition movable, that extra room may be thus provided



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It's the guarantee of satisfaction. It means that the blanket is made of the strongest, tightest-twisted yarns our spinners can produce. It means that the entire blanket—yarns, straps, buckles, everything—was made in the largest blanket factory in the world and was shipped direct from that factory to your dealer's shelves.

Ask Your Dealer for

5A Storm King Square Blankets

They are strong, warm, thick and closely woven. They outwear several ordinary blankets. Weigh 8 lbs. Measure 84 x 90 inches. Cost but \$2.50.

- Buy a 5A Square Blanket for street use.
- Buy a 5A Bias Girth Blanket for stable use.
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Write for booklet showing blankets in colors.

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A retail druggist in a "live horse town" within 30 minutes ride from New York City, writes: "I am selling three times more Save-the-Horse than any other one Veterinary remedy; when they want the GOODS that cures they come back for Save-the-Horse."

Whether on Spavin, Ringbone (except Low, Curb, Thoroughpin, Splint, Shoe Boil, Windpuff, Injured Tendons or other disease, a perfect and permanent cure is guaranteed, no scar or loss of hair. Horse works as usual. 16 YEARS A SUCCESS.

WE Originated the Plan of—Treating Horses—Under Signed Contract to Return Money if Remedy Fails. But write, describing your case, and we will send our—BOOK—sample contract, letters from Breeders and business men the world over, on every kind of case, and advice—all free (to horse owners and managers).

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Keep stock in disease-resisting condition. **Pratt's Animal Regulator** is the world's best conditioner. 25c, 50c, \$1. PRATTS HEAVE CURE is absolutely dependable. 50c, \$1.

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give your cows full freedom of movement. Keep them always comfortable, and make them more profitable. Made of tubular steel; may be hung in home-made frames. We also make a full line of Feed and Litter Carriers, Hay Tools and Barn Door Hangers. All LOUDEN equipments made under original patents and guaranteed. Write for free book.

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Remember **all calks are NOT Neverslips.**

There are many worthless imitations. All Genuine Neverslips Have RED TIPS. Without RED TIPS they are not Neverslips. Send to-day for Booklet Q telling about them.

THE NEVERSLIP MFG. CO., New Brunswick, N. J.

Am I Too Particular?

By R. E. Olds, Designer

Some men in this line call me an extremist. Some use the word "old-maidish."

They say that I waste \$200 per car on features that men don't appreciate.

These are some of those features. Do you, as a car buyer, regard these things as wasteful?

Tires 34 x 4

My latest extreme—adopted Oct. 1—is 34x4-inch tires.

That means 22 per cent greater tire capacity than I used on this car before.

It means a vastly over-tired car, for its size and weight, according to usual standards.

But tire makers say that 22 per cent will add 65 per cent to the average tire mileage. Does it seem extravagant to add 22 per cent to save you 65?

190 Drop Forgings

Another extreme lies in costly drop forgings. In Reo the Fifth as made today I use 190.

But each one gives both lightness and strength to some important part. Together they give me these racy lines, with even more strength than heavy, cumbersome cars.

The cost comes back to you, over and over, in the saving on tires.

Roller Bearings

Another useless expense, so some men say, lies in these roller bearings. What buyer sees the bearings?

But I have found that ball bearings do not stand the strain. So I have thrown them out. In Reo the Fifth I use 15 roller bearings—11 of them Timken, 4 Hyatt High Duty.

Over-Capacity

Each driving part, by actual test, is made amply sufficient for 45 horsepower. That gives a big margin of safety.

My springs are made two inches wide, and of seven leaves of steel. The front springs are 38 inches long, the rear are 46. That means both strength and comfort.

In my cooling system I use a centrifugal pump, to give positive circulation. Some say a syphon will do.

My carburetor is doubly heated—with hot air and hot water—to save the troubles due to low-grade gasoline.

I use a \$75 magneto, to give a hot spark at low tension. You can start on this magneto.

I use 14-inch brake drums for safety. Also cable connections, not noisy rods.

Extreme Tests

Each lot of steel is analyzed twice, before and after treating. So there's never a weakness here.

Each gear tooth must stand 75,000 pounds, and prove it in a crushing machine.

Each engine is tested 20 hours on blocks, and 28 hours in the chassis. There are five long-continued tests.

The cars are built slowly and carefully. Parts are ground over and over—ground to utter exactness. Each car gets a thousand inspections.

I limit my output to 50 cars daily, so these things can all be done.

Rare Finish

I use a special, costly body, because it saves you 50 pounds in weight. And it takes a wonderful finish. Each body is finished with 17 coats.

I use the best genuine leather and the best curled hair—also springs in both the backs and

seats—to give you this comfortable upholstery.

Every detail shows the final touch. Even the engine is nickel trimmed.

Center Control

As for center control and left-side drive, you will note that the best cars for next year have come to them. But no control compares with mine, where all the gear shifting is done by moving a handle only three inches in each of four directions.

I operate both brakes by foot pedals, so the front of the car is kept entirely clear. Those are some of the features which I have contributed to the modern motor car.

After 60,000 Cars

In 25 years I have built some 60,000 cars. I have created in that time 24 models, each better than the last.

I have watched these cars under every condition, and I've watched other makers' cars. I know pretty well, after 25 years, where cars fail to meet the test.

No builder can be over-cautious. One can't build cars too well. And petty skimping is what leads to trouble.

It is true I might save \$200 per car. But in time I should lose that

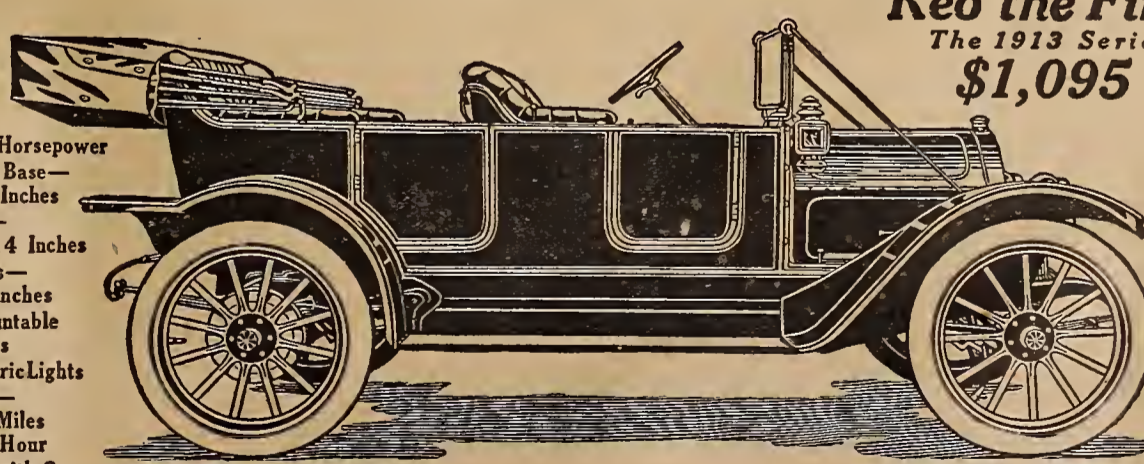
splendid faith which men now show in me.

And you would lose—two, three, maybe ten times over—all you saved on price.

So I offer you only the best car I can build. And I offer the car at an underprice, so my extremes cost you little.

I know that enough men want cars like this to take all I can ever make.

A thousand dealers now are ready to show the Fall model of Reo the Fifth. Write for our catalog, showing various bodies, and we'll direct you to the nearest Reo salesroom.



Reo the Fifth
The 1913 Series
\$1,095

30-35 Horsepower
Wheel Base—
112 Inches
Tires—
34 x 4 Inches
Wheels—
34 Inches
Demountable
Rims
3 Electric Lights
Speed—
45 Miles
per Hour
Made with 2
and 5 Passenger
Bodies

Top and windshield not included in price. We equip this car with mohair top, side curtains and slip cover, windshield, gas tank for headlights, speedometer and self-starter—all for \$100 extra.

R. M. Owen & Co. General Sales Agents for **Reo Motor Car Co., Lansing, Mich.**

Canadian Factory, St. Catharines, Ont.

Roof Your Building With Edwards "REO" STEEL Shingles



No Freight! No Repairs! No Painting!
No Labor Cost! No Extras of Any Kind!
Write for Low Prices!

A genuine "REO" Steel Shingle roof at the bare cost of factory making, plus one small profit! Send roof dimensions and get low price on completed job. You will be amazed at how cheaply, easily and quickly you can have a No. 1 roof.

Outwear Four Ordinary Roofs

Edwards "REO" Steel Shingles far outwear best cedar shingles, corrugated iron or composition paper roofing. The Edwards "Tightcote" process of galvanizing and the Edwards Interlocking Device do the trick. They multiply the life of a roof by four. And remember, no freight to pay, no extra materials to buy, no workmen to hire, no tools to borrow. Just nail "REO" Shingles on yourself with a hammer—right over sheathing or old roof.

Our \$10,000 Guarantee Against Lightning
Edwards "REO" Steel Shingles are not only rust-proof, rot-proof and weather-proof, but are also fire-proof. You can get a signed guarantee against loss by lightning backed by \$10,000 bond. We also guarantee safe, prompt deliveries any place in the U. S.

Postal Brings Catalog and Factory Prices
Don't buy roofing material of ANY kind till you've had our Factory Prices and Catalog, which explains our famous "Tightcote" Process. A postal brings all. Give roof dimensions if you can. But if you can't, send postal anyway for Prices and Catalog No. 1053. (84)
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Test this Hay Press FREE 10 days

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with 60-inch feed hole can bale 2½ tons an hour or it is yours free.
Would such a baler interest you?
Write today for FREE Catalog.
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BOYS! GET THIS AIR-RIFLE

Without Spending One Cent

The Daisy Air-Rifle is a repeater. It shoots 350 times without reloading. It is strong, durable and shoots accurately. It cultivates evenness of sight and evenness of nerve. This rifle is harmless. It uses no powder—just air. Air is plentiful and shot costs but 10c for 1,000.

These fine air-rifles are provided with pistol-grip, true sights, and are strongly made. Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle.

BOYS
Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.
Write to-day. Address
FARM AND FIRESIDE
Springfield, Ohio

for the sheep until lambing-time. Whenever the ewes can be allowed to run in the yard, it is good for them. As a rule, it is impossible to give them too much air. A sheep-harn need not be an expensive structure, should have a tight and durable roof; but if not so warm and closely built as a dairy barn, the stock will not suffer. Protection from the wind may often be secured with little trouble and expense. Make the stable deep enough so that the stock may be bedded loosely until spring, and the amount and quality of the manure will surprise you.
HERBERT R. LEE.

EDITOR'S NOTE—Mr. Lee is a Massachusetts farmer who is very successful with sheep, keeping them in the modern manner so that he is not wholly dependent on the price of wool. He is a leader in sheep-keeping. Mr. Lee's specialty is winter lambs. He began some years ago with a few and with the intention of keeping sheep in a new way so they would pay and obviate the necessity of keeping a dairy herd with its attendant need of numerous hired hands. Sheep cause but little running on the road and will live on rough land and improve it. He began with 200 acres and a big mortgage, and has paid off the latter and also paid for 350 acres more land. He proves that sheep kept right make a man and a farm prosperous.

Half-bred cows give half-pails of milk.

Chickens that go home to roost ought to stay home to scratch.

Pumpkins may not be very rich in food value, but steers seem to eat them with the same sort of relish that darkies have for watermelons.

Monday-Morning Sickness

THE technical name of this disease is "lymphangitis" (inflammation of the lymphatic vessels) and it is one of those troublesome ailments which may be absolutely prevented by proper feeding and management of the horse. It comes from over-feeding with rich feed during times of idleness. The horse that has been perfectly well during the work-days of the week and on Saturday night is, on Sunday or some holiday, given his usual feed of corn and oats and hay, but is not taken out for exercise. On work-days the nutriment of the ration are used up in labor. They go to repair waste tissue, generate force and heat the body. During idleness sweating ceases, and the muscles are not exercised; maximum nutrition, therefore, is unnecessary. The surplus usually utilized by combustion during exercise overloads the lymphatics during idleness, and they become distended, inflamed and painful. When this occurs, a high fever results, and the horse stops eating, breathes fast and may sweat profusely; one hind leg commences to swell in the region of the groin, and if the inner surface of the leg is handled, such pain is caused that the horse lifts the leg and shows every symptom of intense suffering. He is found in this condition on Monday morning, after the Sunday's rest; hence the popular name of the disease. Gradually the swelling descends until the entire leg is immensely enlarged, and such is the pressure of the serum distending the tissues that it may ooze through the skin. One attack subjects the horse to the likelihood of successive attacks, brought on in like manner to the first. After several attacks, the leg remains permanently enlarged, particularly in the region of the fetlock, and this condition is termed "elephantiasis" or "elephant leg." No horse need suffer so. No horse ever should stand a single day idle in the stable. When there is no work to be done, turn the horse out in the yard or on grass, or give walking exercise several times a day, and at the same time withhold all rich feed, and substitute bran, roots, grass or silage and hay. A tablespoonful of saltpeter dissolved in the drinking-water or fed in a bran-mash once a day will prove beneficial at this time; but it should not be given more than two or three times. Were these simple instructions religiously followed, there would be no attacks of lymphangitis. When a case occurs, bandage the leg from foot to body with a soft hay or straw rope, and saturate it with hot or cold water. Put on more rope as the wet part sags downward. Use cold water in summer and hot in winter.

Blanket the horse. Allow him all the cold water he cares to drink. Feed bran-mashes and hay. Dissolve two drams of saltpeter in the drinking-water or mash three times a day, and give alternate seven-drop doses of tincture of aconite and fluid extract of belladonna-leaves in a little water every three or four hours until pain and fever subside. Then the leg should be well hand-rubbed two or three times a day, snugly bandaged and walking exercise enforced. In complications and severe attacks veterinary skill should be employed.
A. S. ALEXANDER.

A Real Country Fair

AFTER having been discontinued for just twenty-five years, the Dutchess County Fair was revived this year at the old fair-grounds at Washington Hollow, in Dutchess County, New York.

Washington Hollow is a hamlet on the State road from Poughkeepsie to the Berkshire Hills of Massachusetts, and is some miles away from any railroad station.

The fair this year was planned to be a genuine county fair, and as such it differed in many respects from the county fairs as held at Poughkeepsie for the last twenty-five years.

The record crowds that came for miles in automobiles and wagons to Washington Hollow represented the prosperous rural communities, rather than the mere sight-seeing, excitement-hunting population of the city. There was an absence of disorder, because there were no vulgar shows to attract the disorderly element.

Here the farmers entered in friendly competition in the various departments, with an enthusiasm that is sadly absent where the professional exhibitor holds sway, as is the case at many of the county fairs. There were many who had never competed at a fair before, and the quality of their exhibits was of a surprisingly high order. The various classes in horses, cattle, etc., were well filled; indeed, some of the classes were twice as large as they were in Poughkeepsie the year before.

It has often been claimed that without the professional exhibitor a fair cannot be expected to succeed. By professional exhibitor is meant a person who buys up, at fairs, the prize-winning exhibits of others, usually non-professionals, which he takes from fair to fair and shows as his own. A few professionals of this type can easily dominate their respective departments at all the fairs which they visit, and they are in a position to take the bulk of the prize-money. Wherever such conditions prevail there is no incentive for the small grower or exhibitor to enter the competition. As a matter of common knowledge, the non-professional exhibitor has almost disappeared from many of the county fairs. Is it any wonder that the exhibits of farm products are comparatively deserted in favor of the side-shows?

The management of the Washington Hollow Fair this year had the courage to make a rule which practically barred the professional exhibitor from competing for the money prizes. The result has proved the wisdom of this course. As an example, in the fruit department the rule was established that all fruit entered for money prizes must have been grown by the exhibitor. The prediction was immediately made that there would be no exhibit in fruit. As a matter of fact, the fruit exhibit at the fair was one of the very finest seen in our neighborhood for a long time, and, further, out of the many exhibitors, only three had ever shown at a fair before. The department of commercially packed fruit in boxes and barrels was especially noteworthy. But the most interesting thing in this connection was the unmistakable enthusiasm of the exhibitors and their friends, who crowded the tables all day, studying the strong points of the successful competitors' exhibits. Those who have followed this experiment this year are convinced that if this wise policy is continued in the future the display of fruit next year will be multiplied many times.

Among other features of the fair that proved very popular and more than compensated for the absence of the side-shows was the Farm Boys' Camp. Two boys from each town of the county were entertained in camp at the expense of the fair committee for three days. The boys were housed in eight tents, and the camp was complete in every respect, mess-tent and camp-fire included. There was still another camp for Boy Scouts, who held contests every day. Further, there were athletic contests, baseball and other outdoor games, old and new.

Of course, the fine track and liberal purses attracted many to enter the trotting and running races, without which no farmers' meet would be complete. The horse-show alone comprised more than one hundred and fifty entries.

There were many other features of special interest to the farmer, his wife and the children. All in all, the expectation of those who so carefully planned this fair have been fully realized, and it is gratifying indeed to learn that while the fair has been interesting, educational and clean it has at the same time been successful financially.
E. O. MUESER.

Expert Treatment Often Needed

A MARYLAND reader whose horse was cut with a plow about two months ago writes, saying: "The cut is on the horse's left hind leg, about twelve inches from the hoof. One leader was cut in two and the other one partly cut. It bled a good deal, and it swells and pains her. She has a good appetite, but is falling off some. She won't let us rub her leg, but we use a spray pump to wash it. For a wash we use a carbolic lotion, and am using hydrogen peroxide on it now, also burnt alum to keep down the proud flesh. The wound is now as large as the palm of the hand."

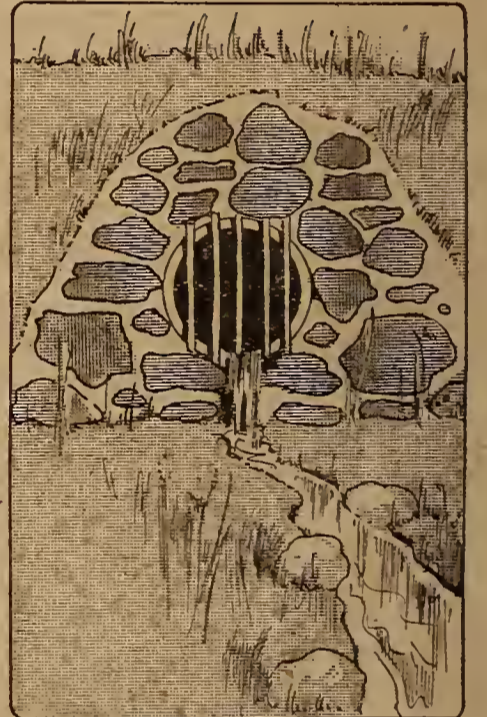
It will be necessary to use a twitch to make the horse stand quiet, and may also be necessary to have one fore foot held up while treatment is being given.

Cleanse the wound, and cut away the hair from about the part. Rub the wound lightly with a lunar-caustic pencil to cut down excessive growth of new tissue (proud flesh). Then cover the wound with a mixture of one part, each, of tannic acid and powdered alum and six parts of boric acid, absorbent cotton and bandages. Do not use the caustic again, but once daily renew the dressing of powder, cotton and bandage. The caustic may be used again if the wound is seen to be forming too much new tissue.

We can offer little promise of success, as the case is a bad one and should have had expert treatment from the first.
A. S. ALEXANDER.

Protecting the Outlet

WHEN stock tramp around tile-drains, they often get the outlets in very bad condition. In fact, sometimes the outlets get stopped up so tight that the water will come up in the field, thus ruining your ditch for the time being and making it useless.



The tile, the fall and the outlet are to the tile-drain what a head, legs and tail are to a horse. The principal parts, you understand.

We have used several kinds of outlets. The most satisfactory one of them all is the cement outlet. We have used this with the soft tile such as we put in the main ditch. However, one or two sewer-tile of the same diameter might do better, as they do not crumble from the action of the frost.

An outlet can be made wholly of concrete, but to save time and cement and to get rid of some of our boulders we use boulders and cement, laying them up around the tile as one would brick or stone, not forgetting to put some under the bottom of the tile to make a good foundation. This makes a neat job that lasts well. It is well worth the time and money. If an iron grate is fastened over the tile and into the concrete, nothing will ever get into your tile and stop it up. In fact, wire can be used if you have no iron grate.
OMER R. ABRAHAM.

Work the Mare

"A SPIRITED mare which I recently bought is very high-strung and wants to go so fast that we cannot plow with her. I cultivate only a small acreage in truck. Am afraid I can't work her down to a slow gait." So writes a South Carolina reader.

You do not state the breed of your mare. If she is warm-blooded—that is, of trotting or thorough blood—it is doubtful whether it will be worth your while to attempt much slow and heavy work with her. If, on the other hand, she is of draft breeding, there should be no trouble with her. Feed no oats for a month or so, but feed corn instead. Be very gentle with her, and give her plenty to do. These rules, simple as they sound, if intelligently carried out, will certainly effect a cure, but you must remember that considerable time and a good deal of patience will be necessary.
DAVID BUFFUM.

FUNSTEN PAYS CASH FOR FURS!

We Want Ten Million Dollars' Worth of Furs

Biggest Prices! Better Grading! Most Money by Return Mail!

These are the advantages you have in sending your furs to Funsten. We are the largest in the world in our line. The biggest American, Canadian and European buyers are represented at our regular sales. Competition for Funsten Furs is greatest. As we sell furs in larger quantities and get more spot cash, we can pay you more cash for yours than you can get anywhere. We count on large volume of business and small margin of profit. No traveling buyers—do all our business direct with you. We want ten million dollars' worth of furs. We want your shipments, anything—from one skin up.

Big Money in Trapping Do trapping during spare time. It's good sport and pays big. Mink, coon, skunk, muskrat, fox, wolf, lynx, white weasel and all kinds of furs are valuable.

Traps To accommodate trappers and shippers we furnish traps, including the famous VICTOR, at factory cost. Largest stock in U. S.

Funsten Animal Bait Guaranteed to increase your catch or money back. Beware of imitations. Funsten Animal Bait won Grand Prize at World's Fair in 1904. U. S. Government uses Funsten Bait. One can of Funsten Animal Bait brought one man in St. Michaels, Alaska, \$1,199 clear profit. Costs only \$1 a can. Different kinds for different animals. Whether you are an experienced trapper or just a beginner, we can help you catch more furs—make more money. Write today for free Trapper's Guide, Game Laws and Trapper's Supply Catalog—three books in one—Fur Market Reports, Funsten Safety Fur Shipping Tags, etc. ALL FREE. (32)

Funsten Bros. & Co., 136 Funsten Building, St. Louis, Mo.

TRAPPER'S GUIDE FREE

LARGEST IN THE WORLD

Poultry-Raising

Caponizing Cockerels

YEARS ago I was told that it paid to caponize cockerels and that anybody could do the work. As I considered myself somebody and was desirous of getting all I could out of my surplus market cockerels, I invested in a set of tools and set to work to do the job. Well, I did it or thought I did, though nobody knows the nerve force I exhausted, killing but one of the sixty-seven in the operation. But later I discovered that the reason I did not kill more was because I did the work too easy, making as many "slips" as capons. I soon discovered that it was not child's work, but a real surgical operation and one that is accompanied with more or less difficulty and danger. I made sure, however, that there would be no visitors to tell the tale in case I failed, by selecting a secluded spot for the work and keeping my business strictly to myself. Most of the cockerels operated on were a cross between the Barred Rock and Cornish Indian, some a cross of Brahma and Cornish. Those which turned out to be genuine capons grew very large and fleshy. The "slips" did not grow so large and were as much of a torment as genuine cockerels, though they were somewhat larger and plumper when sold. I first followed the instructions of operating between the last two ribs, but finding it so difficult and hard to make an opening there and insert the spreader so that I could operate successfully, I finally hit upon a better way of my own, and as I did not put it in book form to be sold at one dollar per, I will give it here for the benefit of those who may be contemplating this work. I first made an opening in the skin, then pressed back the flesh or thigh muscle and made an opening right back of the last rib. By doing so the spreader is easier inserted, and one can see



The necessity for care must be emphasized

better and operate easier, at least I could. Not only this, but after the work is done and the spreader removed, the thigh muscle slips back over the wound, thus completely covering it. I never had a case of wind-puffs or any other trouble after operating in this way, nor so many "slips," though in some cases it is almost necessary for even the experienced person to make a "slip" or kill a cockerel, while an inexperienced person is likely to make more "slips" than capons. Where it is possible, therefore, to hire an experienced hand to do the work, I believe it would be cheaper to employ him. I would not discourage anyone who is contemplating taking up this work, but wish to impress upon the minds of the inexperienced that it is nothing short of a surgical operation, and the main requisites are a good set of tools and plenty of nerve and staying qualities. Mrs. Wm. Hardy.

The act of caponizing is truly a surgical operation, and while not an extremely difficult one, owing to the wonderful construction of the average bird, it must be carefully done, if success is obtained.

The two testes of the male chicken that are removed by this operation are located close to the back, in line with the last two ribs. Personally, I have always felt that it was easier to cut between these last two ribs, but in all such lines of work each operator will find that it is easier to do some things in the way most convenient to himself. Therefore, Mrs. Hardy could probably do her most effective work by varying from the usual rule of operation and working to suit her own convenience.

If the bird is very empty of intestines before the operation, as he should be, the testes can be easily seen, if the incision is made anywhere near their location.

The ease of using the spreader depends a good deal on the tool. A good one can be used any place.

Two things must be carefully noted when caponizing. First, care must be taken not to rupture any blood-vessels that lie close to the back near the testes. Second, remove all of the organ when operating. If the slightest particle is left inside, the bird will develop into a "slip," and be of little account. For the average person, it is easiest to remove one seed from each side, but sometimes both can be removed from one opening. If so, it is best to remove the bottom one first.

Caponizing can be successfully carried on by the average person who is interested enough to work carefully. Fowls are so constituted that they seldom suffer or become infected from the operation, and thus can stand a lot of abuse. Experience in this work, as in everything else, makes the work quicker and easier and the results better.

Good tools are expensive, and a person does waste time in learning, so if an expert is available at a reasonable price it may pay to hire him rather than try to learn. However, everybody likes to try such things for themselves, and since it is simple and experience will make it easy, there is no reason why anybody should not be willing to use a little energy in learning.

Remember, however, to study the problem and experiment on a dead bird before any real work is attempted. There is much more to be known than is stated in the above few words.

A. G. PHILLIPS,
Indiana College of Agriculture.

Poisoned Chickens

"I BOUGHT 104 Buff Leghorn hens," says one Ohio reader, "and after getting them home I discovered they had lice. I penned them and dipped all of them with a patent preparation, according to directions, and they never acted right after that. The corn I fed was poor, and since then they have been dying, one or two at a time. They sit around and sleep most of the time."

The "medicine" you dipped your chickens in poisoned them. It would have been better for them if you had stripped them of feathers. They would have recovered much quicker. Most of the dope sold as lice-killers, roup-cures, etc., are rank poisons and do ten times more harm than good. A good dust-bath with just a little sprinkle of air-slaked lime in it would have enabled your hens to rid themselves of lice. I don't know how you can rid them of that miserable poison. But I would shear their wings and tails off, and most of the under feathers. Shear the wings and tails closely, and about half of the under feathers. Do not cut the back feathers; they need them as a protection from the sun. Some of the birds will not recover from the poison, but with care and good food most of them should. I would give those that look real sick a quarter grain of quinine about every two days until they brace up. It is the best tonic you can give them. Then I would feed a dry mixture: corn-meal, ten pounds, wheat-middlings, ten pounds; wheat-bran, five pounds. Keep that before them all the time. About two pounds of good beef-scrap or blood-meal added to the above quantity will improve it much. Feed this mixture until they entirely recover, and be sure they have plenty of good water and grit where they can help themselves all the time. Be sure to burn or bury all that die. Keep the interior of their house clean.

Poultry-raisers should carefully avoid all poultry medicines, lice-dips, food tonics, etc. Nearly all of them are not worth the paper they are wrapped in, and most of them are positively injurious to fowls. Good care and good food are infinitely superior to any sort of dope you can buy. FRED GRUNDY.

Why Hens Lay in Winter

THE first requisite in securing eggs in winter is properly bred stock. Select some standard breed known to be good egg-producers, mark with a toe-punch the females that lay during the cold months. Select for the breeding-pen males and females whose ancestors have produced results in the winter.

The second requisite is proper rearing of the chickens. Hatch under hens during April or May, according to the breed. Give each mother a dozen chickens in a coop by herself. Feed five times daily for the first four weeks. Indian meal mixed with skim-milk, or most any reliable chick-feed, answers the purpose. Feed four times daily until the chicks are eight weeks old. Keep them free from lice. Fresh water supplied three times daily, grit, charcoal and unlimited range where there is plenty of grass, bugs and shade are all necessary.

By the time the chicks are six or eight weeks old they will have been weaned. Now they should be removed to colony houses built five or six feet square, with shed roof five feet in height in front and three feet in the rear. The front should be left open and covered with inch-mesh wire netting, having one-half the door covered with the same. The floor should be covered with dry litter to the depth of a foot. In a house of this size put twenty-five chicks. Feed a mash of one part corn-meal, one part mixed feed, for breakfast; wheat, barley or oats for noon feed; cracked corn at night. Give them all they will pick up clean. Do not have the colony houses less than twenty rods apart. Have them facing the south. Have roof, sides and back covered with a good roofing-paper. Thus drafts are prevented. Keep the water on the shady side of the house. Clean the houses once a week, and put in a fresh supply of bedding. As soon as possible, separate the males from the females, putting them into houses by themselves. Keep the chickens growing, and when it is time to put them into winter quarters, they will have attained

a vigor and development that are not excelled by any other method, and will stand the rigors of a severe climate and produce results so much sought after in the egg-basket.

The third requisite is the proper winter quarters. A house built on the scratching-shed plan has always brought the best results to me. One may build a ten-foot section with open front for shed, then a twenty-foot section for a house. This may be divided into ten-foot sections by a wire partition, then a twenty-foot section with open front may be added, and so on until as long a building as one desires is completed. The idea is that each one hundred feet of floor space in the closed building shall have one hundred feet in the open shed. Each twenty-foot section of the closed building shall be provided with four half-windows, and these should be raised an inch or two for ventilation. Never close the building perfectly tight, for this is the quickest way to bring on colds.

Remove the pullets into the winter quarters before the cold rains come in the latter part of October. Never put more than twenty-five together in one flock, keeping the same flocks together as in the colony houses as much as possible. Allow five to eight square feet of floor space to each fowl.

Provide an abundance of straw, meadow-hay or corn-husks for scratching-material in the sheds, and here scatter the whole grain so that the pullets will have to scratch for everything they get to eat. Renew this every two or three weeks, because it will be soon reduced to chaff and dust. Allow the pullets access to these sheds as soon as the sun rises in the morning and every day through the winter, except in the most severe weather.

Feed a mash at sunrise composed of one part meal and two parts mixed feed, with a pint of beef-scraps or meat-meal to every twenty-five hens. This mash should be mixed up with warm skim-milk. Feed all they will eat up quickly. Scatter a pint of oats in the litter of each shed so the pullets will be kept busy until the sun gets higher. At noon feed one part wheat and one part oats, and scatter in the litter, and at night whole or cracked corn. The best rule, in feeding all kinds of grain, is to feed all



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"A new servant girl told me about Postum—said her folks used it and liked it in place of coffee. We got a package but I told her I did not believe my husband would like it, as he was a great coffee drinker.

"To my surprise he called for a third cup, said it was 'good stuff' and wanted to know what it was. We have used Postum ever since and both feel better than we have in years.

"My husband used to have bad spells with his stomach and would be sick three or four days, during which time he could not eat or drink anything. But since he gave up coffee and took to Postum, he has had no more trouble, and we now fully believe it was all caused by coffee.

"I have not had any return of my former troubles since drinking Postum, and feel better and can do more work than in the last ten years. We tell everybody about it—some say they tried it and did not like it. I tell them it makes all the difference as to how it's made. It should be made according to directions—then it is delicious."

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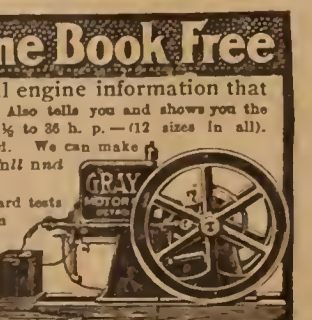
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they will pick up without leaving any in sight. Once daily feed a quart of cut clover or alfalfa to every twenty-five hens. If clover or alfalfa cannot be provided, have a cabbage-head suspended by a string a foot or more from the floor. In the coldest weather supply warm water three times daily.

During the middle of the warm days open one of the doors in all the closed buildings, that they may be thoroughly aired and dried out. With plenty of food, exercise, fresh air and fresh water, the best results will be obtained.

Of course, it is expected the caretaker will use his best judgment in caring for the hens and keeping the houses clean and healthful.

Winter egg-production should be no longer a problem. The extra pains and care involved will be more than amply rewarded by the fancy prices received for eggs during the winter months. A. G. SYMONDS.

Poultry on a City Lot

IT IS only in the last few years that the attention of a large number of people has been turned toward the possibilities of poultry culture. The poultry press is full to overflowing of the advice of poultrymen as to what "may be done," but we rarely meet with an article based on facts and what has actually been accomplished.

Poultry-raising appeals to everyone who loves to be in the open—from the farmer to the city banker. Poultry is successfully raised in city and country. The city poultryman has the advantage by having a good and steady market the year around.

Two years ago I knew absolutely nothing about poultry. I did not even have a fair idea as to what a chicken should be fed. During February, 1911, I was searching for something to read one stormy day when I found a copy of an old paper-covered book on poultry culture. I was interested, and read more and more, until I found myself afflicted with a disease called "chicken fever." From this time on I sought for all the poultry literature I could find, and it was in this way that my "disease" was "cinched" for all time.

I found the next stage of the disease to be, after reading all I could, a desire to own and raise poultry. I found that the only space available for my scheme was a small plot of ground fifty-seven by twenty-seven feet. I was anxious, as all beginners are, to "raise as many as possible," so I determined to try a system where every available foot of space could be used.

I purchased a "system" book from the originator of the intensive system of poultry-raising and commenced to construct my coops. I did not like the way this gentleman built his coops, so I changed their construction to suit myself. I purchased an incubator about the first of March and set one hundred eggs. I made an arrangement with a friend in which he was to furnish the eggs for the incubator, and I was to receive half of the chicks hatched. I think the bargain was on my side, for the eggs came from thoroughbred stock.

Everything is against the beginner, and I had my full share of ill luck. All went well until the evening of the nineteenth day, when a cold wind came up from the north and so cooled the atmosphere that the temperature in the incubator fell to ninety degrees. I do not know how long it remained at that point, but it took several hours before it was back to the correct temperature. I was discouraged and thought it was no use to finish the hatch. But imagine my surprise and joy when I hatched a little better than sixty per cent of the eggs set! That was not so bad for one who had never seen an incubator until he purchased one! By this time I had a brooder coop ready for the little chicks. How proud I was of them!

I gave them the best of care, and when they were three weeks old it was hard to convince visitors that they were not older.

The most critical period of poultry-raising after the chicks are hatched is for the first three weeks after incubation. If the chicks are properly fed and cared for, they are almost half raised. By making notes in my own experience, I have found that twenty-

five per cent. more of the chicks die during the first three weeks of their lives than at any other time.

Baby chicks, when first hatched, are like little children. They have a fair idea as to what they should eat, but if anything happens to be handy and looks as if it would make good eating, they immediately eat it. Here is where the beginner has to be careful. He has to use judgment in the selection of feed. The chick is easily subjected to the results of bad feed, and death usually results.

Many successful poultrymen advise the use of sand on the brooder floors. Last season I tried everything and found cut clover or alfalfa to make the best litter for baby chicks. It is a well-known fact that the fowls consume a large amount of their litter, and for this reason the poultryman should see to it that the litter is of material easily digested. Dry leaves make good litter, but cannot be digested.

Another problem that almost proved my ruin was that of rats. I successively tried a trap, poison, in fact every remedy I knew of, but without success. One day the thought came to me that a rat loves darkness. He is never found where there is plenty of light. I had solved the problem! Accordingly, I placed a brick under each end of each coop, and to this day I have never seen another rat on the place. Lice were also hard to combat, but by keeping everything clean with an occasional application of liquid louse-killer I had no trouble.

It is absolutely necessary that everything be kept clean and sanitary. There is nothing that promotes disease as quickly as unsanitary conditions in the poultry-yard.

Looking over my account for the last year, I find the following:

EXPENSES		RECEIPTS	
Sept., 1911.....	\$5.25	Sept., 1911....	\$7.50
Oct.	2.60	Oct.	6.10
Nov.	2.55	Nov.	5.37
Dec.	5.55	Dec.	6.51
Jan., 1912....	2.90	Jan., 1912....	4.82
Feb. ....	.95	Feb.	9.15
Mar.	1.35	Mar.	20.01
Apr.	4.95	Apr.	9.50
May	5.20	May	6.42
June	3.15	June	2.31
July	4.12	July	4.26
August	1.16	August	12.34
Total	\$39.73	Total	\$94.29
			39.73
		Total profit	\$54.56

I still have on hand lumber, appliances, stock, etc., to the value of \$40. All this represents one year's work on a small city lot. Hundreds of others have made better success than I have. CHESLA SHERLOCK.

Many mickles make a muckle, but many littlenesses never mount up to greatness.

True Indian Runners

THE Indian Runner duck has come to stay. At the New York State Fair, held at Syracuse in September, eastern poultrymen, having full confidence in the future of the true Runners, organized the White Egg Indian Runner Club. The officers of the Club include Canadian representatives as well as those from different sections of the United States. One eighth of the enrolled membership is Canadian. The president of the club is C. S. Valentine, Ridgewood, New Jersey; vice-president, Mrs. Andrew Brooks, Anburn, New York; secretary and treasurer, C. K. Vanderbilt, Lyons, New York. The membership fee is one dollar, and annual dues one dollar. This club will exert its organized influence to perpetuate the true Indian Runner type.

A Ten-Cent Trap-Nest

THE trap-nest shown herewith can be built for ten cents in lots of six or more. The materials required are six cracker-boxes costing five cents each, thirty cents; six hooks, ten cents; six pairs hinges, with screws, fifteen cents; one pound three-penny nails (1½ inch), five cents. Total, sixty cents.

To make the nest, carefully remove a part of the top of the box and also one end, except a 2-inch strip at the top and bottom. Then saw some strips 2 inches wide from a ¾-inch board, and nail one on each side of the box upright 10½ inches from the front, and another across the tops of the two uprights. In the center of this screw a hook.

Next saw a 2-inch strip long enough to go across the top of the front end inside the nest; also a piece ¾ by 8 inches square. The latter is the door and is to be hinged to the 2-inch strip at the top of the front end, so it will swing inside the nest. In the lower edge of the

Preparing Leghorns for Show

IN GROWING and preparing White Leghorns for show purposes the main thing is to get the necessary weight. Of course, you must have good birds; but many a good bird has been beaten because of lack of sufficient weight. Feed birds well, right from the start, keeping the food in suitable feeding-boxes where it will be clean and where they can obtain all they want at any time. Leghorns are naturally an active breed and need lots of exercise to develop size, shape and good feathers.

A good growing food is corn-meal, two quarts; hulled oats, two quarts; wheat-middlings, two quarts; wheat-bran, one quart. To each two gallons of the above add a half-pint of beef-meal or beef-scrap and a half-pint of granulated bone. Mix all together, and keep in good feeders where they can help themselves at all times. Have plenty of clean water close by. Twice a week mix as much of the above feed to a thick mush with milk as they will clean up in a few minutes. This helps growth.

Leghorn pullets are in their prime just before they begin to lay. After they begin laying, the feathers soon lose their smooth, shiny appearance, and the birds their finest exhibition shape. The cockerels hold their exhibition shape and luster much longer than the pullets, especially if they are kept by themselves. If the pullets begin to show signs of laying before the show occurs, they may be held back some by placing them in a clean house that is rather dark and feeding corn-meal, one quart; middlings, one quart, and bran, two quarts, mixed, and all the green stuff, such as cabbage, rape or clover, that they want. About two weeks before the show begin to handle them and pet them so they will become quite tame. It is a good idea to keep them in small coops a few days before the show and pet and handle them as much as possible so they will stand right up and avoid that squatting appearance they assume when afraid. Send them to the show perfectly clean.

FRED GRUNDY.

No matter how straight the road may be, some are sure to get lost on it.

The lucky man is the one who has pluck enough to turn bad luck into good.

Cure for Limber-Neck

THE disease commonly called limber-neck causes the poultry-raisers enormous losses annually. The disease is caused by the fowls consuming some form of decaying animal matter. It is similar to ptomaine poison in individuals. The symptoms of the disease are as follows: The fowl's neck hangs limp, and the head falls to the ground and the feathers fall out, showing that the muscular and nervous system is poisoned. In treating fowls suffering with limber-neck we gave one-fourth teaspoonful of turpentine mixed with three-fourths teaspoonful of sweet-oil. Following this dose in thirty minutes with one-fourth teaspoonful of Epsom salts and in one hour with several teaspoonfuls of sweet milk, to which has been added, so as to make it hot and stimulating, ground ginger and mustard. In the severe cases it is beneficial to add five drops of the tincture of nux vomica to each one-half pint of milk. The sick fowls should be kept quiet and away from the rest of the flock, and should have cleanly surroundings with an abundance of fresh air. It is absolutely necessary to keep them free from lice. Limber-neck is more prevalent in the summer, and when a fowl is found in the flock suffering with it, the premises should be carefully searched for the cause, for the sick fowl is consuming the flesh of maggots or of some decaying animal. GEO. SIXEAS.

door is screwed a ring into which the hook at the top of the partition fastens.

A board is nailed at the bottom of the partition which will vary in width according to the size of the hens (4½ inches for Wyandottes). This board must be high enough, so that when the hen enters the back part or the nest proper she will raise the door sufficiently high to release the hook. The door then drops shut. Anyone desiring a practical trap-nest will find this to work very satisfactorily.

ARCHIE E. VANDERVORT.

EDITOR'S NOTE—To keep a very accurate record of the flock when it is a large one requires the use of the trap-nest. The egg-laying contests now being held in Connecticut and in Missouri employ the trap-nest for keeping track of the good layers. Not this trap-nest, but one which, likewise, is successful. The trap-nest may be used by the small poultry farmer. It is to the man with a few birds that this particular nest is most likely to appeal.

Crops and Soils

New Fertilizer Fields

THE Pacific Coast promises to become the greatest producer of potash of any section of the world. It is in growing beds instead of mines, and annual crops may be harvested. Surveys show that an area approximating one hundred square miles contains enough kelp, or seaweed, to give yearly harvests of one million tons, analyzing an average of twenty-five to forty per cent. potassium chloride.

Bladder-kelp is the variety that possesses so much fertilizer value, and is found, in groves or beds, in all the swift channels of Puget Sound and the Straits of Juan de Fuca, and then out along the Pacific Ocean shore down as far as Point Loma, in Southern California. The plant grows on rocks, at depths varying from six to twenty fathoms of salt water, and is known by the whip-stalk stems that float to the surface.

A single plant of kelp frequently weighs from twenty to thirty-five pounds, and, in some localities, it is claimed the plants stand as close as one to the square foot. While in the water they are magnificent bushes, with broad, leathery leaves resembling elephants' ears. The plants grow only in swift water, where the bottom is rocky, and are always in motion. They start from the rocks in March, mature during midsummer and cast off from the seed-beds before Christmas. Then the specimens float to the shore and decay.

Kelp has been used by farmers and gardeners, residing along the coast, for many years, with astonishing success, especially when applied to the native plants. The Japanese gardeners, who have used kelp for generations, say they would rather have it than any of the imported commercial fertilizers for producing fine fruits and flowers. They make use of the kelp in preparing articles of human food and in mixing with grain and hay to feed farm animals.

It is well known that our potash supply must be brought from the mines in Germany. According to the Secretary of Agriculture, there are about two million farms in the United States on which some form of fertilizer is used, and the cost of fertilizers to these farmers runs around \$115,000,000 every year. If the Pacific Coast can supply that amount of fertility, in dollars and cents, to the country, it will be a great industry, arising from the waters of the ocean. JOEL SHOMAKER.

Forest Becomes Farm

And the Work of Clearing Was All Done in Six Months

MY HUSBAND'S eyes failed him and we were forced by the doctor "to live in the open air." That is why we started to make a living on a poor worked-down farm in Montgomery County, Maryland. Suburban to Washington City, our taxes were high and labor higher. Much of the land was covered with small growth and trees, which we began to cut. We figured on the cost of a stump-puller, but found one of any value cost more than was available. "Necessity is the mother of invention," and my husband began to study some other means of doing the work.

We visited a hardware-store and purchased a triple block for \$2.50, a double block for \$1.50, three hundred feet of four-ply manila rope one inch in diameter and twenty-six feet of one and one-half-inch rope, the whole outfit costing about \$14. We cut the one and one-half-inch rope into two pieces of thirteen feet each, of which we made loops. We threaded the three hundred feet of rope into the blocks, wrapped one loop securely around the tree to be pulled and hitched the double block into the end. We wrapped the other loop around the base of some large tree used for anchor and attached to it the triple block, using a spreader. We then hitched the team of horses (oxen would have been better) to the end of the rope, placed a log at least a foot in diameter in front of the tree to be pulled, to raise the base of the tree so that the roots would be pulled out of the ground by the weight of the top of the tree as it fell over, as well as by the strength of the team. We started to pull with the team at the anchor block and drove the team toward the tree being pulled, driving parallel with the rope to prevent straining the blocks. No danger was experienced from the falling tree because the team always passed the tree being pulled before it fell. If large trees twelve or fourteen inches in diameter were to be pulled, we found it necessary to have a ladder and place the loop twenty feet from the ground. Occasionally it was necessary to cut the tap-root. Time would be gained by having three loops and three men, one man to drive the team, one man to fasten loop around the tree, while the other removed the loop, log and stump already pulled. In this way the team would be steadily at work. A circle of one hundred feet can be cleared from one anchor. We found this method a perfect success.

The beauty of it is that the work can be done when the ground is wet and men and teams are idle; though the pulling cannot be done when it is actually raining, as the ropes will not work when they get wet. When the trees and stumps are pulled, the ground is ready to plow and plant.

Winter before last we pulled twenty acres, planted corn in the spring, rye in the fall, and this past summer we had a beautiful stand of clover. Last winter we had a pine forest to clear. As the weather was so severe, we let the men cut the trees with the stumps four feet high, the length of cord-wood, cutting the remainder of the trees into cord-wood and burning the brush to keep warm. The thermometer was then around the zero mark. When the weather opened, we began pulling stumps, then cut off and split the lengths of cord-wood that had been left standing, burned the stumps in the steam-engine for fuel, and began to plow for and plant corn. We are getting a good crop of corn now.

We think this method a fine substitute for men at \$1.75 a day and superior to a stump-puller for pulling small growth, which can be pulled as fast as the loops can be adjusted. We pulled locust of one to two inches diameter with roots thirty feet long, and all were taken out. When pulling small trees, a chain should be used instead of a rope loop, as the chain does not slip. We have pulled a variety of trees—hickory, locust, poplar, maple, dogwood, persimmon, pine and oak. We can recommend this scheme to farmers as a satisfactory and economical method of cleaning land.

MRS. FRANK P. STONE.



When you plow, plow well

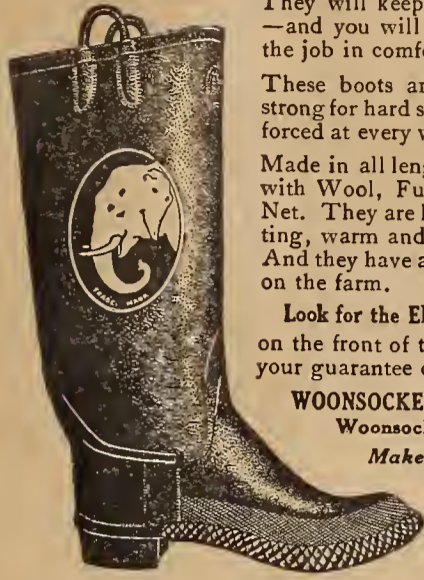
Beware of Vetch-Seed!

BUYING hairy-vetch seed at present through the commercial market channels is more of a gamble than most farmers can afford to indulge in. Federal department investigations show that the greater part of the hairy-vetch seed recently imported from Europe contains only fifteen to eighteen per cent. of hairy-vetch seed, the balance being spring vetch, not hardy in the Northern States, and various species of wild vetches. The hairy-vetch seed is spherical in form, larger and less irregular in shape than the spring variety and wild-vetch seed. The hairy-vetch seed when crushed shows a bright lemon color. Farmers' Bulletin No. 516, Department of Agriculture, Washington, D. C., treats in detail of vetch-seed and its production.

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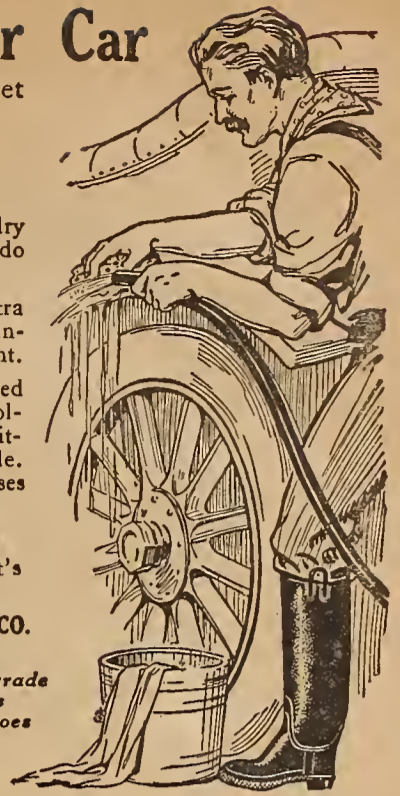
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Garden and Orchard

Sir Hubert's Adventures

He Tilts Against the Marketer of Unripe Apples

UNLIKE his prototype, Don Quixote, Sir Hubert found that the continuous seeking of adventures, even in so noble a cause as the defense of the Perfect Fruit, whose honor he had sworn always to defend, furnished insufficient wherewithal by which to feed and clothe himself and steed. For some days and weeks, therefore, armor and lance had been laid off. The charger's saddle had been replaced by gear for pulling a plow. Knight and horse had been performing the necessary duties of the practical orchardist.

But now, the crop harvested and the exchequer replenished, the vision of the Beautiful Tree began again to appear in the knight's dreams, urging him to renew his adventures afield.

One fine morning, before sunup, in late October the call came too strong to be resisted. The charger was saddled, armor buckled on, the famous shield bearing his coat of arms showing an ideal fruit-tree, which was given him at the beginning of his crusades by the Spirit of the Perfect Fruit, was slung on his left arm, and, having mounted, the well-tested lance was taken in his right hand.

Perceiving a motley array of wagons, motor-trucks and traction-engine-drawn drays, all loaded with barreled apples, proceeding at varying speeds along the highways, apparently headed for some common destiny, he set out at a leisurely pace in the same direction.

No adventure worthy of our knight promptly offered itself, and as the day warmed with the rise of the sun he began to feel ahungered. About the same time



there appeared, not far distant, the chimneys and roofs of the city toward which the loaded conveyances had been progressing. Putting spurs to his horse, he was soon threading his way through the streets of the city of the Ultimate Consumer. A pyramid of red apples on a fruit-stand caught his eye. Dismounting, he picked up three fine-looking specimens, tossed the owner a coin and mounted with the intention of enjoying the flavor of the fruit as he proceeded in his quest of real adventure. But immediately he had set tooth into a hard, tasteless, unripe apple anger arose in him, the justifiable anger of a knight dishonestly treated. Turning, he lowered his lance and again approached the fruit-stand with quickened pace. The owner thereof understood not the language with which Sir Hubert began to berate him, but he knew an angry knight when he saw one and delayed not to argue, but hastened with winged feet to his haven of safety, the store of the commission man from whom he had purchased.

Sir Hubert stopped only to spill with one fell swoop of his gloved fist the pyramid of offending fruit into the gutter and gave chase. The fruit-stand keeper had, however, too much start and darted into the store long before Sir Hubert could get near to him. As the knight approached the store, his trained horticultural eye detected something that made him forget the poor culprit whom he had intended to chastise. Genuine wrath welled up from within him and stiffened every fiber of his resolution. There on the pavement open to public gaze were barrel after barrel of apples identical in greenness and unfitness to those he had purchased, and backed up to the curb was one of the large trucks he had seen on the roadway that morning just ready to unload still more fruit, which, as indicated by the marks on the ends of the barrels, was just as hard and green and slanderous of the honor of the Perfect Fruit as the rest. Nowhere could he discover any variety of apples which could be mellow and ripe and honest at this season of the year.

Hastily dismounting, he threw the bridle rein over the end of the awning-pole and strode into the store. At the back of the room the fruit-stand owner was attempting to explain with much gesture and volubility the danger that had beset him, while the commission men listened with evident glee at such a good joke, so far as he was able to understand it. Both of them, however, with one common impulse, when they saw and heard bearing down upon them a booted and spurred knight in full armor wearing

across his breast a row of medals and badges of prominent horticultural societies, sneaked for the door of the inner office, slammed it shut behind them and bolted it fast. Sir Hubert was like to have attacked this door with his lance, when, turning, he espied at the entrance Mr. Apple Grower, whose load of fruit was backed up to the curb, and straightway accosted him, "Why have you brought those apples to this market?" Mr. Apple Grower, ignorant as yet of wrong-doing, stood his ground and replied, "To sell them." "They are not fit for market; they are green," shouted Sir Hubert. "What do I care if they are?" replied Mr. Apple Grower, also with some heat. "You shall care," announced the knight with determination, and, lowering his lance, made as if to thrust at him. Mr. Grower backed away, but could not escape because of being hemmed in by barrels on all sides. Seeing this enemy of the Perfect Fruit, to whom he had sworn fealty, thus captured, Sir Hubert continued, "Pick from that barrel at your hand three apples. Eat them." The grower was tempted to resist, but noting more carefully what manner of captor he had to deal with decided to comply.

Meantime Sir Hubert was near to have come to grief from the shower of hard apples which came pelting against his head and sides from the well-trained pitching arms of the crowd of youngsters, who had seen the upsetting of the apples at the fruit-stand and followed the knight thither with the intent of having sport with him. Their sport ended promptly, however, when a few ears had been well boxed by the group of housewives gathered to witness the encounter in the store. These housewives had come to see what was in the market, had recognized in Sir Hubert's concise statement a definite expression of their own disappointment about the apples they had so far purchased, and were staying to lend encouragement to so worthy a cause as this knight seemed to represent.

Mr. Grower had taken but a few bites of the unripe apples when he was again minded to resist, but Sir Hubert's attitude was menacing. Reluctantly, even distressingly, he swallowed bite after bite of apples that would not have been mellow before midwinter. The knight meantime delivered himself of the following sage advice to Mr. Grower:

"Behold you, a grower of fruit, making wry faces over a few bites of the very fruit you have brought to this market to be sold to these honest women, these patrons of this much-to-be-desired market of the Ultimate Consumer. You well knew that these York Imperial apples would not be ripe before midwinter, and these Ben Davis not until late spring. Why did you not also have have sense enough to know that these good women, even if lured by false appearances to purchase the apples, would, after tasting them, be so thoroughly disgusted as to hardly again attempt buying apples during the whole winter? And in your storage-cellar at home have you not put away some ripe and mellow Bonum and Mother apples which, if tasted by these good women, would so please them as to promptly inspire the apple-eating habit? If, then, your ripe Grimes' Golden and Jonathan should come to still further captivate their tastes, they and their friends and their friends' neighbors would apply in such numbers to be initiated into the Circle of Apple Consumers that all would later be glad to pay even your own price for good ripe Yorks and Bens, each in its own season. Fie on you, you ignorant grower. Your ignorance has caused you to slander unwittingly the good name of the late-keeping apples by putting them on the market when green and hard; to dishonor the fall apples by holding them until too ripe and marketing them in competition with the late varieties at a time when the latter should have the markets alone; to cheat the consuming public, your fellow growers and yourself by making it impossible for anyone to really acquire the apple-eating habit until late in the winter. You should properly be made to eat those hard, green apples until you die of cholera morbus; but having promised me that you will hereafter study your varieties of apples and market them only in the months when they are most fit for market you may go, but remember I shall be watching you."

Sir Hubert, with lofty mien, well satisfied at the successful culmination of this little adventure, walked leisurely out of the store, mounted and rode away amid the plaudits of the good women who so eagerly desired some of those ripe, luscious apples to which he had referred. Mr. Grower, hastily throwing away the uneaten part of the last hard apple and muttering something about visionary, impractical and crazy, searched out the commission merchant from the private office, and was soon quibbling with him over the price of the apples on the truck backed up to the curb in front.

NAT T. FRAME.

The farmer who shifts the entire burden of the proper agricultural training of his children to the schools will never reap the highest benefit, no matter how perfect the rural schools may be.

GARDENING

BY T. GREINER

Nitrate of Soda Tells

A LITTLE nitrate of soda strewn over the beds broadcast in early spring often has a marked effect in making big and healthy foliage in lettuce, beets, cabbage, onions, etc., and it also has this effect when used on some of these crops in the fall. Where I made such application during last August, on spinach started from seed about last of July, the growth now is more than twice as big as where no nitrate was applied, and the foliage is much darker in color. If you can get some nitrate of soda, perhaps from a neighbor who is engaged more largely in the trucking business, by all means use a few handfuls of nitrate per square rod on beets and spinach, if for no other vegetables.

Hotbed for Home Plants

A reader says he intends to grow his own vegetable-plants next spring but does not know how to make a hotbed. If you have a neighbor on whom you can depend for your supply of just such plants as you want, it is all right to buy them. I always feel safer with home-grown plants. I take pains to secure (raise or purchase) just the seeds of just the varieties I want. I take pains to start these seeds in time, and to grow them so that they can give me the best service. I need never worry whether I can get the plants just when I want or need them, nor what kind of things they will give me when they come into bearing. You cannot tell from the looks of a tomato-plant what kind of tomatoes it will bear. The nicest plant may give the poorest tomatoes. I never set nicer, stockier plants than were my Trophy tomato-plants grown from a packet of seed sent me through the kindness of our congressman (or of the Department in Washington), "free gratis," yet there is not a decent tomato, fit for use or sale, on the whole lot of plants. So, first of all, make sure that you get the right kind of seeds, from a reliable source. Then make your preparations to put up the hotbed to grow the plants in, and these preparations should be made in good time.

How to Make the Hotbed

First secure the sash or sashes you will need. On their size and number depends the size of the frame for the bed. In a cold location it may be advisable to use the double-glazed sashes. They are advertised in agricultural and horticultural papers. In milder locations single-glazed sashes, or even frames covered with oiled muslin, will do. I would, however, prefer glass to cloth for any place. Then select the spot—perhaps sloping toward south or east, and if possible protected on north or west side. If the spot is well drained, dig a pit, say, twelve to eighteen inches in depth; if not well drained, have the bed on the surface of the ground. Some people prefer to have it there anyway in order to save the labor of digging the pit and the necessity of stooping over so low in attending the bed. Then make a frame of plank of the size that the sashes will cover. The usual size of sash is five to six feet in length by three feet in width. A good many plants can be started in a bed of even one or two common sashes. The rear of the frame is made of a plank twelve inches wide, the front of one eight inches wide, so that the sashes when placed upon the frame, will have a slight slant toward the sun. These things should all be put in readiness in fall or early winter and the bed covered to exclude frost.

When the time comes for starting the bed, provide a lot of good fresh horse-manure, let it come to a heat, work it over repeatedly, and then fill the pit, or if there is none spread it on top of the ground over a somewhat larger space, all around, than is covered by the frame, and pack it down solidly eighteen inches or more in depth. Then put the frame on top, and cover the manure inside the frame five or six inches deep with good loam. Then put the sashes on, and let the sun warm up the bed. Soon the manure will begin to heat up again, and the bed may then be planted. But this is another story, good for latter part of winter.

Endive or Lettuce?

A reader asks about growing endive. He has never tried it. Many of our home gardeners have failed to do that. Lettuce is, to my notion, far ahead as a salad-plant to any other, endive included. But the latter makes a fair substitute during the hot and dry summer and early-fall weather, when lettuce is quick to go to seed, rather than make good heads for salad. As the seed should be sown in July, or plants secured and set not later than in early August, it will now be too late for this year to make a trial of endive. Anyway I like lettuce better, and expect good heads by late fall. Lettuce is the salad-plant par excellence.

Farm Notes

Completing the Telephone

MY ATTENTION has been called to the fact that, while advocating a metallic circuit—that is, two wires instead of one—I have given no reasons for so doing, and a correspondent suggests that his line, a single grounded circuit, has given some years of good service, and he cannot see why the double circuit is preferable. He calls attention to the fact that it doubles the cost of wire, necessitates the use of cross-arms instead of brackets and generally makes a large additional expense. All these statements are true except, possibly, the first: that the grounded line has given "excellent" service. I imagine that were some good fairy to change that grounded line to a metallic circuit overnight my correspondent would realize that he has not been getting anything like good service. The matter may be summed up thus: Were I building a line not over thirty miles long, through a country where I was absolutely certain that no telegraph, trolley, electric-light or telephone lines would be strung for

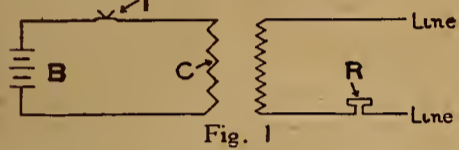


Fig. 1

many years, I would think seriously of a grounded line, but this condition is unthinkable. The only possible case would be, as I have often seen in the Far West, where the owner of a large ranch builds a strictly private line on his own lands. Two grounded circuits simply cannot exist on the same poles or even on different poles if the lines parallel each other for any distance without "cross-talk," which means that the current flowing in one wire induces a corresponding current in the other wire, which current operates all telephones along the line. As a matter of fact, the entire operation of telephones and all electric-light machinery depends on this principle of induction. Examine carefully Fig. 1, and follow the circuits, which are exactly those of the telephone-instrument with the switch-hook and ringing apparatus left out. From the batteries B the current flows through the transmitter I and the primary (coarse)

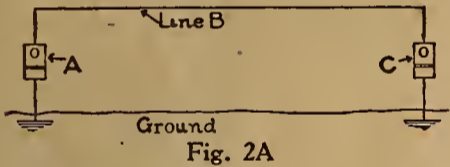


Fig. 2A

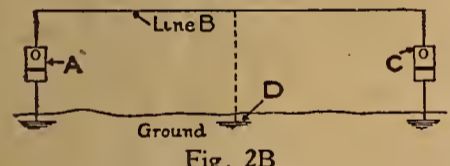


Fig. 2B

wiring of the induction coil C and back to the other side of the battery. In other words, the battery current proper never leaves the telephone. It does, however, induce a current in the secondary (fine) winding of the induction-coil, which is connected through the receiver R directly to the line, and so to the other instruments or to the switchboard at central where the same circuit is repeated in reverse order. Two grounded wires running side by side will act exactly as do the two windings of the coil, and it is utterly impossible to prevent their doing so; in fact, when two grounded lines are on the same poles or even on the same road and parallel each other for any distance, they will "cross-talk" to an extent that makes it impossible to use both at the same time. Two metallic circuits have the same tendency, but not being grounded—that is, having no common earth return—the tendency is greatly modified and can be entirely overcome by transposing the wires of each circuit, up to 25 miles; however, this is not required, so will not be gone into here. Then too, a grounded line is tremendously disturbed by atmospheric electrical phenomena, such as thunder-storms, etc., whereas the metallic circuit is little, if at all, affected, the reason being that the two wires are equally disturbed and so no audible effect is produced. Again, if the wire of a grounded circuit becomes itself accidentally grounded, as by a wet limb of a tree or otherwise, the line is put utterly out of business, whereas the metallic circuit will still work, although imperfectly. Fig. 2A shows how this operates. The current leaving telephone A proceeds to the line B, through telephone C, thence to ground and back through the earth to telephone A again, thus completing the circuit. If now we ground the wire at D (Fig. 2 B), the current, which always takes the path of least resistance, will never reach telephone C at all, for it can more easily complete its circuit through the ground D. Then

again, in some soils, such as gumho, rock or adobe, it is well-nigh impossible to get a good ground, which means a connection to *permanently damp earth*. I have seen local conditions such that no ground at all was possible. One of the most laughable incidents in my experience happened in Missouri, where an old German friend of mine had attempted to ground his instrument by running the ground wire into a cement cistern, which formed about as good an insulator as he could have picked out. I drove some fifteen miles into the country to "fix him up," and for a joke ran his ground wire into the well, whereupon the line worked perfectly, and the old gentleman, with a great flow of German "cuss-words," expressed his amazement that the line would work through hard water but not through soft.

The Metallic Circuit is Always Best

Taking it all in all, therefore, the metallic circuit is well worth the additional expense which, after all, bears a small proportion to the entire cost and will repay itself a thousand times in comfort and good service. Figure it up: the poles, guys, instruments and labor are practically the same in either case, while the extra wire and insulators don't form very large items. The cross-arms and bolts amount to something, but you can run your metallic line on brackets, using two to each pole, if you wish, but just here let me suggest that your line won't be up a year without someone wanting to rent space on your poles, and a very few years' rental will more than pay the extra expense. The regular rental is five cents per contact per year or ten cents per pole, which, at forty poles per mile, means \$4 per mile per year, the lessee furnishing his own insulators.

To get back to our line-building, we are now to consider the matter of drops and inside wiring. The drops are the wires extending from the line proper to the house, and may be of bare or insulated wire, as preferred. My own practice, in rural work, is to use one bare wire and one insulated, thus making a little saving at no loss of efficiency. It is usual and excellent practice to run one of the drop wires (P) directly from the cross-arm, the other from a bracket (K) on the pole, as shown in Fig. 3. Separate the wires as widely as possible, and keep them separated all the way to the house. Don't fasten them to trees, but set an extra pole if necessary. The drop wires may be as much as two hundred feet long without support but this throws too heavy a strain on the line. At the house attach to brackets as near the outlet of the inside wiring as possible, and don't pull the drop wires too tight. See that the brackets are nailed firmly (to a stud if possible), and slope them slightly against the strain. From the brackets run the wires on knobs, spaced not over six feet apart and separated not less than a foot, along the side of the house to where they are to join the inside wiring, being careful to keep them free of contact with the house. Always run the wires in straight lines, and turn corners, as shown in Fig. 4. Don't run the wires around a corner of the house unless it is absolutely necessary. It is cheaper, easier and far better to bring the inside wiring through the house than the outside wire around it, and the appearance is much better. If you must go around a corner, turn it on brackets, not on knobs.

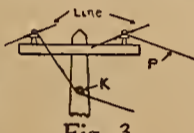


Fig. 3

Place the Telephone Correctly

When the location of the telephone is decided, don't put it too high, four feet four inches to the transmitter is about right, and see that the screws have good holding. If on a lath and plaster partition, it will be best to nail a couple of cleats across the studs and screw the instrument to these. At the very least, make sure that two screws enter the studding. On a brick wall always use cleats or, better, a board. A nail may be driven into brick to hold if great care is used, but the proper way is to drill four holes in the brick and plug these with absolutely dry pine, the plug being split at the bottom and a pine wedge put in. When this is driven home, it will be impossible to loosen it, as the wedge crowds the wood of the plug firmly against the sides of the hole. Now come a few more "dons."

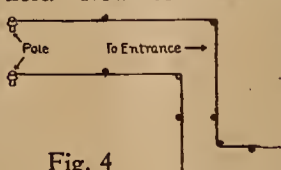


Fig. 4

Don't let anybody persuade you into using annunciator or office wire for your inside work. It will make more trouble than the entire balance of the circuit. Use the regular rubber-covered and braided wire always. The few pennies extra it will cost per subscriber are the best investment you can make. Don't use plain staples over the wire, but put a slip of leather around it first, and don't drive the staple any harder than absolutely necessary. In stapling the duplex wire, put the staple over one wire only. Don't run the wires along floors or base-boards where they can get wet. Put them, rather, as high on the wall as possible; for instance,

along the tops of the window-casings or behind the picture-molding. When you have to go through a wall or partition, make the hole amply large, and tape the wire where it goes through. Set the lightning-arrester just inside the entrance of the drop wires, and run the ground wire in a straight line to earth. The arrester consists of two carbon plates separated by a sheet of mica in which holes are punched. One of the plates is grounded. Lightning-discharges will jump the gap from carbon to carbon rather than follow the turnings of the wiring and instrument circuit, it being a peculiarity of all high voltage alternating currents (such as lightning) that they have a very decided objection to moving in other than a straight line; thus, instead of following the turnings of a coil, they will blow out the insulation or even leap an air space. It is just this peculiarity that makes it possible to guard against them. Fuses are not generally advised for rural work. They do no good in case of lightning, and nothing else, as a rule, will bother a rural line. If the line gives any trouble after a storm, the first thing to be looked at is the lightning-arrester, as the discharge may have deposited some dust between the plates and so grounded the line. Don't forget to put the mica hack in place when replacing the plates.

And now, the telephone being in place and the line ready for business, one word of caution: Don't use the instrument for a shelf, and above all don't put hair-pins or other metals on top of it. I have more than once driven a long road in winter to pick a hair-pin or a handful of them off an instrument which they were short circuiting out of business. Remember, also that you are using one of the most delicate instruments known to modern science, and treat it well. Never leave the receiver off the hook, for you will ruin the batteries in a very few minutes by so doing and, as well, will put all the instruments on the line either out of business or at least interfere with their operation. Don't monopolize the line. Remember always that "there are others," and don't listen any more than you can help to the conversation of others. You don't want your own conversations overheard, therefore be as considerate toward others as you wish them to be toward you. H. J. MINHINNICK.

EDITOR'S NOTE—This is the fourth of a series of articles on the rural telephone by Mr. Minhinnick. The next article on "Telephone Troubles" will appear in an early issue.

Little Leaks on the Farm

THE little leaks on the farm seem innumerable. Year after year the very same leaks are to be found on the very same farms, no apparent effort having been made to check them temporarily or to stop them permanently. It would seem that they are accepted as a matter of course, and because of this an awakening is needed.

The waste of by-products on the average farm amounts to many dollars during the year. If these were properly turned into cash, the handsome sum realized would be astonishing.

There is the waste occasioned by poor fences. Waste in both money and time. Live stock will in an hour's time ruin enough of a crop to more than pay for a new fence.

We find high-priced farm machinery unprotected and weather-beaten standing in various places about the farm.

If the housewife would set a \$15 sewing-machine in the rain for an hour, she would be branded as a good-for-nothing, careless housewife, and rightly so, but what about the husband that leaves a \$150 binder in the rain, sun, snow and sleet for months, and the corn-plow where he finished the last row of corn, and the wheat-drill half full of wheat in the corner of the field until time to use them again?

Corn is thrown to the hogs on muddy ground, bushels at a time, and half of it is wasted. Good, fresh, warm separator-milk is poured into a leaky trough to the pigs, and the greater part of it is permitted to soak into the ground.

Live stock is not properly protected in the winter, and a greater amount of feed is necessary. Hay and other roughage is fed in such manner that the greater amount of it is trampled under the animals' feet.

Manure is permitted to lay in the barnyard and leach until the valuable properties it contained are in the air or the ditch.

Nails are bought by the pound or by the keg and thrown here and there on the barn-floor or elsewhere, never to be found when needed.

Harnesses are left unoiled and unrepared, and multitudinous little things allowed to develop into a waste of big things.

There is waste in time and energy in not using brain-power enough in planning



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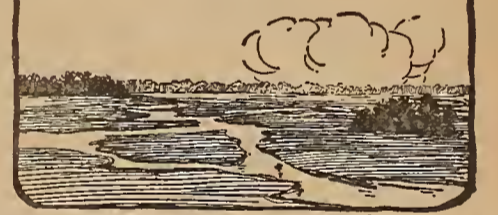
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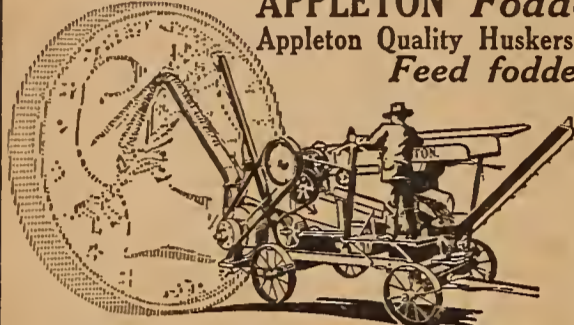
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work to be done. Too many useless steps taken, too many useless movements made, too many important minutes lost by going the long way around when a short cut could be easily made.

The average American farmer makes money, communes with nature continuously, lives in approved American style, enjoys life thoroughly, but think of his bank account being doubled, just simply by stopping the leaks!

Watch the leaks; stop them. Watch the little things, and the big things will take care of themselves. J. NESBITT.

A Fall Mistake

A FEW seasons back we finished cutting a piece of corn with the binder. As it was late in the season and the piece was to be put to fall wheat, we decided not to gather up the fallen ears until after we were entirely through cutting, and to seed the piece despite them, using a disk drill.

The results seemed to be very satisfactory during the operation, some few ears being cut in two, some pressed into the ground, and some partly covered with loose earth thrown out by the disks; but it was dry, and all looked favorable.

However, it rained in a short time, and continued so intermittently for quite a while. When we finally got into the field with the team and wagon, the corn had sprouted so badly in the damp earth that a great deal of it was spoiled, many ears entirely so, while many clung to the ground so tenaciously that they had to be left in the field.

It emphasized to us the fact that doing more than one can do right is not in line with strict, business farming. P. C. GROSE.

Farm and Fireside, October 26, 1912

The Old Times

By Berton Braley

I GUESS I'm old-fogyish—that's how I feel,—

But I don't seem to long for an automobile. I know it's convenient and handy and fast And relegates driving-nags back to the past, But still I would rather—I'm free to declare—

Be snug in a buggy behind a bay mare.

When I was a youngster and drove with my dad,

A chubby bay mare was the steed that we had.

She was slow as a snail, but remarkably kind,

And she'd jog pretty well when I sat up behind;

And the kids in the village would see me and stare

As I drove by in state with that chubby bay mare.

And then came the courting days—ah, they were sweet—

When someone I loved used to share in the seat,

And I told the old story that's always the same,

And deep in her eyes was an answering flame,

And a kiss sealed the compact we made then and there,

And the sound of it startled the gentle bay mare.

Still, still, that same sweetheart goes riding with me

Behind a bay mare that is plump as can be, And the autos may come and the autos may go,

But we'll stick to our equipage ancient and slow,

And when to the churchyard our bodies you bear

Let the steed for the task be a chubby bay mare!



With fall comes the pleasures of harvest

Intelligence

News of Interest to Every Farmer

Paderewski, the great pianist, keeps chickens.

England reports the sale of a Hampshire Down ram for \$1,175.

Tasmania recently sold London twenty million apples for \$50,000.

A twenty-five-years' record was broken at Medicine Hat, Nevada, when on September 4th there was a heavy fall of snow.

Even Siam is looking to America for advice on farming. The king has been hoping to get some man from one of our agricultural colleges to come to his land.

The Australian rabbit which, but a few years ago, was considered a great pest is now being coined into money by the sale to Great Britain of the meat, the fur and the leather.

A division of markets will be established in the Department of Agriculture at Washington. The purpose of this division will be to say the final word on what and why and when to market.

A Jersey City paper says: "Each city should provide official slaughter-houses and thus control the meat business, so that a monopoly will hereafter be impossible." The advice isn't bad, is it?

The university farm at Davis, California, claims the first cow in the world to average more than one hundred pounds of milk a day for six months. Her name, unfortunately, is Riverside Sadie de Kol Burke.

Some Germans who raise sugar-beets extensively claim that the phosphorus slag which is applied primarily for the purpose of fertilizing the soil actually prevents certain insects from attacking the beets. If this is true, the question may naturally follow: Why?

When the insects get so thick that the band-concert has to be stopped because the lights are dimmed by their presence, it is time to call a halt on insect life. That is what happened at Frecport, Maine, this past summer on one particular night when the brown-tail and gipsy moths were feeling fine.

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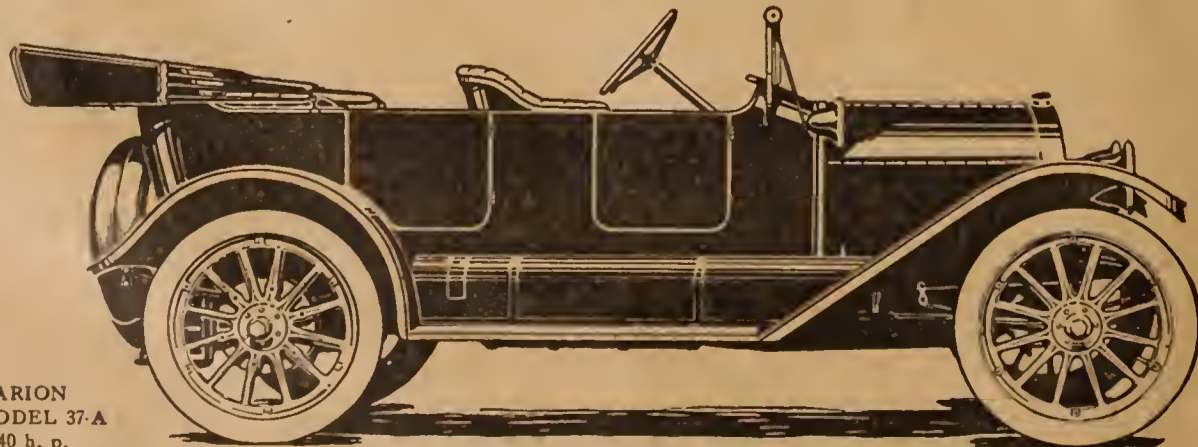
You can boast of owning a Marion car. Its style and beauty give it distinction. Its strength and stability make it dependable. It is a large five-passenger car with luxurious upholstery, lots of width, lots of breadth. It is finished either in a rich Brewster green or a deep wine color. A long wheel base, and springs of flexible imported steel make it a car which rides with exceptional ease. Not an item of equipment is omitted. It is absolutely complete.

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More Education for the People

By Judson C. Welliver

THREE thousand delegates, literally from all the world, have just lately finished an international congress in Washington, that I suppose could easily claim to be the most important world affair that takes place. It has been going on for about half a century, commonly at intervals of four years; and this is the first time it has come to the United States. It is called the International Congress of Hygiene and Demography, which is an awful fool name, for that word demography scared me away from reading anything about it for a long time, and I assume it had the same effect on lots of other people whose Greek had got rusted, or hadn't been got at all. Looking it up in the dictionary, I learned that demography comes from the same place as democracy; democracy is government of the people, and demography is writing about the people—all about them; how they happened, what they're here for, where they're going, why they have measles, vermiform appendixes and little toes; all the things that ail 'em, and how to cure or prevent these troubles; how they're divided into races, and why; in short, almost anything is demography, so there's something about people in it.

Demography, for instance, gets excited when you mention that in the textile mills in New England thirty-four per cent. of the women die of tuberculosis, while only twenty-two per cent. of the men do. In the first place, demography thinks that altogether too many people die of tuberculosis anyhow; and being of that opinion, it is setting influences at work to cut down the number of cases. In the next place, demography opines that in some industries and occupations there is too much consumption because working conditions are bad, and so it sets about to get reforms that will save millers, weavers, etc., from the necessity of breathing things into their lungs that are likely to ruin their breathing apparatus.

After that, demography wants to know why women who work in textile mills are more likely to get tuberculosis than men. If it finds out that women aren't strong enough for that sort of work, its next task is to go out and make arrangements that will prevent women working in such places. For demography is interested in everything that looks to the health, happiness, longevity, comfort and usefulness of people; and if you can beat that for a general platform, just mention it to some of the competing political parties, and no doubt they'll put it in their declarations of principles. If there was more demography in politics, it would be one of the best things that could possibly happen to politics.

Which recalls that, if there had been less politics in this particular demography congress, that would have been good too. It happened in this wise:

The demography congress is a volunteer organization. Individuals and associations belong to and take part in its doings because they are interested in a good work. It's an expensive thing to get experts together from all the world when nobody is paying any fees for it. For many years it has been customary for the city, state or nation that has the privilege of entertaining the congress to make a comfortable donation toward the expenses of the affair. Russia, which we look upon as rather slow about democracy, is strongly for demography; it has been willing to give up a big contribution to general expenses, if this congress would go there. Germany, Italy, Switzerland, France—about every country worth while in Europe has gladly accepted the privilege of doing the handsome thing by the congress when it came to meet with them.

But not so Uncle Sam. When the American officers of the big organization, last winter, appeared before the congressional committees to explain what the congress was about, they were listened to with scant courtesy. They asked for \$40,000 to help get together the great series of exhibits, display them properly, pay managerial expenses, circulate literature, and the like. Well, Congress was engaged in an economy stunt; the appropriations simply must be reduced because this was a campaign year and there must be something to point to with pride. They wound up by giving a fine bunch of millions to a river-and-harbor pork-barrel and refusing the \$40,000 that was asked by the demography people! That may be a fine, worthy and com-

mendable policy, but it doesn't make much hit with the foreign scientists, of whom about two thousand have come here. They got off the boats at New York, saw the high buildings, stopped in the gold-plated hotels, discovered that a tip of less than half a dollar only earned the contempt of the tippee, and then came on to Washington, to learn that this country was so cheap that it wouldn't give a sou to such an enterprise as this great voluntary gathering of the world's best science. You ought to hear some of 'em talk about it!

Congress certainly did guess wrong that time! After attending as many sessions as possible, studying the great exposition that has been operated in connection with the congress and talking among the scientific people, I have concluded that if Congress, instead of refusing a measly little \$40,000 had appropriated about \$4,000,000 and provided that this exposition should be loaded on cars and hauled around the country all the time, exhibited everywhere and brought right down close to the people wherever they were it would have made a good, promising start in the right direction. If there's anything more worth while for a government to concern itself about than its people, it hasn't yet been discovered. If there was about one hundred per cent. more concern about people and a lot less about other things that government worries over, we would all be better off.

Practical Ideas Carried on Wheels to the People

AS A matter of fact, this notion of putting a big exposition of this practical sort on wheels isn't at all new. Several States have specially built cars for exhibitions, and send them around under the direction of officers of their health service, showing people all about hygienic, sanitary and medical affairs, with the view to teaching them how to live, how to dodge the house-fly, the typhoid-germ, the hookworm, and all the rest of the villainies that life is filled with. The only trouble is that there isn't enough of it.

Practical? You'd think so if you had seen thirty-nine people in a party from Virginia crowding into an exhibit that showed how to build sanitary privies, with a view to protection against typhoid, hookworm and generally unsanitary conditions. There were several models in the exhibit; the last details of construction were shown, and I saw three men, at once, sketching off the plans and filling their pockets with printed matter on the subject. That's one of the things that can be built rightly just as well as wrongly, if you know how; it doesn't cost any more, and it means all the difference between the best and the worst.

Then there was, from the city of Seattle, a model of a complete dairy plant that recently got a medal for producing the best milk exhibited at a big national competition in Milwaukee. Most of these model dairy plants you see exhibited have about as much chance of being built and operated by an every-day farmer as you have of being gathered up in a chariot of fire and translated into the Czar of Russia. They're all right for a farmer with a billion dollars, diamond-studded cows with solid-gold hoofs and a determined purpose to make every quart of milk cost more than anybody else can make it cost. But for the man with the very practical problem, first, of getting the plant built and paid for, and then of running it so as to produce milk at a profit at current prices—well, they're decidedly too ideal for that sort of a dairyman's uses.

This model plant from Seattle was especially worth while because it could actually be built by a farmer and operated without an endowment. I shall not try to describe it; the evidence of my approval is in the fact that, being an amateur dairyman with hopes of becoming a semi-professional and getting into the league some day, I studied it with more satisfaction than any other model of the kind I had ever seen, and learned a lot of things from it. If that model plant could be duplicated about a hundred times, and then shown to all the dairymen who are making a business of milk-production, it would be a real service. There would be less tuberculosis among the cows, cleaner milk, less work for the inspectors, more milk per cow and more profit for the farmer.

What seemed to interest more people than anything else about the whole exhibition and in the addresses that were made to the congress was the interest in the welfare of children. It was on display from every point of view. Even these extreme eugenics people, who want to pick out your wife for you with reference to the scientific production of the right kind of posterity, were working away. Perhaps their scheme will make more headway in a more scientifically disposed age than this; it's dangerous to be sure about anything nowadays. It's alleged that the right kind of marriages are made in heaven. If that's so, perhaps we will be able to create a government bureau some day that will issue licenses to young men, authorizing them to court girls of a given height, weight, age, color of eyes, size of shoe, waist measure, etc., and forbidding them to flirt with girls who don't come within the specifications. Just how that sort of a regulation would be imposed on the young folks of this progressive and somewhat unmanageable age I don't quite see; but the eugenic enthusiasts seem willing to try it.

But when it came to the babies, they certainly were there with the information; and there were crowds of mothers—fathers too, for that matter—studying away at the cradles, feeding apparatus, clothes, and all manner of things that were shown. There were exhibits of just what children ought and ought not to be fed at various ages, and careful directions as to how to test the physical and mental development of children at all ages, with the view to determine if they were normal, or if they needed special attention, training or care in some especial regard. Nobody could doubt that all this was thoroughly practical; people brought their little ones by scores, to have them examined and tested and sized up by the experts in charge.

A series of lectures on sex hygiene attracted much attention. The problem of whether we should or should not teach the children the facts of life and sex, the origin and development of life, and thus save them from the contamination of impure knowledge, seems to have been answered definitely in the affirmative. Of course we should; but how many parents do? The phenomena of reproduction, its relation to physical health and well-being, the necessity of control, the dangers that are involved—all these things ought to be taught to children when the learning will do them most good and afford most protection. In most of the high schools of Germany courses are established for this kind of instruction, by competent teachers; and still later, when the children are ready to leave school, they are enlightened by medical lecturers on the nature and danger of social diseases. Not only this, but these wise Germans have gone back of the children and established like courses of lectures and instruction for parents, in order to equip them to deal intelligently with the sex problem in educating their children. Similar work is being introduced in France, but has not yet made so much progress or been so widely accepted.

More Education and Less Work for the Child

THE State of Washington has a law requiring instruction along this line; students applying for certificates or diplomas as teachers are mandatorily required to attend these lectures. There is every reason to believe that the false modesty that has somehow prevented adults, especially those immediately responsible, from attending to this part of the children's instruction is in the way of being brushed aside, and that in the not distant future a vast benefit will be conferred by the new policy of frankness, honesty and directness.

The propaganda for more education and less work for the child was on hand with endless exhibits and striking data. One series of cartoons was particularly fetching. It pointed, in brief, that the Government is conserving its forests, its coal, its water supplies—but what is it doing to conserve its children, who will be the nation in a few years? Mighty little. Just think of the fact that under the Georgia law children may be put at work in factories at twelve years old, and may be worked sixty-six hours a week! Why, that is eleven hours a day! Demography has a terrific kick against that sort of thing.

Demography, as represented in the demography congress, is for the man, not the employer; it wants him to do his own uplifting and welfaring; and I suspect the best welfaring will in the end be done that way.

THE WAY O' THE WORLD

By Anne McQueen

Illustrated By R. M. Brinkerhoff



THE stranger, climbing the worm fence that enclosed the premises of Cephas Lyle, viewed with a disapproving eye the run-down appearance of things, denoting plainly either the shiftlessness of men or the pathetic helplessness of women.

The man himself was as dilapidated-looking as the log house, whose sagging porch he was approaching. Ragged and unkempt was he, with a black beard waving like a banner on his broad breast. Furthermore, he had lost a left forefinger, and his right eye, the sunken socket drawing his forehead into a most ferocious-appearing frown, was not calculated to produce a good impression on strangers. Besides, he was plainly a tramp, and one who had come a long way.

Cephas Lyle's wife, coming from the spring some hundreds of yards down the hill, beheld him with curiosity; she was bending under the burden of two full pails of water, and she set them on the plank shelf at the getting-over place while she stood and panted a moment before climbing the fence. There were no gates on Cephas Lyle's place; always had the women folk of his race fetched their water from the distant spring and rested at the getting-over place. It was an inherited custom, and, like many others, was accepted by her without question.

"I wonder," mused Cephas Lyle's wife, regarding the stranger as he stood hesitating in the open doorway, "if he's lost his way, and lookin' for the big road. Strangers air apt to do that in these flat woods."

The yellow dog which had followed her to the spring capered on ahead and barked inquiringly at the stranger's feet. The man, looking up, beheld the woman at the fence, and walked deliberately and without a movement of haste to the getting-over place.

"Evenin'," he greeted briefly, at the same time taking the full pails from the shelf. "I'm a stranger in these parts, lookin' for work. I heard up the road you-all was needin' a wages-hand."

The woman regarded him timidly; his one eye was fixed on the ground, and the scowl on his forehead was fiercely drawn. Decidedly, he was of unprepossessing appearance!

"I—I ain't certain," she hesitated. "You'll have to wait and see my man; he's plowin', and it's nigh sundown. He'll be here in a minute."

The man turned quietly, the pails in his hands, and walked toward the house, Cephas Lyle's wife following, a puzzled look of wonder in her eyes—she was not used to being waited upon by men folk. On the front porch was the usual water-shelf; here he set one bucket and faced the woman inquiringly. "Want the other in the kitchen?" he queried.

"Yes," she answered, still wondering, "it's back o' the house."

The tramp silently carried the water to the log-pen room in the back yard, where a great fireplace stretched across one end, spiders and pots ranged upon it, ready for cooking; with a pile of brushwood and a great basket of corn-cobs set in the corner.

He set the bread-oven and the meat-spider in their proper places and kindled a fire under them; then he filled the kettle from the water-pail and hung it on the chimney-crane. These tasks completed, he seated himself in the doorway and silently awaited the coming of Cephas Lyle.

The woman, moving about getting supper, watched him covertly, pondering over the unusual thing of a man doing women's work as if it were a matter of course. She was a little woman, pitifully young, with shoulders already bowed from child-bearing and labor. Her eyes were blue and childlike, and she was still pretty, in a wan and faded way; soon over-many children and over-much toil would do away with even this, and she would develop into a wrinkled, yellow, old woman when she should be a rosy and comfortable matron.

Cephas Lyle came in promptly as the sun went down. Cephas, after the manner of his kind, followed custom. His forefathers had gone to the fields at sunrise and come home at sundown; no matter how long the twilight nor how grassy the crops, he stopped his plow on the minute; labor being, with him, sheer necessity—he had no love for it!

The tramp, rising from the door-step, followed to the barn where Cephas was taking the plow-gear from his mule. "Evenin'," he grunted.

"Evenin'," returned Cephas, in mild astonishment at the unusual sight of a stranger. He was a gentle, incapable man, with pale eyes and hair and a kindly, weak mouth; there was, as the neighbors all agreed, no harm in Cephas.

"Heard up the road you-all was needin' some help. I'd like the job of a wages-hand. Five dollars a month, or a share o' the crops, airy onc," stated the stranger mechanically.

"A wages-hand," meditated Cephas; "why, I *did* aim to hire some help through plantin'-time, but—"

"All right," nodded the man, "show me where you keep your fodder, and I'll feed up."

So it came about that Rufus Weeks, stranger from parts unknown, came to live in Cephas Lyle's house and to work in Cephas Lyle's fields, greatly to the

increase of crops and to the personal advantage of every living thing on the farm, from Cephas, his wife and children—there were three, the eldest a girl of two, the youngest twin boys of three months—down to the very chickens that fattened and laid eggs surprisingly.

In Cephas Lyle's house hung a picture, a rude portrait of a youth in a Confederate uniform. Under it was a little shelf on which there was always a tumbler containing a sprig of cedar or a pathetic bunch of wild flowers. Cephas explained this to Rufus Weeks, after they had become acquainted.

"That's a picter of Lorena's fust husband, and she ain't never forgot him; it's a notion o' hers to keep his memory green by them posies, on account o' not bein' able to lay 'em on his grave," he said. "You see, Lorena was married to Jason Orth fust year o' the war—both o' 'em mighty young, pore things! Second year Jason went, like the rest of us; only he was sent up North, and me and some o' the rest was home guards."

"Well, he died, up in some o' them northern prisons, and Lorena was left strugglin' alone with a baby to take care of. Then the child—little Jason—died, and one night the house and all she had burnt up, 'cept that

Twenty years had passed since Rufus Weeks first climbed the fence in search of work. Now the yard was neatly paved and filled with flower-beds, and the cabin had spread out into a rambling, commodious house, well furnished. There was even a piano for the girls, of whom there were now three, while the twin boys had grown to be handsome, stalwart youths of twenty, full of the life and energy of the "new South," and both doing well at college. Cephas Lyle had indeed prospered!

One day Lorena had house-cleaning—a very general and thorough one, for the eldest daughter was to be married, and everything must be ship-shape for the wedding. Rufus Weeks was helping, lifting the heavy furniture and making himself useful in numberless ways.

Lorena, gazing critically about in search of further improvements to make, found her eyes fastened upon Jason's picture.

"Rufus," said she, "just reach up and unhook that picture. It's so old and faded I think I'll lay it on the fire."

Rufus blinked his one eye a little. "Your fust husband's picter?" he queried doubtfully.

"I did used to think a heap of it," admitted Lorena, "but now it don't seem to favor Jason. Besides, he's in heaven, where there's no marryin' nor givin' in marriage. Cephas has been a good husband to me, and someway it don't seem right havin' him hangin' up there, lookin' at me all the time, when I belong to Cephas. After all, a woman can't have but one husband, Rufus, and it ain't right to be a-thinkin' of another."

She took the picture from his hand, sighed a little and laid it on the glowing bed of coals on the hearth, where it blazed and crackled merrily before dropping into white ashes of forgetfulness.

Some time after this, Cephas, going to seek Rufus Weeks, who had failed to appear that morning, found his room empty—the tramp wages-hand was gone! They never heard of him afterward, and Cephas grieved as for a brother, but Lorena was openly indignant. "To think," said she to a neighbor woman, "of us takin' him in when he hadn't an extra suit o' clothes to his back, and Cephas treatin' him like one o' the family, and all of us doin' for him. And then to go away without even sayin' 'thank you' for all our kindness—forgettin' everything!"

And the neighbor woman nodded dismally in agreement. "Forgettin' is the way o' the world!" she sighed.

A year after, out in what was then known as the remote West, a traveler stopped for the night at a ranchman's hut, where he was made welcome by the owner, a silent, grizzled man, with a forehead drawn into an unnatural scowl by an empty eye-socket.

The traveler, smoking by the fire, became reminiscent. "I was out here more'n twenty years ago," he mused, "fightin' Injuns, me and a boy from back home. You see, we were both captured from Lee's army by the Yanks, and we'd stayed in prison till death would have been a relief! Then we took up with an offer to join the reg'lar army and come out here to fight Modocs, which wasn't like takin' the oath of allegiance agin our own blood and kin. So we two come; and he, poor fellow, had a wife and a baby back home and was nigh crazy 'bout 'em. He couldn't write himself, but I writ for him, tellin' her to wait and do the best she could till his time was out in the army and he could come home. Mail was a risky thing in them days; I doubt if she got them letters."

"We was tent-mates, and one night a loaded musket fell and went off, blowin' away his left forefinger and bruisin' up his eye so the surgcon took it out. Seein' your eye was out made me think about him."

Silently the ranchman stretched forth his left hand. The index finger was missing. "By Jinks!" shouted the traveler, shaking the outstretched hand vigorously, "if you ain't Jason Orth! Old man, did you get back to the wife?"

The man looked silently at his gnarled and knotted hands, made so by laboring for the comfort of Cephas Lyle's wife. Then he spoke slowly: "The baby was dead. She was well; she's doin' well now. I saw her a year ago. But she's—she's done forgot me."

The traveler grunted indignantly, "That's the way o' women!" he said bitterly. Then, seeming to consider, he spoke again: "But she wa'n't so much to blame, Jason; we might ha' done the same. To forget is the way o' the world."

And Jason Orth nodded in silent agreement. But he knew that he would never forget Cephas Lyle's wife!

"The Adventures of a Beneficiary"

IN OUR issue of November 23d we shall commence our new serial story, "The Adventures of a Beneficiary," by W. T. Nichols. This story, dealing with the amusing, as well as thrilling, adventures of a young man compelled to take up a new and strange life, because of the seeming caprice of an odd will, is sure to interest and entertain. Don't miss the first instalment!



"'It's so old and faded I think I'll lay it on the fire'"

picter of Jason—somebody had drawn it in camps, and he sent it back to her by one o' our boys on furlough. She fetched that out, huggin' it to her bosom like 'twas somebody, 'stead of a likeness."

He paused, looking dreamily in the direction of the house, as he leaned on his hoe-handle; his companion hoed steadily on the next row, never looking up.

"And then," continued Cephas, "because she hadn't nobody to turn to, and 'count of me and Jason bein' friends, why, I up and married her. I reckon it's some better'n to be alone, though life's hard enough for pore folks—seems like children is all the riches we get. But Lorena loves her babies, and she loves Jason's picter—she ain't never forgot. I don't mind; I married her more on account of Jason than anything else, and because it wa'n't right for her to be left alone in the world."

"It was a good thing for you to do," said Rufus Weeks, stooping to pull up a tough weed. "And she *will* forget—in time. It's the way o' the world."

But thereafter, possibly because he pitied her for the sad story of her life, Rufus Weeks did all he could to make life easy for Cephas Lyle's wife. He brought all the water from the spring himself, till a time came when labor was slack, and he dug a deep well close to the kitchen door. He chopped the wood and made the fires and did all the things that the easy-going Cephas had always taken for granted as women's work, so that Lorena, instead of fading into wrinkled old age, blossomed into a comfortable, rosy matron, as was right. But, after the way of women, she remained calmly unconscious of the wages-hand's share in the matter, attributing their increasing comfort and competence to Cephas alone.

Also the sprig of cedar and the posies were no longer kept in the tumbler on the shelf under Jason's picture—a good living husband being apt to dim the memory of the best of dead ones.

And Cephas was a good husband to Lorena; increased self-respect came with better times, and as he found himself rated as the best farmer in the community he began unconsciously to live up to his reputation.

How We Butchered a Cow

By Sarah Lackham

COWS have been butchered since time immemorial, but to me the killing of our cow brought as new an experience as flying would be; and to many other women it would probably be just as unusual.

We purchased a Durham cow, when one of our children was ill, that gave poor milk, as it was not rich in butter-fat, and for that reason was much better for the sick baby. When the child had waxed strong and buxom, we came to the conclusion that the cow must be disposed of, as she was not "wuth her keep."

When all things were considered, we found it would be much the most economical plan to fatten and butcher her ourselves, and to keep as much of the meat as we thought wise, and to sell the rest.

It all proved so easy, so interesting and so practical that I am going to tell the details to others so if they should be placed in somewhat similar circumstances they can do likewise and reap the reward of a little effort.

About the middle of November is the best time to do the butchering in a north country, but further south it would have to be put off until somewhat later.

Good Feeding Means Good Meat

The first thing, of course, was to feed the cow well, although she was in splendid condition, it being the end of the summer. For four weeks she was given full rations of corn-meal and "mixed feed," and at the end of that time would have been called "prime western beef."

We then got one of the farmers living near by to kill and quarter her. She weighed when dressed about six hundred pounds, and was in fine condition. The lean meat was firm and all streaked with fat. All the men said they had never seen such a splendid animal.

We hung the quarters in the cellar for two weeks, and at the end of that time the meat was ready to be butchered. The kidneys and liver were removed a few days after the animal was killed.

Never having seen or done anything of the kind before, I knew it behooved me to learn from those whose experience was expert. Fortunately I had in the house Mrs. Beeton's Book of Household Management and Bailey's Cyclopaedia of American Agriculture, both of which were of the greatest assistance to me, and the following directions are taken from Bailey:

"For neat work in meat-cutting a short curved knife, a twelve or fourteen inch steak-knife and a twenty-six-inch meat-saw are essential. An eight-inch cleaver is also advisable. A block of some kind should be provided substantial enough to stand the weight of a quarter of a beef. A quarter section of a large log can often be made to answer the purpose, and in many cases an ordinary table will suffice. In cutting meat of any kind, one should always cut across the grain when possible. Following this principle will result in uniform pieces, and the meat will carve in better form for table use after cooking. Unless the meat is frozen, it should always be cut to the bone with a knife, and a saw used only through the bone. Sawing the bone is preferable to chopping it, inasmuch as it does not splinter or shatter the bone. Meat should not be cut until the muscles have set firmly and the animal heat has all been extracted."

What We Decided to Use

We had decided that all we could use were the two hind quarters, but we had them cut farther forward than usual, between the ninth and tenth ribs, so that we might get an extra roast on each side.

In the description below I only deal with the hind quarters, as we sold the fore quarters in the whole piece.

I had a large carpenter's bench well cleaned and put in the laundry, and there cleared, or rather bestrewed, the deck for action. My plan was to cut it all into the different parts, steaks, roasts, etc.; to corn some, to freeze some and store it away, and to keep out a few pieces for immediate use.

We first put a hind quarter on the table with the inside up, and started by removing all the fat. This was afterward made into eighty cakes of hard white soap.

We then turned it over, cut off the flank much higher than is usually done, including the end part that is left on the sirloin steaks. The best of this was put aside to corn, and the bones and scraps put with the soup-meat.

After this we cut off the prime ribs, cutting three ribs to a roast, and one small tip-end roast on each side. Then we cut six thick sirloin steaks from each side and two rump steaks from one side, and

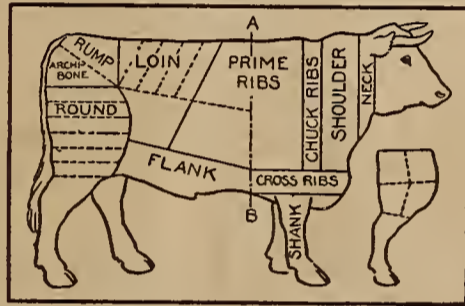
from the other one piece for beef à la mode. We cut two pieces from the aitchbone for corning. We cut one of the legs into larger round steaks, as these could be used for so many different dishes. The other we cut into four roasts, two on the inside for beef à la mode, and two on the outside for roasts. The end of the legs were cut into two large pieces and the bones well cracked for soup.

The marrow in all bones and the soft part in the backbone was carefully taken out, as this is more apt to spoil than the meat.

After the meat was all cut and trimmed, the most of it was spread out in a cold closet where it would freeze hard. After it was frozen, each piece was wrapped in white paper, marked, placed in a clean barrel and covered with sawdust, care being taken to put it in the order in which it would be needed, not all of one kind together. It was then covered carefully and put in an outside north closet.

The pieces were taken out the day before needed and gradually thawed out, or, in an emergency, were put into ice-water, thus taking out the frost more quickly, but with it some of the flavor.

We corned the tongue and aitchbone pieces (four of them), what would usually be the end of the sirloin and the best part of the flank in a large stone crock and put it away for future use, as with care it could be kept until late into the summer.



The common cuts of meat

All the scraps and bones were put into a soup-kettle and boiled down thoroughly for nearly twenty-four hours, adding more hot water as needed, not being seasoned in any way except with salt. This was put aside to cool, the fat taken off, and then it was cleared and put into quart jars and put back on the fire in a large boiler, with laths on the bottom to keep the jars from breaking. When the soup had come to the boiling-point, more boiling soup was added, filling the jars to the very brim, the rubbers and tops put on and clamped down tight while still boiling, and we had eight jars of thick stock. When we wanted soup later on, we had only to brown some vegetables in a little drippings, add to the stock, cook for two hours, then strain, and we had a delicious clear soup.

When we finished, there was not one particle of the two hind quarters that had not been used.

An Easy, Economical Undertaking

This was all so easy and worked out so beautifully, even with a person of no experience, that I can see no reason why it might not be a great thing for others to do likewise, even if the meat were divided among two or more families.

Choose a good beef-cow that has gone dry, and fatten her for two or three weeks, or buy a fresh cow in the spring, use the milk during the summer, when one's family in the country is apt to be large, and butcher it in the late autumn.

Before I undertook this it seemed a disagreeable undertaking, and I did not much anticipate it. But when doing it, and after it was accomplished, there was no such feeling.

It was all so clean and so completely used up that there was nothing to feel squeamish about. I may also add that it proved most easy from beginning to end, and no one need feel daunted, if I, with my ignorance, have brought forth success.

The cow when dressed weighed about six hundred pounds, and including the value of the hide, was worth about nine cents a pound. I feel sure even the soap-fat was worth almost that much to me, to say nothing of the roasts and steaks and fillets for which I would have paid from twenty to seventy cents a pound.

I never before realized how much we lose by the butcher's "trimmings." A roast that would have been a ten-pound one from the shop, at thirty cents a pound, weighed only seven. So if the gain were nothing else but in the pounds which we should never have got it was great.

And I laugh in my sleeve when I think it is now my turn to "trim" the butcher, and how easily we managed it.

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Cousin Sally's Letter

DEAR COUSINS: How I wish we all could have a Hallowe'en party! Wouldn't it be fun? Just fancy how many barrels of apples and bushels of chestnuts and tons of gingerbread and gallons of milk and cider would be required for our refreshments! Almost I can believe we're going to have one. We'd all wear masks and fanciful costumes. There'd be Indians and Boy Scouts and Cowboys and Quaker Maidens and Squaws and Suffragettes! What would you be?

I suppose I'd go as a great, big Cousin Sally Club button, all in white, with a big blue triangle and C. S. C. on it. And I'd wear a big round Cousin Sally Club button on my head for a cap! What a good time we'd have! And we'd play games and tell stories and sing, and when I'd say, "Dear me! It's quite half-past ten, and all you children must go home to your beds this minute," I can just imagine how you'd answer, "Just ten minutes more. Just one more song, Cousin Sally!"

To what a number of places you'd have to go, in order to be tucked safely away: some to California, a big band of you to Maine, others to Florida, Mexico, Canada. Perhaps my play party will give you all an idea of Hallowe'en parties. And I'm going to tuck in some Hallowe'en games to help the fun, in case you're going to have one. Here they are:

Apple-Pip Test—Upon slips of white paper, using milk for your ink, prepare a list for each guest, thus:

- Two, an early marriage.
- Three, a legacy.
- Four, vast riches.
- Five, an ocean voyage.
- Six, great fame as singer or orator.
- Seven, possession of any gift most desired by finder.

Also provide each guest with a rosy apple, which is to be cut open and the seeds counted. Then, over the lamp, let each one hold his apparently blank slip until the heat browns it and yields up his destiny, which he must make known to all, basing it upon the number of seeds contained in his apple and comparing this number with the lists brought to view by the heat of the lamp.

Blind Nut-Seekers—Hide nuts in every imaginable part of the room or house. Let all the nuts but one be of the same kind. Blindfold the guests, and let them search. Let the one who finds the greatest number receive a tiny Jack-o'-lantern made from a small pumpkin scraped out, with eyes, nose and mouth cut in it, and containing a lighted candle.

The one finding the odd nut may pay some simple forfeit indicated by the hostess.

And after it's all over and done with, the last nut eaten, the candles in the grinning pumpkins spluttered down to a soft bit of candle-wax, the children tired and off to bed, just pretend I was there too, for I will have been there in spirit.

Affectionately yours, COUSIN SALLY.



Velvet cat

The Creation of the Camel

Arabic Version

By Judson Gaylord, Jr.

KIPLING was mistaken. The camel got his humps not as a reward for laziness, but on account of the discontent of the Arabian Horse. This is how it all happened.

Long, long ago, when the earth was new, peace and happiness reigned. But this didn't last long, for one bright and lovely day the Angel Gabriel saw the Arabian Horse with his head and tail drooping in a manner that proclaimed him to be very unhappy. This naturally surprised Gabriel, who was unaccustomed to sorrow or misery in the land where all were friends and food was plentiful. So Gabriel called to the Horse to ask him what was the trouble.

"Oh, Horse," he said, "why do you hang your head and droop your tail?"

The Horse was very proud and pretended not to hear, but when Gabriel

asked a second time why he hung his head and drooped his tail, he saw that he must answer. So he said, "Because I am very unhappy. I am a misfit, and in every way I am wrong. My neck is so short that I have difficulty to eat the grass that grows close to the ground. My hoofs are so hard and so small that I sink in the shifting sands and walk with great difficulty. My back is so straight that my burdens continually slip either over my head or over my tail. My tail and mane are so long and so thick that they catch in all the thorns by the wayside. Besides, I don't like my legs. Have I not reason enough to hang my head and droop my tail?"

Now the Angel Gabriel was very sorry to see the Horse so unhappy and wondered what he could do to make the Horse more happy and at the same time teach him to be contented. So he sat down in the shade of a date-palm to think. He thought and thought, for it was a difficult task he had to accomplish. At last he decided upon a plan and straightway he proceeded to experiment.

Shortly before, Allah had created the Universe, the men, the animals, and everything in it. As in every trade, there are scraps and useless bits of material left over when the workman has finished, so was it with the making of the Universe, and Allah had given these scraps, these odds and ends of everything, to Gabriel.

So Gabriel took these scraps, these odds and ends of everything, and out of them fashioned an animal that had none of the faults of which the Horse complained. The Horse had complained that his neck was too short; so Gabriel's animal had a long neck that would easily reach the ground. Instead of hard hoofs that sink into the sand, this animal had large, round, soft feet that spread out when he walked. This made the sandy places easy for it. On its back Gabriel put a large, solid lump, in order that it might not be straight like the beautiful back of the Horse. This animal had no mane and only a suggestion of a tail, which was kept high above the thorns as it walked along on its long, loose-jointed legs.

Then Gabriel called the Horse, who looked at the animal and laughed, for it was very ugly. "Behold!" said Gabriel,

"an animal such as you would be and know that Allah is good and allwise." The Horse looked again at the Camel, for so Gabriel had named his animal. Then the Horse realized how foolish he had been, and, ever since, when he feels a bit discontented he arches his neck and with flowing tail and mane he prances

around thinking how much better is his fate than it might have been.

So that sometimes it's just as well we don't get all our wishes, isn't it?

More Hallowe'en Games

Bobbing for Apples—Boys like a ducking, and some girls don't object, so let's all have a Hallowe'en splash. Provide a tub well filled with water and a plentiful supply of apples with the stems removed. On the outside of each apple's skin cut the initial of some favorite. With hands tied behind, each one who wishes to may remove two apples—if he can.

The Raisin Race—This is a comical race for Hallowe'en fun for two girls, two boys or a boy and a girl: Tie a fine, plump raisin at the center of a yard of thread.

At a given signal let the "entries" begin chewing the thread, and whichever reaches the raisin first has won the race, likewise. The winner must be sure to eat the raisin!

A. SHEPHERD.



"Behold . . . an animal such as you would be and know that Allah is good and wise"

Hallowe'en Table Decorations

IAM sure you will all want some of these queer cats for Hallowe'en. They are made of bits of black satin or velvet. Stand these odd creatures about upon the table to add to the weird effect that belongs to all Hallowe'en festivities.

Here is the pattern to make them by: Cut two pieces for each cat, and sew up the narrow seams. Sew on yellow or green glass beads or spangles for eyes, and with a few stitches of white cotton add ferocious-looking whiskers. Hem up the bottom edge, and add a tail of black zephyr.

To make Puss stand steady, put a rolled strip of paper around inside of bottom edge of His Catship.

Filled with nuts, held in by a pill-box fitted into the bottom, would these cats not be jolly souvenirs for your party? Can't you imagine how funny they will look upon the table guarding the feast?

Perhaps some of you have already thought of the way to make the Pussies of black paper. Try them, making different sizes to stand over all the dishes on the table.

While the company is coming into the dining-room keep the lights turned very low. No eatables will be in sight, for they will all be hidden by the black cats. Someone, dressed as a witch, beckons with a broom to each guest and silently points to a chair at the table. As each person takes a seat, it is the signal for loud mewing and cat-cries by a small boy hidden in a closet or under the table.

VIRGINIA B. JACOBS.



Satin cat

Catching Dad

JOHNNY JONES is a remarkably bright, promising boy, and his parents receive many compliments in regard to him, as he is very popular in the neighborhood where they live. Of these facts Johnny is well aware, and there was pleased expectancy in his face when he set down his cup, at breakfast, to say:

"What was Mr. Smith saying to you about me, at Grange, last night, Dad? I saw you looking at me and talking."

"Well," replied his father gravely, but with a twinkle in his eye, "he was saying, 'What a pity that Johnny is such a good-for-naught, so lazy, and stupid, and ignorant,' watching his son from the corner of his eye. Then, as Johnny remained silent, he asked, 'Don't you believe it, son?'"

"Certainly," replied Johnny seriously. "It is only what I heard several there saying last night."

"Why, what did they say?" inquired his father blankly.

"Well," replied Johnny, "they didn't say it in exactly those words; they merely said, 'How much Johnny Jones is like his father!'"

GERTRUDE K. LAMBERT.

Inquisitive

LITTLE NEPHEW—"Auntie, did you marry an Indian?"

AUNT—"Why do you ask such silly questions, Freddie?"

LITTLE NEPHEW—"Well, I saw some scalps on your dressing-table."—McCall's.



The Third-Reader Class

Fourth Lesson for Beginners in Agriculture

"Written so You Can Understand It"

The Romance of the Soil

By Edgar L. Vincent

EVERY day, somewhere on this old earth of ours, an army of men goes out, each with some form of one of the oldest tools ever made for the use of the farmer. Deep into the heart of the earth these men strike the share of their simple implement, turning up long furrows of black or brown or yellow soil toward the warm glint of the summer sunshine. What are these armies doing? They are unlocking the treasure-house of the earth.

It is one thing to know that one is hungry and quite another sometimes to understand where to look for that which will satisfy this craving and how to get it. The first cry of man is for food. He must have it or die, and his call, "I am hungry! Give me something to eat!" is answered thus by the One who is always listening to the faintest cry of His children: "I have placed everything you need within your reach. Put out your hand and take it!"

So man goes out with his plow to win and to woo from the bosom of Mother Earth the food he needs. At first perhaps man drew or pushed his own plow; or it may be he gave that work to his wife or to some friend, while he himself held the handles of his rude farm tool. It was hard work and very slow. And the time came when man wondered if he could not make a better plow. It was a wonderful dream and it came true! To-day we have plows that are marvels of beauty and usefulness. And the wife has stepped out of the furrow to give place to the strong horse, or the engine which is fast coming to be the motive power which pulls the plow through the sod. In less time than it used to take him to turn a dozen short furrows, the farmer of to-day lifts as many acres up to the light of day, and does it far more perfectly.

But what, after all, does the plow do?

It may be the first answer to this question will be, "We plow so that there may be an even, mellow place upon which to scatter our seed or plant our vegetables." And so far as it goes this is true. When the earth slipped from the fingers of Nature, she did not take much pains to make it smooth and ready for your use and mine. True, out on the prairies the face of the country is so nearly level that we may look away across it for miles and miles. But even here when man goes for the first time to make it his home, he finds rank and coarse grasses growing, as well as the tallest of weeds, while the turf is firmly set and in no condition to receive any kind of seed such as we wish to grow. Everywhere the plow must break up the surface soil and fit it for future use. All farming begins with the plow.

When turning the furrow properly, the mechanical action of a plow breaks apart the soil-grains and steadily pulverizes the furrow-slice as it passes over the mold-board.

Nor is this all the plow does. Besides loosening the soil so that the roots of plants growing in it may push their way far and wide in search of the food they must have to bring them to maturity, the plow softens the soil so that when it rains the water which falls may make its way downward, to be stored up for use by and by. The looser the soil, the more water it will hold. Those who have studied the matter carefully tell us that the weight of the soil on the average farm, taken down to the depth of a foot, is not far from 1,800 tons. If we were to set out a basin when it rains, and catch water to the depth of one inch, that would mean that a little more than 113 tons of water had been added to the weight of the soil of an acre of land that day. What becomes of all this?

Hold your hands together side by side in cup-shape, and let someone fill them full of earth; then let your friend pour water on the soft earth till it will hold no more. This will give you a good idea of the way Nature stores up water in her natural reservoir to be pumped up drop by drop as needed to make stem and leaf, flower and ripened fruit. Below the point touched by the plowshare, there is a firm layer of matter, corresponding to the palms of your hands, through which water makes its way but slowly and often not at all. An exception to this is to be made in the case of some soils which are so loose that water runs swiftly through them and is soon lost below the reach of plant-roots. Man has learned how to deal with this to some extent, as we will see later on.

Not only this good comes from plowing. We remember that there are elements in the soil which must be softened by moisture before the plant can use them. Stirring the soil helps about this. Still further, plowing has the effect of mixing with the soil any plant-food that may be on the top of the ground, such as leaves, decaying vegetables or manure from the stable.

For its helper, the plow has a number of valuable tools, such as the harrow, the cultivator, the weeder and the grain-drill. These all work to quite the same purpose, that of making the soil mellow, moist and more really adapted to the growth of the plant than it is in a state of nature. All these tools need to be the best possible and to be properly used. The man who has these tools and uses them to the best possible advantage is well on the road to successful farming.

"If the art of agriculture has ruined the land, the science of agriculture must restore it; for the restoration must begin while some farmers are still prosperous, for poverty-stricken people are at once helpless and soon ignorant. Outside help will always be required to redeem impoverished soils, for poverty makes no investments, and some initial investment is always required for soil-improvements."

DR. C. G. HOPKINS.



The Soil and Its Water

By Paul H. Brown

I HOPE you remember how I told you the little roots of the crops give off into the soil the things they take up and cannot use; and that no two kinds of crops give off just the same things, but that most all of them give off a poisonous acid with the long name: dihydroxystearic acid. That acid is poisonous to the crops and to the little nitrogen-gathering bacteria with their homes in the little white knobs on the clover-roots.

Before the time of Christ, men learned that lime makes some lands yield bigger crops, but they did not know why. In England, in 1600 and 1700, the farmers were using lime on their soils, but they could not tell why. They only knew that when they did so it made a bigger crop the next year. Now why was that?

Well, it was because there was so much of this acid in the soil that the roots could not do their best. When the lime was mixed with the soil, it took up this acid and made it over into a new thing made up of the lime and acid. This new substance did no harm to the roots. There was none of that bad acid left, so the roots could easily make a strong, healthy growth.

Our wise men who spend their lives in the study of soils down at Washington, have found another way too to help rid the soil of this bad acid. They have learned that when soil is stirred often for four or five weeks in warm weather—so that the warm air gets down into the earth—the soil loses most of that evil acid. It somehow gets mixed with the air and leaves the soil.

When we have a soil poisoned with that acid, we should put some lime on it and then work it as often as we can during the summer, to let the air in and to mix lime well with the dirt.

Lime is a real fertilizer, and it takes the acid out of the soil. Now if you want to see for yourself whether or not the soil on your father's farm has any of that acid in it to poison

The Spelling Lesson

Sub-stance	The material of which anything is made
Poi-son	Any substance that when taken into the system acts in a manner harmful to health
Im-ple-ment	A tool or utensil
Ex-cep-tion	That which is not covered by a rule or statement
Suc-cess-ful	Having attained success
Cul-ti-va-tor	A machine for loosening soil and removing weeds

the crops, get a nickel, and the first time you are in town ask the drug-store man for a nickel's worth of blue litmus paper, and tell him you are going to test your father's soil to see if it contains acid enough to hurt the crops.

When you get home, cut the paper in strips about half an inch wide and about six inches long, and with a hoe or a spade dig a hole in the damp soil as deep as your strips of paper are long. Put one strip of paper in the hole, planting it as you would a little tree, packing the damp earth around it. Leave perhaps an inch of the strip above the ground. In about twenty minutes carefully dig the dirt away from the strip of paper, and lift it out of the hole.

The paper is moist now, so be careful not to tear it. Now if that strip of paper is pink or red instead of blue or blue-gray, there is enough acid in the soil so that the little nitrogen-bringing bacteria have a hard time to live and enough acid to hurt the roots of the crops; but if the paper is only blue or blue-gray, there is not enough acid in the soil to do the growing crops any harm.

If with the first strip you don't find any acid, go to some other part of the farm and try again. You are most likely to find acid soil in some low spot in a corn-field where water stands after each rain. In such spots the soil doesn't get as much air as in dryer places.

How long do we know farmers have been using lime to make their crops bigger?

Is lime a fertilizer?

What does lime do for the soil?

How can we tell when there is enough acid in the soil to be harmful to the nitrifying bacteria and to the crop roots as well?



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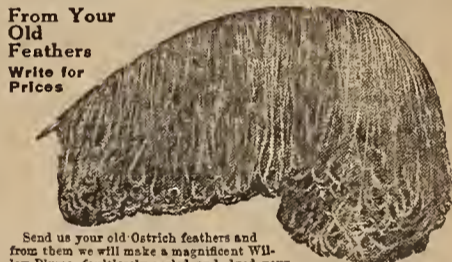
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FANCY-WORK

A New Idea That is Sure to Help
 Designs by Evaline Holbrook

HERE is a new idea for fancy-work which will be sure to delight lovers of dainty things. And the Fireside Editor is more than pleased that FARM AND FIRESIDE is, as far as we know, the first magazine to make use of this innovation.

So many times expert crocheters, knitters and makers of tatting have written us: "If only I could see the made collar," or it may have been tie or jabot or yoke. Or they say, "If you would just send me that piece of crocheting, I'd know how to do it without any directions." Others say, "If you could just send the piece of crochet along with the directions, it would be so simple and easy." Such a course is impossible, even if there were enough samples to go around. On the other hand, there are thousands, literally, of subscribers who use our crochet and knitting directions and tell us they are the best and simplest that they ever saw. But we would like to please everyone. Maybe that's impossible. But we think we have discovered a method whereby we can satisfy those who wish to see the finished work.

Naturally, it is impossible to send out five hundred Irish crochet motifs such as we published in FARM AND FIRESIDE on August 31st. But we have discovered that we can

introduce our new blue-prints. There is a yoke of Irish crochet for an infant's dress. A series of these small yokes might be used to trim a grown person's waist or dress. Then we present to our readers a very beautiful and unusual Irish lace motif introducing fern leaves and roses. This motif may be used to trim a waist, a skirt or a dress, with equal appropriateness.

The third illustration is that of a small yoke for a child's dress, of Venetian lace. This lace work is made by means of an ordinary needle and thread, over a pattern traced on oil-cloth. Full directions for making the lace may be obtained as well as directions for the above mentioned pieces of Irish crochet.

A blue-print of the infant's yoke of Irish crochet will be sent on receipt of fifteen cents; a blue-print of the rose and fern motif upon receipt of eighteen cents, and a blue-print of the Venetian lace motif will be sent for ten cents. Stamps may be used, as they are more safely carried through the mails than money.

Then, as formerly, we will sell printed directions for these articles. Printed directions for making any one of these yokes will be sent on receipt of four cents in stamps and a stamped and self-addressed envelope. Ad-



Irish crochet yoke or motif for a dress



An unusual Irish lace motif for a waist

send out five hundred blue-prints of an Irish crochet lace motif, and that quite easily. These blue-prints are exactly like seeing the article in blue and white. They are made the exact size, and each stitch can easily be seen and threads counted. If you want to know how many stitches are used to each row, you can count them easily. They are all there, very clear and just the size of the stitches in the finished piece. Altogether, the blue-print is just like having an original piece of lace in which to count stitches, and examine size and shape.

A blue-print and a set of the crochet directions will explain to anyone just how any piece of crochet or knitting or tatting or Venetian lace or embroidery is made. They make it so easy. We have three exceedingly attractive designs with which to

dress all requests for blue-prints, for printed directions, or for both, to Evaline Holbrook, care of FARM AND FIRESIDE, Springfield, Ohio. Be sure to say, very definitely, whether you want blue-prints or directions, or both, and be careful too, please, to be sure that the proper amount of postage is included in your letter.

EDITOR'S NOTE—We find our Irish crochet directions becoming more popular with each issue. Interesting designs in Irish crochet, filet lace and the new filet crochet are to be shown during the winter. An article scheduled for a coming issue describes a baby's set of lace bib, booties, etc., in Irish crochet. The method of making filet lace, as well as jabot and lace-collar designs of filet, are also to appear very shortly.



Small yoke or motif of Venetian lace




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Books of Worth

How to Grow 100 Bushels of Corn per Acre on Worn Soil, by William C. Smith, "of Indiana." Stewart Kidd & Co., Cincinnati. Price, \$1.25. An optimistic treatise on soil-renovation by a man who has succeeded in it. Marred by some erroneous statements as to agricultural science, but a good book all the same in its gospel of agricultural practice.

Some Common Spray Mixtures. Illinois Circular No. 160, Urbana, Illinois. Directions for preparing most of the common sprays used on the farm.

Orange Culture in the Lower Rio Grande Valley. Persons interested in this subject should send for Bulletin 16, of the year 1910 of the Texas Experiment Station, College Station, Texas. Those contemplating the planting of Satsumas are warned that the experiment is hazardous in that locality.

Proceedings of Third Conservation Congress. This congress was devoted to the conservation of our agricultural interests, and its proceedings, now in print, have been well called "A Handbook for American Farmers." A limited number of copies may be had of the Secretary of the Congress, Thomas R. Shipp, Indianapolis, Indiana, at \$1.00 each.

Farmers' General Diary and Record, by J. B. Werlinsky. Published by Rein & Sons Company, Houston, Texas. This book is a farmer's business record, sells for one dollar, and contains blanks easily filled out for a thorough system for the recording of farm facts. The farmer who has not kept books will find this an easy system to adopt. And the farmer who does, may prefer this simpler method.

Alfalfa as a Field Crop in South Dakota, South Dakota Experiment Station No. 133, Brookings, South Dakota. A useful bulletin on an important subject.

Woodrow Wilson

tells "The New Meaning of Government"

The WOMAN'S HOME COMPANION has persuaded Governor Wilson to tell to the women of this nation his views on the new responsibilities of American citizenship. It is a brilliant discussion by the ablest authority in the United States. You will find it when you open the cover of the

November

WOMAN'S HOME COMPANION

Christmas Ideas

The November WOMAN'S HOME COMPANION will solve your Christmas gift problems. It contains fifteen pages of ideas for Christmas gifts; ideas for



Christmas Ideas

boys and girls, bachelors and maiden aunts and mothers and fathers. Every idea can be worked out by our readers.



The Story of a Nurse-Girl

"I am afraid I cannot write well enough," said Nellie Grant, nurse-girl, when the Editor asked her to tell her experiences as a servant in American homes. Read her story in the November WOMAN'S HOME COMPANION; she tells exactly what she saw and experienced in many different homes in different cities, and her observations of the intimate details of family life are amazing.



A De Koven Waltz Song

The November number of the WOMAN'S HOME COMPANION contains, as is customary, a piece of sheet music of exceptional character. The music in this issue is a beautiful waltz song: "Love's Messenger," written especially for the COMPANION by Reginald De Koven, composer of "Robin Hood."



1,500 Helpful Home Ideas

The best experts in America will help you to dress, cook, entertain and live well. The November number has all the regular departments that make the WOMAN'S HOME COMPANION indispensable in every home. Ideas about clothes, cookery, pleasure, children, housekeeping, help, entertainments, clubs, photography; ideas for boys and girls as well as mothers and fathers.



Good Stories

An exciting story of Washington life is "Old Lucy," by Isabel Gordon Curtis, author of "The Woman from Wolverton." Kathleen Norris, author of "Mother" and "The Rich Mrs. Burgoyne," contributes "Shandon Waters," a beautiful story of mother love. "Through the Open Door" is a new novel by Justus Miles Forman, author of "Buchanan's Wife" and "The Stumbling Block." It is an absorbing love story.



The Kewpie Kutouts

The Kewpie Kutouts for November printed in many colors give Dotty Darling's mother and the Kewpie Cook; and there is also a page of verse and pictures by Rose O'Neill, portraying the newest adventures of Dotty Darling, Dotty's baby brother and their fairy playfellows, the cute little Kewpies. The Kutouts, remember, have both fronts and backs, so that when cut out they make real dolls.

Klip off this Kewpie Kewpon



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SUNDAY READING

True Greatness By Richard Braunstein

NOTHING seems to be so misleading as the gospel of success we are so prone to preach. We fire our boys with ambitions to be great, and we dazzle our girls with visions of Florence Nightingale and Rosa Bonheur. Yet the social structure cannot all be tall spires and towers. Most of the material must go into foundations. There must be a hundred soldiers to one captain. There must be a score of stokers below decks to every admiral on the bridge. There must be thousands of clerks to one Wanamaker. We speak of the great ones, but we neglect the rank and file—that noble army of toilers who make things possible. There can be only one president; it takes millions to make a nation. So long as the world shall stand there will be grades and distinctions among men, and the next best thing to being great individually is to serve someone else. The greatest man of all time came "not to be ministered unto, but to minister." "I am among you as one that serveth," was His description of Himself. So speaks a noted preacher. And is it not so? Are there not multitudes of whom we never hear, that are



"I would not say a word, dear"

plodding along, day after day, year in and year out? But they are serving their fellows. They are a noble army of immortals!

They have no place in storied page,
Nor rest in marble shrine;
They are past and gone with a perished age,
They died and made no sign.

Thus can we sing about them, and honor them.

They healed sick hearts till their own were broken,
And dried sad eyes till theirs lost sight;
We shall know at last by a certain token
How they fought and fell in the fight.

Service! It is a word blazoned everywhere in the Kingdom of God. Paul, addressing the Romans, commended himself as a servant.

It is not primarily in what we say or bestow, but in what we are in our spirits that we are judged. If we have the spirit of service, the intelligence and humility of a true servant, the expression will care for itself.

There are a thousand voices calling and large and waiting opportunities everywhere, yet we sit with idle hands, dreaming dreams of greatness. Jesus our Lord, we shall know Him by the prints of the nails in His hands. They are the wounds which He suffered in stooping to lift humanity. And our hands!

There is a poem, the author of which is unknown, about a little girl who, after the death of her mother, commands and cares for her younger brothers and sisters. The roses leave her cheeks, her hands grow calloused with toil. The burdens and cares of her household soon wear her out. At last she becomes ill and, realizing that she, too, must die, there is trouble in her heart. It is that she has not attended to religion. She sends for her girl friend and tells her: "I am tired out with care, and have had no time for prayer, and now when I see the Lord Jesus what shall I say?" and her friend replied:

"I would not say a word, dear, for sure He understands.
I would not say a word at all; but, Mary, show him your hands."

In God's judgment there is no word which any of us can say. We have no plea. But if in loving service we have lifted the fallen, and if in consecration to a lofty aim we have done some noble deed, spoken some noble word, have sought to make the world happier and better because we have lived in it, then, though our lips be mute, heaven's gate will open at the show of our hands.

Emerson said whatever you do, do it the best you know how, and though your home be a cabin in the wilderness, the world will beat a track to your door.

The Great Dipper, according to a legend, was once a cup of cold water in a little child's hand. During a fatal drought the child had gone into the woods in search of water. Her quest was rewarded, and she was about to raise the dipper to her lips when she suddenly remembered that her mother was parching with thirst, and she started homeward with the water untasted. On the way she paused to pour out a few drops for a poor, half-dead beast, and the dipper turned to silver. Reaching home, she gave the water, untasted, to her mother, who in turn refused it—and the dipper turned to gold. Just then a stranger knocked at the door and asked for a sip of cold water, and the cup was handed to him. Immediately it became studded with seven jewels and passed into the sky. Thus, according to the story, the starry Dipper is merely the miracle of unselfishness. "Whosoever shall give to drink unto one of these little ones a cup of cold water only in the name of a disciple, verily I say unto you, he shall in no wise lose his reward."

To help, not only some brother to live, but to live better. To mitigate another's pain; to give some wanderer a song for the night season. This is true greatness. This is worth while. A certain king had for his motto on his crest the words, "I serve." We can all be kings and queens if we take this motto for our own.

The Beauty in the Shadows By Helen Blair

DO YOU ever bewail "the dark places in your life"? Are you ever found with a long face discussing, with a friend, "the shadows that have come over your home"?

We are in the habit of indulging ourselves in this fashion and believe ourselves meritorious of much sympathy because of this "clouded" condition.

But clouds and shadow and darkness are as necessary to life as is the brightness of noonday. What would become of our corn crop were there twenty-four hours of dazzling sunlight, daily? How would your physical body repair wasted tissues if there were no gentle night-times conducive to sleep? The dark times, you see, are as necessary as the bright ones. May it not be so in life that is mental and spiritual as well as material? And if you don't regret nightfall and the darkness, why complain so boisterously because the soul, too, must rest in the shadow at times?

A critic named Hartmann, in criticizing the style of painting adopted by Whistler, regrets, among other things, that the present-day methods of lighting have so diffused brightness into daily life that there are no longer the deep, rich shadows, the dusky half-tones, which made possible the wonderful picture effects of the great masters.

And surely the Great Master, Who is making of our lives a picture noble and fine, must put some shadows on the canvas or leave a result bare, flat, uninteresting.

We need shadows, we need to learn to see the beauty in them. We need to remember that an Eastern poet long ago, when striving to show his fellow men the glorious completeness of the Great Master's goodness, likened it to "The shadow of a great rock in a weary land."

The Troubled Brook By Cora A. Matson Dolson

HE OWNS the brook above me,
Where gray fowls dive and play
And trouble deep the water
That murmurs down my way.

I wish I were sole owner
Of this cool running brook,
From where the clear spring bubbles
Far in the woodland nook.

I vow that none should venture
To trouble or defile
The pure and limpid water
That courses many a mile.

And yet, perhaps, 'twere better
It lend its joy to life,
To cleanse the grime of labor
And soothe the wounds of strife,

Than simply flow and sparkle,
Shut in from dusty wing
And all God's thirsty creatures—
A pure but useless thing.

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Municipal Hallowe'en Fete
By Jane A. Stewart

THE diversity and humor of the traditional features of Hallowe'en have made it popular with the large majority of fun-loving people. A number of communities have taken advantage of this to make the date the occasion of a lively municipal celebration.

The historic town of Burlington, New Jersey, claims the distinction of being the first to hold a "Hallowe'en Carnival" as a civic function, and many other small towns and cities have adopted the idea, including Wilmington, Delaware; Newcastle, Bristol and Norristown, Pennsylvania; Newark, Vineland, Millville and Bordentown, New Jersey.

In Burlington, the birthplace of the idea, the Hallowe'en Carnival is an event of far-reaching importance and influence. Not only the old town itself, but the whole county and neighboring towns and villages take part in the event.

The celebration is heralded by civic proclamation issued by authority of "Ye Hallowe'en Committee":

"Be it proclaimed by ye heralds, far and wide, that on thirty-first night, in ye month of October, sorrow and dull care shall be banished in ye city of Burlington, which is on ye River Delaware, for upon this joyful occasion ye olde town will be turned over to King Momus and his followers, therewith to make merry. Hear, to it, all ye people! Decorate your homes with civic colors, which are purple and white, and come, one and all, to greet ye merry host. Thus has it been decreed."

The energetic Hallowe'en Committee, in whose hands the citizens place the preparations for the event, spare no pains to make it a success as a demonstration and as a spectacle. The various local bodies lend active coöperation, including the Grand Army, the Sons of Veterans, the Fire Department, the Männerchor, the Odd Fellows and other orders, the Grangers and other farmers' clubs, the Boys' Brigade, military and patriotic societies and social clubs, among which is the Lobsters' Club, the originator of the Hallowe'en Carnival.

About thirty organizations take part in the parade, preparing floats and unique impersonations. The procession, which is sometimes fully three miles long, marches under the glare of thousands of red fire and calcium torches and along the entire route houses are decorated with flags and Jack-o'-lanterns. As many as two thousand marching masqueraders have appeared in line, and the visitors sometimes number forty thousand. Good order is insisted upon. Anything like roughness or license is prohibited, the official edict being "Be happy, but be good." A good rule for any day.

Emulating Burlington, other New Jersey towns annually conduct an organized Hallowe'en observance which appears to afford great gratification to all concerned. Social clubs, lodges, organizations and citizens in Vineland generally turn out by the hundreds, led by the City Band and the band from the New Jersey Training School, and march for prizes. Floats are seen representing wedding-feasts, trolley-cars with the conductor taking fares, the Junior Mechanics, with "the little red schoolhouse," veterans of the Soldiers' Home, candy-makers at work, etc. Two hundred students of the High-School Hallowe'en Club take part. The money for prizes is appropriated by the town council, and prizes are awarded not only for the best parade features, but also for the best decorations.

The Hallowe'en Committee of the town of Millville, New Jersey, also offers prizes for masqueraders and illuminations. The large glass-factories shut down until after the parade, in which hundreds of mill-hands and young people take part. High-school classes organize to compete for the prizes. And among the races is an automobile contest.

The country people flock in by the hundreds to the Woodbury, New Jersey, carnival, and the crowds are even greater than at historical celebrations. Lodges, patriotic and military bodies, fire and police organizations, get in line. Merchants and manufacturers decorate their places and burn red fire along the line of march.

More than \$100 in prizes—cash and valuable gifts—are awarded the Hallowe'en Carnival competitors in Bristol, Pennsylvania, the grand prize being presented to the organization making the finest appearance, and others to the most comically dressed organization, the best historical display, the best merchants' team, the best designed float, the handsomest industrial float, the most comically dressed man, etc.

At Norristown, Pennsylvania, the organized Hallowe'en observance attracts one thousand or more participants and is marked by the presentation of some forty prizes. Country people come in by wagon-loads to see the sights.

A number of Delaware towns conduct Hallowe'en festivities. The New Castle town council appropriates \$200 for the event.

In Wilmington the mercantile association is sponsor for the celebration and many organizations take part. The "Old Home Week" is ushered in by the Hallowe'en Carnival, which begins with the blowing of whistles and ringing of bells at nine o'clock. There are the governor's reception, luncheon, military drill and masked parade before the day closes. Special rates are given on the railroads, and all roads lead to Wilmington on this festal day.

Among the most notable of city Hallowe'en celebrations were the events outlined at Albany, New York, including the symbolic unlocking of the "four gates of the city" and the reception to Queen Titania on the broad stairway approach to the State Capitol. Unhappily, the pretty celebration, like similar events in Pittsburgh and elsewhere, was marred by unrestrained license and ribaldry shocking the sense of decency.

Such tendencies, it is easily seen, are much more easily stamped out in smaller places where the Hallowe'en Carnival as a source of innocent diversion and merry-making under proper restraint is likely to have its best and most sustained vogue.

"Bumblebees"

THE queen bee is fertilized by the drone and deposits her eggs in the various cells in the comb, and the development of those eggs into the big lazy drones, the big, active and valuable queens, or the stunted, little, active, irritable workers is a question of the size of the cell and the amount of food they eat.

Maybe if they were fed on paregoric and Mrs. Soothlow's Teething Syrup they would make bigger and better bees, maybe they would make bumblebees?

If environment and amount of food makes this remarkable difference in bees,



what effect would the RIGHT ENVIRONMENT AND RATIONAL FEEDING have on a thousand generations of HUMAN BEINGS? E. M. R.

See to it that to-day's work is done so well that it won't have to be done over when to-morrow's work is in progress.

Pestilence and Diet

THERE is a disease from which the people of the Far East suffer, called "beriberi" or "epidemic dropsy." It is a deadly pestilence and, while not easily communicable, frequently becomes epidemic. Prior to 1884 it was very prevalent in the Japanese navy. On that date better rations were provided for the sailors, and the disease gradually disappeared. It is believed to be the result of an "unbalanced" ration. Those who live on rice, especially polished rice, are especially liable to it. In a recent epidemic in the city of Calcutta, a community of Marwaris living in the heart of the infected district escaped beriberi entirely. In India people belonging to different "castes" or holding to different religions are apt to eat different foods. The Marwaris' diet is different from that of the Bengalis, containing more phosphorus. Europeans living in Oriental countries seldom have beriberi, if they eat European foods. Thus is the importance of the "balanced ration" to human beings as well as animals made clear.

Everyone knows that the mind makes the digestive juices flow. When the mouth "waters" at the thought of something appetizing, the stomach "waters" too—that is, the gastric juices flow out into the stomach. Hence the importance of the state of the mind to the operation of digestion. Dyspepsia is as often a mental state as a condition of the stomach. An Italian experimenter finds that when a person is very tired the digestive juices will not flow at the idea of savory food. Three hours' repose are necessary to restore the natural conditions in this respect, in cases of severe fatigue. Mental weariness causes even more marked effects in this direction than does physical. The gastric juice secreted after great fatigue is very low in digestive value. All of which means "When very tired, wait a while before eating, if possible."

"You Cannot Go With Me!"

By Alice M. Ashton

ONE afternoon, recently, while I was left alone in a motor-boat anchored near shore, my pleasure was spoiled by the heartbroken sobs of a little girl left on the dock while two children a little older paddled about the stream. I could so well realize her sorrow and disappointment at being left behind for no good reason except that "you cannot go with me!" And at the same time I could see the older children's point of view.

How well I remember a certain troublesome little cousin who must always be looked after wherever we went, and how her sister and myself resented her presence! I fear we were often really unkind to her, yet it was truly trying never to be able to play our wonderful make-believe games without her sharp little ears and prattling tongue. We even went so far as to invent a language of our own, incomprehensible to her. At that time I saw only the older child's side of the question. But that afternoon by the dock my sympathy was with the unhappy little atom left on the scorching planks.

"How do you manage to keep harmony among your children?" I asked the mother of three daughters.

"Well," she confessed, "there used to be a continuous strife among them about that very thing. My fifteen-year-old daughter looked upon the society of her ten-year-old sister with supreme contempt, and she in turn felt the five-year-old 'baby' to be utterly impossible. When it seemed as if I could no longer endure my position as perpetual peace-maker, I resolved to attempt a reform. One day I planned a visit in the country, about which I knew my eldest daughter had great expectations. But when she spoke of accompanying me, I said pleasantly but positively that no one but 'baby' could go with me! I gave no reason for my decision, except that I preferred to go alone. Of course, she resented this and was bitterly disappointed.

"Upon my return, I called her to my room.

"My dear," I said, "I see you are hurt because of what I did to-day. There are times when with your father or some of my special friends I enjoy an outing without any of my daughters, and you have always remained at home very cheerfully; but to-day when there was no reason why you should not accompany me, did you not feel the disappointment harder to bear?"

"Yes, Mother," she admitted.

"That is equally true with your little sisters," I said quietly.

"Her face flushed uncomfortably, so I hastened to add:

"I do not expect you always to be bothered with the children, Isabel, but I do not understand how you can have the heart invariably to cut them out of all your pleasures. It makes them unhappy or cross and resentful, it causes me a great deal of trouble, and it makes our home very discordant."

"Isabel soon began planning amusements especially for the children, and only a busy mother can realize what a help this new state of affairs was to me.

"One day she came to me laughing: "'Mother,' she cried, 'those kiddies of ours are the very funniest things I know! I used to wonder how you endured having them with you so much, and now I wonder how I could have overlooked their attractiveness!'"

"And this new understanding," added mother, "is one of my greatest comforts."

There are many rich men in this country who have said that they would like to die poor. But it seems that they dread getting poor as much as they dread dying.

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Designs by Miss Gould

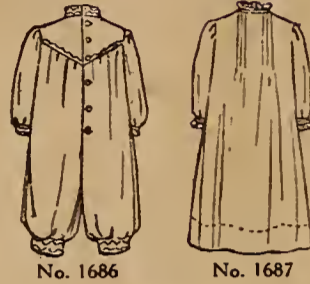


No. 1886—Norfolk Waist
32 to 40 inch bust. Material for 36-inch bust, four and one-half yards of twenty-four-inch material, or three and one-eighth yards of thirty-six-inch material. Price of pattern, ten cents



No. 1686—Night-Drawers with Pointed Yoke

1 to 6 year sizes. Material required for medium size, or 4 years, four and three-fourths yards of twenty-four-inch material. This pattern, ten cents



No. 1686

No. 1687



No. 1687—Girl's Tucked Nightgown

6 to 12 year sizes. Material required for medium size, or 8 years, four and three-fourths yards of twenty-four-inch material. This pattern, ten cents

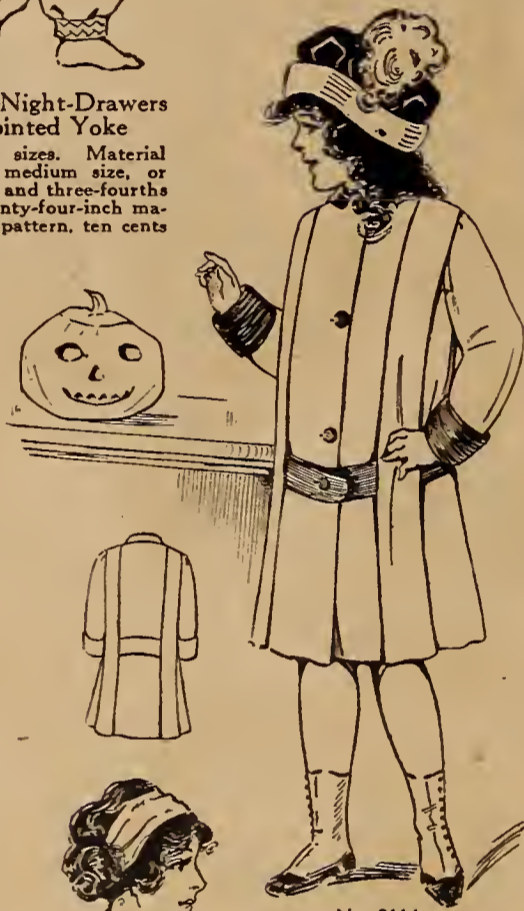


No. 1894—Kimono Waist
32 to 40 inch bust. Material required for 36-inch bust, one and one-half yards of thirty-six-inch material, two and five-eighths yards of lace twenty-four inches wide. Price of pattern, ten cents



No. 2129
No. 2130

No. 2129—Yoke Waist with Sash
32 to 42 inch bust. Material for 36-inch bust, two and five-eighths yards of thirty-six-inch material, with one-half yard of net for gümpe and undersleeves and one yard of lace for frills. Price of pattern, ten cents



No. 2114

Illustrated on this page are some of the most important winter clothes, things that will be needed with the beginning of the first real cold weather. Woman's Home Companion patterns may be had for every design shown. They may be ordered from Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado



No. 1639—Double-Breasted Overcoat
32, 36 and 40 inch bust. Material for 36-inch bust, seven yards of thirty-six-inch material, or five and one-fourth yards of fifty-four-inch material. Ratine, that new soft coat material, is a practical fabric for this overcoat. Price of pattern, ten cents



No. 1456—Wrapper with Princess Back

34 to 42 inch bust. Material for 38-inch bust, eight and three-fourths yards of thirty-six-inch material, or seven and one-fourth yards of forty-four-inch material. Pattern, ten cents



No. 1022—Work-Apron with Cuffs and Cap

Pattern cut in one size only—medium, 36-inch bust. Quantity of material required, three and one-fourth yards of twenty-seven-inch material. The price of this pattern is only ten cents



No. 2130—Three-Piece Gathered Skirt

22 to 32 inch waist. Material for 26-inch waist, three and three-eighths yards of thirty-six-inch material. Price of this pattern, ten cents



No. 1886



No. 1456

No. 1022

No. 2114—Plaited Coat in Norfolk Effect

2 to 12 years. Material required for 4 years, three and five-eighths yards of twenty-seven-inch material, or two yards of forty-four-inch material. Price of this pattern, ten cents



No. 1894

No. 1639

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You may order our goods with the understanding that if, after 30 days' trial, they do not come up to your expectation,

you may return them at our expense. We will refund all money paid, including freight and de-

livery-charges, and MAKE NO CHARGES FOR A REASONABLE AMOUNT OF GOODS USED IN TRIAL.

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Now, reader, that Guarantee is plain and specific. It means just what it says. If we can't please you with our groceries then we will please you by paying the entire cost of trial.

And, remember—Larkin Co.'s Guarantee is as good as a National Bank Note. Back of it is a record of 37 years of faithful service to 2,000,000 customers. On every sale the reputation of a great business is at stake. If your order amounted to \$10,000 Larkin Co. would not keep a penny of it unless they knew you were pleased and satisfied. Now let us tell you how we can, and do, offer you these amazing grocery bargains.

Why You Get These Grocery Bargains

Our ability to buy raw materials and manufacture goods at low cost, together with the great buying capacity of our grocery department, is what makes these prices possible.

We Are Big Manufacturers

Larkin Co. is one of the largest manufacturing and distributing concerns in America.

You know us. You have heard of the "Larkin Idea." You or your friends have no doubt already done business with us.

Our business, after 37 years, has reached a huge volume, with 2,000,000 customers.

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We manufacture and sell groceries and, in addition, a great many other products.

Those that we do not manufacture to best advantage in our own great factories we buy in immense quantities from other manufacturers and sell to you at but a trifle above the manufacturing cost.

We know no better way to advertise our entire business than to feature one department—our groceries. Everybody uses groceries.

Some we are forced to sell at times at less than cost, in order to make good our promises.

Remember, too, ours is a factory-to-family business. No jobbers, no wholesalers, no retailers draw profit on groceries you get from Larkin Co.

And our bargains are offered not once in a while, but every day.

Think of buying single packages at other factories! Why, even dealers can't do it at most factories, for the only quantities that most factories will sell are too large for anyone but jobbers.

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Send Coupon or Postal for Grocery Book of 200 Bargains

We can't describe and price on this page one-tenth of our Grocery Bargains. You must send for our book of Grocery Bargains to really appreciate what we are doing. This book is like a sanitary grocery store where coffee, tea, sugar, canned vegetables, etc., all in clean packages, free from dust and flies, are all greatly underpriced. Like a big grocery, not 5 or 10 miles from you, but a grocery brought right to your house, where you can do your buying at the most convenient moment. We guarantee SAFE, QUICK delivery on all orders. And under our plan your freight amounts to practically NOTHING (Not over 5¢).

Won't you send now for the Book? It will do you good to see our goods and our prices.

Send the coupon, or write this on a postal: "Send me your Grocery Book." Then add your name and address and mail to Larkin Co., Dept. 20, Buffalo, N. Y. The Book will reach your home by return mail.

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	Our price	Usual price
½ lb. imported tea, choicest growth.....	\$0.17½	\$0.35
1 lb. superior cup-quality coffee26	.35
2 lbs. roasted cereal .....	.15	.30
½ lb. Phosphate baking powder .....	.07½	.15
2 packages gelatine .....	.10	.20
5-lb. pkg. fancy table salt	.05	.10
2 oz. double strength flavoring extract.....	.10	.20
49 lbs. highest grade Patent Spring Wheat Flour, milled from choicest No. 1 hard wheat.....	1.45	1.80
5 lbs. fancy rice.....	.30	.50
3-lb. can choicest tomatoes	.10	.15
2 5-oz. cans Cove oysters..	.16	.20
2 3-lb. cans apricots.....	.40	.60
1-lb. package Boraxine Soap Powder .....	.05	.10
10 bars Sweet Home Family Soap .....	.25	.50
3 lbs. Gloss Starch.....	.12½	.25
1-lb. can lye .....	.05	.10
1 lb. assorted chocolates ..	.30	.60
2½-lb. can Lemon Cling peaches (fancy).....	.22	.35
2½-lb. can California pears (fancy) .....	.23	.35
1 can pork and beans with tomato sauce .....	.07½	.15
2-lb. can young sweet corn	.09	.15
¼ lb. chocolate .....	.06	.12
1-pint jar Queen olives20	.35
1 package allspice03	.05
	\$5.00	\$7.97

But You Must Help Us

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FARM AND FIRESIDE

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ESTABLISHED 1877

SATURDAY, NOVEMBER 9, 1912



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With the Editor

CITY people are prone to laugh at the manner in which the rural half sees calamity in the clouds and hears it in the winds. They assert that the average farmer is either by heredity or environment a sort of pessimist, and that, while he would not assert, as the philosophical pessimist does, that of all possible worlds conceivable by the mind of man this world is the worst, he is usually found looking on the dark side of things.

"If it's hot," says my friend, the merchant, "my farmer customers draw long faces and say that two days more of it will burn everything up. If it's cool, they predict an early frost and no corn crop. If it's wet, they insist they can't save the hay, and if it's dry, that the hay crop will be a failure. You can't please a farmer."

Old Mr. Whalley, of my boyhood days, advised all immigrants who steered their prairie-schooners in his direction, not to locate in Iowa. "I never saw such an infernal country," he was wont to say. "It's too hot or too cold, or too wet or too dry, or some dumber thing or other all the time."

My merchant friend insists that old Mr. Whalley's is the typical farmer's attitude—an attitude of pessimism.

I'm sure this isn't quite true. I have known among my farmer relatives, friends and acquaintances some of the cheerfulest souls in the world. And I don't rely solely upon personal observation. Through the wider contact of these columns I meet and greet, in an impersonal way, ten times—perhaps a hundred times—as many souls as I can touch personally, most of them farmers. A year and a half ago we used Loveman's "Rain Song" on our front cover—a poem of the most bubbly optimism. Its singing quality, and the simple lilt of the lines, inspired dozens of our readers to the writing of parodies on it. Now most of these parodies took the blue view as against the poet's roseate one. "It isn't raining rain to me, it's raining unpaid bills." "It isn't raining rain to me, it's raining cats and dogs." These are samples of the farm pessimism which came to my desk in good-natured protest against the poet's making light of soaked fields, washed hillsides and shivering cattle.

But in contrast to those who insisted that to them it was raining real rain of the drizzliest, coldest, soakingest sort came other dozens of letters—not parodies. These were too full of appreciation to descend to parody. They were from those who felt the deep and underlying truth of the verses. These had pinned the poem on the wall, sent it to sick friends, read it at fireside or bedside, and found peace and comfort in the fact—the indubitable fact—that on the wettest April day it is raining daffodils, it is raining roses down, it is raining fields of clover-blooms.

So the philosophy of old Mr. Whalley is not universal among us, nor is my merchant friend quite just in his verdict upon us. Yet it cannot be denied that a gloomy outlook is easily adopted among those who are at the mercy of the elements, as farmers in a large measure are.

The crops are sure to mature every year—as a general proposition. That is, taking the world over, the earth will feed its children. But my farm is not a general proposition. It is a particular one. It may fail—and I can't help feeling apprehensive that it will. If I don't watch out, I'll be apprehensive all the time. In such a case I shall revert to the paganism of my savage ancestors, who sacrificed to the gods of hail, rain, frost, thunder, wind and cloud because they were afraid of them. These things are stern and threatening beings now, just as they were when our pagan forefathers made deities of them.

A few degrees colder or warmer, a few inches more or less rain, a season a few days later or earlier—these are disturbances in a very delicate balance of conditions. They may spell failure. The farmer knows this. The merchant and the poet do not—or, if they do, they don't feel it.

THERE are various definitions for the word "optimist," just as there are various sorts of optimists. One sort of optimist is a person who believes in a great body of pleasant theories which he knows aren't true. Of all people, these optimists bore me most. I think they sadden me even more than the pessimist who, when offered a choice of evils, takes both. There are farmers of both sorts; but hard, cold (and wet and dry and other inclement) facts tend to knock out of the head of the man who is bond-servant of the soil all fine-spun and baseless fancies as to the inherent kindness and sweetness of Nature. The optimist who develops optimism behind the plow or beside the churn is sure to have it of good and enduring quality.

Suppose, for instance, that your cash crop is tomatoes. The cool July and August has held them back in ripening, and a hot September has brought them all on at once with a rush. By straining every nerve, and with everything going well, you can see your way toward getting the crop to market. Your best horse sickens on the road with a load, and in twelve hours is dead. You come home to find that the next best, running in a pasture supposed to be free from snags and all other dangers, has been found with a deep, bleeding wound in his breast. One team out of service, and a veterinarian's bills to pay.

On top of this comes rain. You feel sure that this equinoctial storm will wind up with frost. The season's fodder seems doomed. The rain rains on, day after day, the roads become quagmires, the wagon sinks to the hub in the tomato-fields so you can't haul over half a load, the tomatoes—your cash crop, mind!—swell up and "bust"—and still it rains and rains and rains.

Kind of hard to think of daffodils and roses and buccaneering bees and clover-blooms at such a time, isn't it? And yet we needed that rain!

WE SOLD the tomatoes from Coolfont Farm this year for thirty-two cents a crate. Growing them as we did in the orchard, I suppose there was a profit in them. We should have had the land to cultivate anyhow. Tomatoes go well with orcharding in West Virginia—or at least in that part of the State where tomatoes grow to perfection for canning purposes.

I want to repeat again, however, that I don't see the justification for much more apple-planting. We have come to the point now at which the feverish apple boom of the past few years begins to affect the market. The crop this year is immense. We have had similar experiences in the past; and after each spasm of planting, the fruit has sold for about the cost of production or less for several years. An apple-tree grows for a long time, and bears a lot of fruit, and when it is neglected, it can be rejuvenated whenever the market justifies. The millions of young trees which are being tended so solicitously now in every apple-growing region are in the ground, and alive, and they are going to bear. Pessimism? Well, some people can't tell the difference between pessimism and common sense.

Robert L. Quick

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FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/2 inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.

FARM AND FIRESIDE



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Vol. XXXVI. No. 3

Springfield, Ohio, November 9, 1912

PUBLISHED
BI-WEEKLY

The Perils of Progress

APPLES, peaches, pears and other fruits are now grown by specialists rather than by the ordinary farmer who also grows live stock, grain and hay. The specialist is a man who has worked out the whole problem of fruit-growing, knows when to spray and why, how to cultivate and use cover crops, when to fertilize, and when not to do so. He ships in carload lots, or works up trade as skilfully as a drummer.

Progress in fruit-growing has cut through the ranks of farmers like a knife, dividing the skilful and successful from the unskilled and unsuccessful.

Is not this what is likely slowly to come about in all sorts of farming?

We seem to be entering upon a period of change and rapid progress. Farm problems will be wrestled with everywhere on lines quite new to most of us. The study of better methods will be a fine thing for those who master them; but, what of those who do not? Will they not be actually worse off than now? Will they not be face to face with a more bitter competition?

Let us suppose that improvement goes on in corn-growing and cotton-growing until the unskilled man, or the old-fashioned one is as much handicapped as the old-fashioned man now is in apple-growing. Such progress is quite possible within a decade or so. What will become of the unskilled?

The question is worth a little thought. Progress hath her perils—she upsets existing conditions. It seems highly advisable for every one of us to master every detail of the science as well as the art of our respective farm processes. And it is certainly necessary for our governments to see to it that our educational system is such that progress may unify rural life into an intelligent whole, rather than divide into an upper layer of specialists and a lower body of the unskilled.

Useful Everywhere

AN ESTEEMED friend of FARM AND FIRESIDE writes: "I haven't the slightest idea who to thank for FARM AND FIRESIDE, which has been coming to me for about a year. Suffice to say that it is very welcome. Not a few suggestions from it have been put into practical operation here."

This message of cheer comes from Mr. Edgar T. Hole of Kisumu-Mombasa, British East Africa. The principles of agriculture are universal. A good agricultural paper which is good in Maine is good in California,—or in British East Africa. There is no such thing as an isolated fact or an isolated principle. And there is no such thing as a strictly local problem. All problems of farming occur here and there in all climates and in all lands.

Important Little Things

MOST farmers know now that the little plants in the soil, too small to be seen, are very important. These are called bacteria, and their homes may be seen in the little white knobs on the roots of healthy clover, vetch, locust, cowpea and other leguminous plants. All of us are now aware that these little plants are able to take nitrates from the air for their own good, and that of the plant on which the bacteria grow, and that when the crop is plowed under, they enrich the soil. We are learning more about the influence of this microscopic life in the soil. Experiments show that phosphates and nitrates are absorbed by the soil more rapidly when there are plenty of bacteria in the soil, than when there are none. The problem of getting the applied fertilizers to the plant is therefore a biological question as well as a chemical one. Life in the soil helps even when commercial fertilizers are used. In some cases more than one eighth more phosphoric acid

was absorbed by crops on inoculated soil than on sterilized soil. Potash and ammonia also were more freely absorbed. Rye planted in two soils equally rich grew faster in the inoculated soil. Science thus shows another reason why we must keep the soil alive with bacteria through legumes in the rotation.

Guernsey cattle in their native island are practically free from tuberculosis. Doctor Bishop states that only six animals out of 1,364 exported in the past three years have been found tubercular by test. There was no tuberculosis in the Guernsey Island herds prior to 1906, when it was introduced from England. It has been stamped out by drastic laws.

Sulphur Again

BOULLANGER, a European investigator, finds that the application of sulphur is of benefit to plants under ordinary conditions. He tried it on carrots, beans, celery, lettuce, chicory, potatoes, onions and other plants. This agrees with the conclusions of Hart and Stephenson of Wisconsin, whose work has been described by Professor Hart in FARM AND FIRESIDE. Our ancestors applied sulphur to their crops in the form of land plaster, which is ground gypsum. Sulphur is also found in the ordinary superphosphate or acid phosphate so widely used. Progressive farmers will do well to test out gypsum on their lands. Sulphur is as necessary to the plant as any other mineral plant food, and the supply in the soil is more apt to be scanty than we have been in the habit of thinking.

Grass and clover seeds have furnished some record money returns to growers from individual loads marketed during recent years. In this respect, we must not overlook the "spud" as sometimes being a high-dollar product. A central Maine farmer hauled a two-horse load of potatoes three miles to market last March, for which he received \$201. The load consisted of 185 bushels and the potatoes were raised on slightly less than three-fifths acre. At the same rate, his gross income from his ten acres would approximate \$3,120.

Gasolene Plowing

IT IS out on the prairies that the gasolene and oil engine is coming into its own as the successor to the horse. A Topeka man recently counted sixty-one traction-engines at work plowing the fields of Kansas along the railway line between Syracuse and Topeka, and within view of the train. One wholesale dealer in Kansas sold twenty tractors before the first of August of this year. The Kansas Historical Society recorded newspaper accounts of nineteen sales of tractors in central Kansas in one week this year, and gleaned from country newspapers items showing twenty-seven farmers starting their traction-plows in the same time. It is estimated that there are from two hundred and fifty to three hundred engines pulling plows in Kansas. And Kansas is only one good-sized quadrilateral block of the engine country.

If all our small fields and farms were capable of being thrown together for plowing purposes, the economy effected by the use of such machinery would not profit the big farmer and landowner exclusively. But of course such a thing could not be done save by coöperation, and coöperation, you know, is not much in the American farmer's line. Not now, at least.

*The errors of the summer's plans are to be discovered
in the cribs at autumn, but it takes the eyes
of wisdom to see them*

Better Credit Facilities for Farmers

PRESIDENT TAFT'S statement advocating government aid to coöperative farmers' banks puts him and the influence of his office back of the movement which this paper has been advocating for years.

The Southern Commercial Congress, representing the States from which Governor Wilson received most of his votes, has taken the laboring oar in the movement for better agricultural credit. The Progressives are enlisted on the side of better rural conditions. We can confidently expect, therefore, that the next four years will see established in the United States a system of banks like the Raiffeisen coöperative banks of Europe, and also coöperative land banks for furnishing loans on farm mortgages at better rates than can now be obtained.

A Minneapolis paper criticized Mr. Welliver recently for suggesting that any better credit is needed for farmers. Ignorance of real conditions may perhaps be excused on the part of a person who knows nothing except what he sees in other papers. Now that Mr. Taft has spoken, however, even the standpat press may take it as certain that American farmers are not as well off as they should be in the matter of getting loans. They pay on the average over eight per cent. per annum for money to carry on their farming operations, while the farmers of Europe are accommodated at from three per cent. to four.

The Raiffeisen banks are the ones which loan to farmers on personal credit. They loan the smallest sums. They may almost be said never to lose loans. This safe business is managed by the farmers themselves. The loans are made for no other purposes than that of production. A farmer in one of these societies cannot borrow money to buy a parlor organ, or a buggy; but for a sow to rear him a litter of pigs, or a flock of fowls to produce eggs, or a load of fertilizer for his fields, or for greenhouses, or feeds for balancing his rations, he may borrow as small a sum as he desires and as much as the committee in charge of the loans will give him.

He gets these loans at a very low rate of interest, and he pays them at any time he feels like it, and in such small sums as he may be able to raise.

These banks are independent of all financial princes, powers and potentates. They make no money for anyone but the farmers.

In parts of this country, especially the east and south, such banks are sorely needed. They will be good things everywhere.

Why is Tenant-Farming Increasing?

THROW out of the window a handful of diamonds, and they will be picked up by the casual passers-by. But within a month all these precious gems will be in the hands of the rich. Throw out pennies and they will be picked up by the same class of pedestrians, but they will remain in the hands of the ordinary people who get and spend pennies. Land gravitates into the hands of the rich just in proportion to its rise in value.

In the East tenancy is much rarer than in the central West. It is rarer in Wisconsin than in Iowa. The reason is that there is more land in Iowa than in Wisconsin, a quarter section of which is able to support one family in town and another on the farm. Is this a good thing for Iowa and Iowa farming? Certainly not. The land should be worked by the people who own it. This does not imply that no man should go upon a

farm until he can buy it. On the contrary, the conditions are more favorable now than ever before for the tenant farmer who will keep his money for working capital and rent land. But this does not prove that tenancy is anything but an evil. That it is an evil is perfectly clear. What is the remedy for it? "Well, that's something else again."

The Profitable Farm Poultry-House

The designs here suggested are practical and well adapted to farm use. The first writer lives in Wisconsin, the second in Maine, and so what is said applies to northern conditions. In the Southern States it is far better to build for coolness and plenty of air. Drafts are of no consequence in warm weather. Much southern poultry has been damaged by too "good" a house. These northern ideas, however, can be easily changed to meet the needs of the poultryman wherever he may desire to work. EDITOR.

A House for One Hundred Hens

By F. W. Kazmeier

FOR the reason that on most farms one hundred hens is about the number kept, the following plans and descriptions are based on a house that will comfortably accommodate that number.

When you build houses for chickens, you want to keep in mind their health and comfort. Proper housing increases egg production, and improper housing decreases it. Locate your poultry-house on a light, porous soil, like gravel, somewhat higher than the surrounding ground. Build it on the south side of your farm barn, not immediately next to it, but close enough so that it

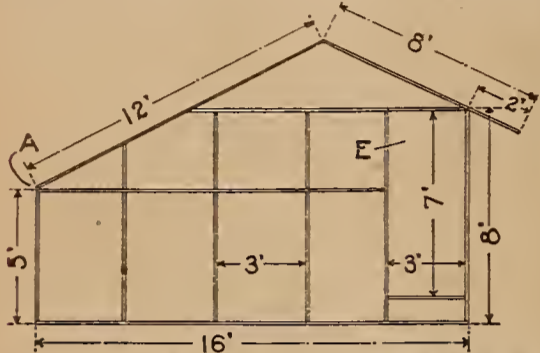


Fig. 1. East end view: A, roofing-paper goes right over corner; E, door

is sheltered from the cold north winds. If this is not possible, build it on the leeward side of your orchard or woodlot. Always face it to the south, so the windows will admit all the sunlight possible. Allow about four square feet of floor space per fowl. A good size to build for one hundred fowls is sixteen feet wide and twenty-five feet long. If you desire to keep more, the length or the number of houses may be increased.

A well-built poultry-house should be dry, well lighted and well ventilated. Fresh air in abundance is one great essential to be always kept in mind.

The only satisfactory floor for a poultry-house is a concrete floor laid on a sub-filler of cobbles or common field-stones. The concrete mixture that has given good service is made of the following proportions: One part cement, two parts sand and three parts gravel. To get a smooth and hard surface on top of the floor, tamp it down well, so the water and cement will rise to the top, where it will harden.

The foundation should be of concrete and common field-stones and should come at least six inches above the surrounding ground. The concrete mixture for foundation is the same as for floor. Foundation walls should go beneath frost line, but to within six inches of the surface. For that no concrete need be used. All that is necessary is to fill the trench with small stones.

Three Sides of the House Should be Air-Tight

Another very important factor in the construction of a poultry-house is that there be absolutely no drafts. This can only be accomplished by building the three sides air-tight. Allow all fresh air to come in one side, preferably the south side, and even there if possible above the fowls.

The house here shown in Fig. 1, Fig. 2 and Fig. 3 is built twenty-five feet long and sixteen feet wide. The front side is eight feet high and the rear five feet high. The rear wall and west end are built solid, with no openings whatever. In the east end, near the front, is a door six inches above the floor, seven feet high and three feet wide. The roof is not allowed to project in the rear or north side.

Both roofs, rear wall and the two ends are covered with a good grade of roofing paper. The entire building is constructed of framing 2x4's and single boarding.

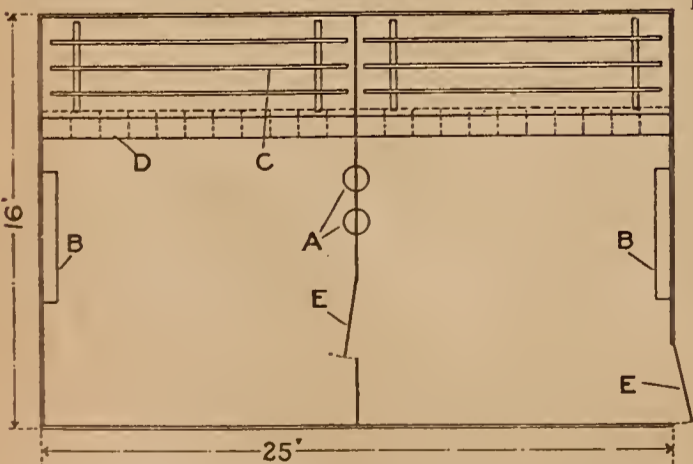


Fig. 2. Floor plan: A, water-fountains; B, dry-mash hoppers; C, roosts; D, nests; E, doors

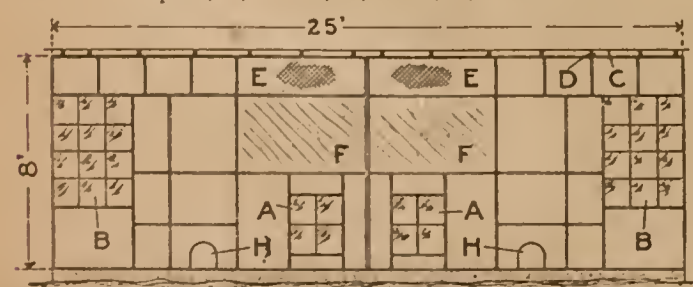


Fig. 3. Front view: A, glass windows; B, large windows; C, roof boards; D, rafters; E, openings covered by wire netting; F, large opening covered with muslin; H, chicken exits

The south side of the roof is allowed to project two feet. This projection will keep rain and snow from beating in through the ventilation opening in the front. This opening is eighteen inches wide and five feet long. Have one of these openings for each pen or two in the house. These openings are open all the time, day and night, and summer and winter. No provisions are made for closing these openings, because under no conditions should they be closed.

In addition to these ventilators, there are, immediately below, two larger openings covered with wire netting and a drop or hinged muslin-covered curtain, three feet wide and five feet long.

About two feet below these muslin-covered openings are two windows, two feet by three feet four inches, hinged to swing out. In addition to these are two large windows three feet by four feet four inches; these are hinged to swing toward the inside, up against the wall and out of the way.

The south side rafters are placed two feet apart and are eight feet long. The north slope rafters are twelve feet long. One-inch poultry-netting is used to cover all openings, including those of the small windows. If the openings for the large windows are desired to be covered likewise, then it is advisable to put the same on a hinged frame to swing out.

The roost platform is four feet wide and extends the entire length of the building, being constructed of matched stuff. There are two sections of roosts, three in number, framed together; they are eleven feet long.

Immediately below the roost platform are the nests, eleven in each pen, twelve inches square, and so constructed that the fowls enter from the rear and the eggs are taken out in the front.

There are two large water-fountains, each fountain supplying water to both pens. They are placed in the partition. The door leading from one pen into the other is hung on double-acting spring hinges. The partition is made of either wire netting or muslin, as desired. There are two large dry-mash hoppers hung up against the end walls; these supply the fowls with dry mash at all times. There is also a grit-and-shell hopper for each pen.

What the Bill of Material Will Include

Roof—14 pieces, 2 in. by 4 in. by 16 ft.; 16 pieces, 2 in. by 4 in. by 12 ft.; 2 pieces, 2 in. by 4 in. by 14 ft.; 320 sq. ft. matched hemlock, 1 in. by 6 in. by 12 ft.; 320 sq. ft. matched hemlock, 1 in. by 6 in. by 14 ft.; 650 sq. ft. 2-ply rubber roofing.

Sides—10 pieces, 2 in. by 4 in. by 16 ft.; 2 pieces, 2 in. by 4 in. by 12 ft.; 300 sq. ft. siding in 16 or 12 ft. lengths; 300 sq. ft. 2-ply rubber roofing.

Rear Wall—3 pieces, 2 in. by 4 in. by 12 ft.; 3 pieces, 2 in. by 4 in. by 14 ft.; 7 pieces, 2 in. by 4 in. by 10 ft.; 150 sq. ft. siding; 150 sq. ft. roofing, 2-ply.

Front Wall—10 pieces, 2 in. by 4 in. by 12 ft.; 2 pieces, 2 in. by 4 in. by 16 ft.; 5 pieces, 2 in. by 4 in. by 14 ft.; 5 pieces, 2 in. by 4 in. by 10 ft.; 200 sq. ft. siding; 4 yds. muslin; 20 ft. 1-inch netting; 2 windows (6-glass sash), 2 ft. by 2 ft. 4 in.; 2 windows (12-glass sash), 3 ft. by 4 ft. 4 in.

Floor and Foundation Wall—14 barrels cement; 10 yards broken stone or 6 yards clean sand; gravel.

Roosts and Roost Platform, Nests—10 pieces, 2 in. by 4 in. by 12 ft.; 120 sq. ft. matched flooring; 100 sq. ft. matched flooring, planed both sides.

Miscellaneous—3 gallons paint (3 coats); 1 lock; 1 pair double-acting spring hinges; 1 pair 6-in. strap hinges; 1/2 doz. 6-in. hooks and eyes; 10 pairs 3-in. strap hinges; 30 lbs. 8-penny nails; 2 lbs. 10-penny nails; 10 lbs. 20-penny nails; 3 lbs. 6-penny finishing-nails.

The cost of material for this house is approximately \$125. For labor, \$40.

The Long Open-Front House

By A. W. Richardson

IN BUILDING a hen-house there are several things to be taken into consideration; namely, the cost of construction, the health of the flock and the labor required to care for a given number of fowls. After taking these things into consideration, I decided that a long open-front house was the best.

For the benefit of those unfamiliar with this type of house, I will give a few directions for its construction. The house for the general health of the flock must be well ventilated and light. It must have at least four square feet of floor space to each hen and be so arranged that a large flock may be cared for with a minimum amount of labor.

In order to accommodate a given number of fowls, we require a certain amount of floor space, and this can be obtained cheaper in a wide house of a certain length than in a narrow house much longer. For instance: to keep four hundred hens, a house 20x80 feet is cheaper to build than a house 12x134 feet, so on this account each compartment is 20x20 feet, thus accommodating one hundred hens.

The front wall of my own poultry-house, shown in Fig. 4, Fig. 5, Fig. 6, Fig. 7, is five feet above the sill, which is a six-by-six, the back is four and one half feet above the sill, and the ridge-pole nine feet. In order that the light may extend as far back into the house as possible, the front pitch of the roof is the shorter, the ridge-pole being directly over a spot seven feet from the front wall. There are two common

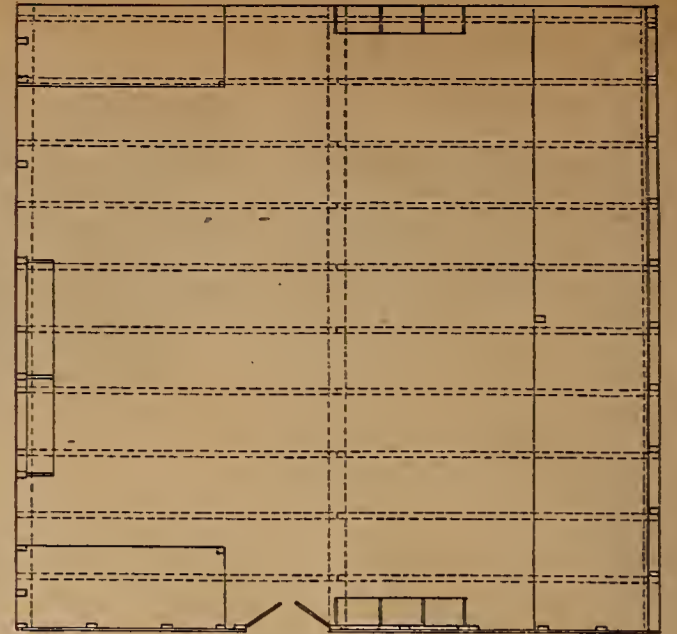


Fig. 4. Floor Plan



Fig. 5. Front View

10x12-inch windows in each part, placed about two and one-half feet from each end, the inside of the windows being covered with common poultry-netting to prevent the hens from flying through the glass. The curtain, three and one-half feet wide, is made of ten-ounce canvas duck fastened on a frame and suspended by hinges from the plate and covers the rest of the front of the building. This curtain is closed only on winter nights and on days during which a storm blows into the house enough to dampen the floor. One third of the open front may be used as a door, nailing the poultry-netting on a frame. This door is very convenient for putting in clean straw.

Many houses have a double wall on the back, but if I were to build another one I should not have this double wall. It is too convenient a place for rats. The roosting platform is placed three feet from the floor, and the roosts themselves, which are 2x3 inch joists, slightly rounded on top, are placed one foot above the platform. There are three of the roosts, fastened together and hinged at the back to facilitate the cleaning of the dropping-board. In the front left-hand corner there is a small pen about two and one-half feet wide, four feet long and three feet high, made of netting, which is used in the breeding season in which to keep alternate cockerels and is also used as a place in which

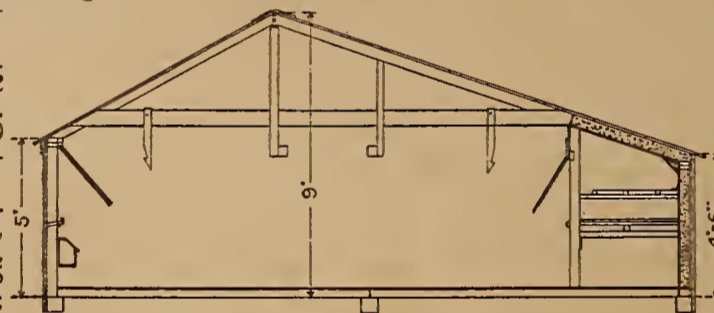


Fig. 6. Section through center

to break up broody hens. The nests are placed on a platform on the right-hand wall a convenient distance from the floor. Along the front of the house, underneath the open space and six inches from the floor is the dry-feed hopper. On the left side is a smaller hopper for shells, bone and charcoal. There are two curtains which cover the roosting platform, making it a sort of closet. This also is used only in winter. All the hoppers, nests, etc., are to be some distance from the floor, thus making available all the space for the use of the hens.

Double-swing hinges are used on the doors connecting the compartments. After the breeding season is over and the cockerels have been disposed of, these doors may be fastened open, thus allowing the birds more freedom of range. The yards are fifty feet long and twenty feet wide, with fruit-trees in each. A gate fifteen feet long is made in each yard next to the building, thus allowing a team to drive through to put in clean straw or remove filthy litter. The building is covered, both roof and walls, with roofing, which is a warm, durable covering.

I have a 15x20-foot feed-room at one end of my house. In this I keep all the grain, dry mash, etc. I also use this room as a fattening-room. It can easily be darkened and is convenient to the hen-house itself and to the grain-supply. I use common berry-crates for fattening. They can be easily cleaned, are handy and cheap. I use a trough for the wet mash, as it is easy to keep clean and sweet. By using a shelf or platform, two tiers of crates can be used.

The dry-mash hoppers are substantial, almost no filth can get into them, and the hens waste very little grain. If the house is built on a place where the drainage is good, it is better to have an earth floor, but if a floor is necessary I would make it of matched boards. From the foregoing I hope that a prospective builder can get some ideas which he can incorporate into his own house.

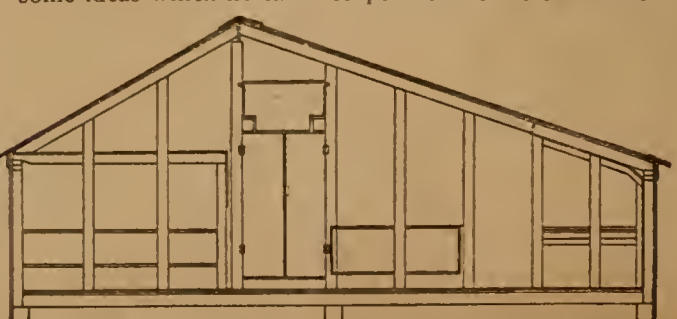


Fig. 7. End View

The difficulty of harvesting the alfalfa crop under humid conditions is largely overcome by the use of canvas caps

Which Has the Honors—Corn or Alfalfa?

An Alfalfa Article of Value, Practical to All Farmers Everywhere

By J. Robert Hall

United States Administration Farm No. 5

ALFALFA'S YIELD AS COMPARED WITH OTHER CROPS.

	Yield of Digestible Nutrients per Acre	Yield of Nitrogen per Acre
Alfalfa	5,180 pounds	1,100 pounds
Corn and Stover..	2,298 pounds	145 pounds
Timothy	1,904 pounds	112 pounds

Bran contains about the same amount of nutrients as alfalfa, but alfalfa is more palatable and as easily fed, when ground, as bran. An average yield of clover is two tons per acre, while alfalfa's average yield is four and one-half tons. If the many horses which were killed last winter by eating inferior corn-stover had been fed alfalfa, a great loss would have been prevented. Alfalfa is not a balanced ration for all stock, but for growing animals it is far superior to corn. Young animals can be grown to a much larger size with it than with corn; then fat can be laid on more cheaply. No other crop will furnish more green forage. From the above figures one will conclude that the man with five talents will soon have ten.

The only reason why alfalfa is not king in the minds of most farmers is because but few know the most successful methods of handling the crop, while everyone who can farm can grow corn in at least a rude way. But if we would figure out the cost of producing a crop (\$12.50 per acre), we would find that not all who grow corn are successful. Very little of the land in corn grows it as successfully as some land does alfalfa.

In sowing alfalfa over Missouri, I have never found a man who has used the proper soil-culture methods who is not more than proud of that small patch from which he gets from three to five crops each season. Alfalfa is responsible for many satisfied farmers.

As a rule, the men who grow alfalfa are men who, if they do not at first succeed, try, and try again. They are not backward about trying in the first place. They have kept up with the scientific methods of "sensible" farming.

Many methods have been used in handling crops of alfalfa, but some are more practical and are greater successes than others.

No soil should be seeded that has a water-table nearer the surface than three feet. The soil must be rich and

the sub-surface soil loose. To loosen the subsoil, use a sub-soiler made from a bull-tongue plow attached to a single-shovel beam, and run deep in the furrow of the breaking plow, previous to seeding. No soil should be seeded that yields an average of less than forty-five bushels of corn per acre. If the desired piece is not rich enough, it would be advisable to apply manure until the yield reaches the forty-five-bushel mark. The same will add nitrogen, which will produce foliage in abundance.

No soil which has not the alfalfa or sweet-clover nitrogen-forming bacteria present should be seeded, and when not present one may apply soil from an old successful field or from near sweet-clover plants. It is best to scatter the inoculation just previous to sowing the seed, at from 100 to 350 pounds per acre, disking in to prevent the sunlight from destroying the bacteria. This is best done on a cloudy day. The soil should be dried in shade, and can be sown with a grain-drill or broadcasted. If the bacteria are not present, and the soil has a large supply of nitrogen, the crop will draw on this; otherwise, it will store nitrogen.

Lime must be present to prevent acidity or density of surface soil. Alfalfa does best where lime is present in large quantities, therefore one will be repaid (in many localities) for applying it in the form of ground limestone at the rate of from 700 to 2,000 pounds per acre.

Though phosphorus is a grain-producer, it has been found to greatly increase the yield of alfalfa. Owing to the fact that many soils are lacking in this element, its addition will help balance the plant's soil ration. This naturally increases the yield.

Weeds and grass are alfalfa's greatest enemies, hence the necessity of cleaning the ground of foul seeds. In order to do this, the following treatment is necessary in many cases: Apply the necessary amount of manure, and break the ground as deep as convenient (eight inches if possible), disking in the manure beforehand, and sow to rye early in the fall. This will afford an abundance of fall and spring pasture. The next spring, about May 1st, turn rye down at an ordinary depth (about four to six inches), so as not to turn up the manure, which may contain foul seed. This rich top soil and manure will afford an abundance of food for the alfalfa, which feeds very deep. Being turned down in the fall, it will have ample time to decompose, adding a great deal of humus and nitrogen. After the ground is well prepared, about May 20th, seed the field to cow-peas, about twenty-five pounds per acre, in rows that may be cultivated. Cultivate these well, and let no weed or grass seed mature thereon. If things go off well, by the middle of August [CONCLUDED ON PAGE 8]

There is a Reason for Improving the Farm Colt Crop

By George H. Dacy



The farmer derives a double income from his work-animals

with the result that she begets healthy, vigorous foals. In the European countries oftentimes the mare has been unhooked from the cart just in time to foal; in a remarkably short time she will again be back in the harness. There are several corn-belt farmers operating places that vary in size from one hundred and sixty to three hundred acres who follow the plan of maintaining one or two teams of mules, while the rest of their work-stock consists of good grade mares of the Percheron breed. The mules are available for labor the year around, while the mares are worked throughout the year, with the exception of a short period just before and subsequent to foaling-time.

It is essential that the breeder farmer adapt his operations to the locality in which he resides. The countrymen living in level regions should preferably work with animals of the Percheron, Clydesdale or Belgian breeds, while those living in rough, hilly districts where the roads are not all that could be desired should select brood-mares of great weight and special activity for the basis of their breeding operations: Community coöperation is one of the fundamentals for really successful horse-raising operations in a definite locality. A neighborhood in which animals of one breed predominate and where a good stallion is used can readily obtain \$10 to \$15 more per head for their horses as compared with a

region where a conglomerate of the various breeds exists. Isn't that true?

The locality that produces one distinct type of colts attracts the horse-buyers, because they are able to secure a car-load of animals of uniform character in one place, instead of having to ride around the country for several days rounding up the horses. As a result, the dealers willingly pay a higher price for the horses or colts raised in one community. Coöperative horse-breeding benefits the farmer in so far as he is able to unite with a number of his neighbors in the purchase of a pure-bred sire. This male may be used on the farm mares of his owners in addition to his being employed in public service.

Pure-bred or grade yearling colts will sell for upward of \$150, and some of them bring as high as \$400. Even though the first year of a colt's life is the most expensive from the standpoint of care and maintenance,

still the farmer who desires to quickly convert his colt crop into money can advantageously sell his youngsters at such prices. Of course, each year that the horse remains on the farm—up to the time he attains maturity—means a material increase in his value, so that the farmer who is disposed to retain his animals and sell them as broken and mature horses realizes the maximum profit from such operations. The man who raises his own work-stock in consequence of keeping plenty of brood-mares is ahead an amount equal to the difference in the price of mature animals of good breeding and the expenses of raising them.

Rigid stallion laws in the Middle West have almost accomplished the overthrow of the scrub and mongrel stallion, so that the farmer no longer has to contend with this menace or temptation. It is all a question of his appreciating the value of the brood-mare both from the standpoint of a colt-producer and as a profitable work-animal. The farmer can readily obtain good mares and the service of the right type of stallion, and it seems as though it is up to him to get busy if he desires to realize the maximum income from his work-animals. Furthermore, the psychological effect of association with improved live stock will ultimately be apparent in his utilization of better methods and improved farm practices.

CORN has been considered king, but these two previous seasons, with a shortage of rainfall, have proven alfalfa more productive. Corn having one time each season to make its crop cannot compete with a crop having from four to six chances, as has alfalfa. Alfalfa has from early spring to late fall to make its crops, and its deep root system prevents drought from having any very vital effect on it. Its roots in old fields have been found twenty feet deep, seeking moisture.

A proper seeding of alfalfa will stand for from five to seven years. About eighteen pounds of seed is required at each seeding, which will cost \$2.70 per acre when seed is selling at \$15 per hundredweight. To seed this same area to corn six years with \$4 corn will cost \$3 per acre.

Preparing a seed-bed for corn six times is much higher than once for alfalfa. Cultivation is also cheaper with alfalfa.

Harvesting a crop of alfalfa yielding five tons per acre will cost near \$3.10, and harvesting a crop of corn and stover will cost \$3.25 per acre, or fifteen cents more than alfalfa.

Alfalfa is one of our most effective soil-builders, while corn is our most effective soil-miner; therefore, I liken the man who grows alfalfa to the character in St. Matthew who received the five talents, and the man who grows corn to the one who received one, and who digged and hid it. Alfalfa adds nitrogen and humus, while corn takes both away. Cultivating corn as we do burns out the humus and uses the nitrogen content. Also, many beneficial bacteria are killed by the soil receiving the extra amount of sun's rays. It causes the compact subsoil known as "plow pan," unless we sub-soil.

Corn can be used as grain, hay or ensilage. Alfalfa can be utilized in the form of hay, silage, or we may often harvest it as grain, which more than equals the practice of making it into hay. It is not profitable to pasture corn only as we hog it down, and then we lose the stover, but alfalfa is one of our best pasture crops, when handled correctly. Any crop, when ready to feed, is really only food elements which are in a form more or less palatable, and in a more available form than when found in either the soil or the air. Nitrogen is our highest priced element. Alfalfa, unlike corn, can get this nitrogen from the air in very large quantities. As it is our most expensive element, and as it is a valuable muscle-producer, it will be taken as a basis for our calculations. In the table which follows, the yields, of course, are the results of similar soil. Otherwise the comparison would not be just. Here is plainly shown the advantage which alfalfa has among money crops.

WHAT the scrub cow is to the dairy farm the runty, undersized foal of mongrel breeding is to the general farm. Just as the loafer cow preys on the profits of the dairy barn, the scrub or plug colt develops into an animal who verges on the consumption of a maximum of feed as related to the minimum amount of work which he willingly performs. The solution of the boarder-cow problem was comparatively easy, as it hinged around the efficient use of the Babcock test and the scales. The maintenance of good brood-mares, instead of geldings, and the service of a high-class, pure-bred stallion spells defeat and rout to scrub-horse stock.

The average farmer accords too little attention to the breeding of utility farm-horses. Under careful management the annual colt crop could be developed into one of the most profitable side-lines on the general farm. Where a pair of brood-mares are intelligently handled, they will perform just as much work as a span of geldings, and, at the same time, they will annually produce a colt apiece. In consequence, the countryman derives a double income from his work-animals; their work more than pays for their efficient maintenance, and the foals that they produce may be either sold as yearlings or raised and disposed of as mature animals, or they may be retained as reserves on the home farm from which to recruit the future work-stock.

The original price of the grade or pure-bred mares will be considerably higher than that of geldings or scrub work-animals, but the first couple of crops of colts will usually balance this difference. Hard labor will not injure the brood-mares where care and discretion are exercised to gradually accustom them to heavy work where they are well-fed and decently treated. It is always the healthy, well-fed horse that exhibits the greatest endurance and hardihood in the harness. A poorly nourished animal cannot perform efficient work for twelve months in the year. For a time the animal may work on its nerve, but finally its constitution will be undermined as a result of a continued drain on its reserve energy.

The exercise that the brood-mare derives from daily work in the harness keeps her in the pink of condition,



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Farm Notes

Caring for the Telephone

What Must Be Done When Trouble Arises

THE line being built, houses wired, instruments installed and working, the owners may think their troubles are at an end. Alas, as a matter of fact, they have not yet begun. The telephone and its line are like any other piece of machinery, they need constant care and supervision, and in their operation it is, more perhaps than in any other instance, true that the "stitch in time" pays in the long run. We who make this our life business have a saying, "temporary repairs are always permanent," which means, in plain English, that a botched job will be left alone till it gives trouble again. A wire is broken and, instead of being properly spliced, it is loosely twisted together "temporarily"; the line works apparently as well as ever, and in ninety-nine cases out of one hundred that temporary repair is forgotten and remains a weak spot constantly getting weaker and harder to locate. I once went over a line in Wisconsin (and it wasn't a farmers' line, either) which had been beautifully built some six years before I saw it, but which was practically out of commission. It looked all right, but a careful examination showed a lot of repair splices. In about twenty miles of line I cut out and remade over eighty splices, not one of which had been properly made; they were all "temporary," and as they became loose and rusty just so the line worked worse and worse till it could work no longer.

It is well to reflect that what is everybody's business is never anybody's, and therefore to entrust the management and repair of the line to one man who will give it attention. In every community there will be found a young and ambitious man who will undertake this work, and I may add that of the thousands of men who have, from time to time, worked for me the very best were graduated from the rural lines. I can name three, at least, who are now superintendents, and a hundred in lower positions. As was suggested in the first article, it is generally possible to arrange with the telephone company with which your line connects to attend to repairs for a small yearly payment per instrument, but if you have a young man who really wants to learn the business by all means employ him.

First let us consider line troubles—these are "shorts," "crosses," "grounds" and "opens." The short is where the two sides of a metallic circuit come together from slack in the wire, from poor guying or a broken insulator; the cross is where the line is in contact with another line; the ground, where the line is connected in any way (usually through a tree) to earth, and the open, where one or both wires are broken. One word as to "trouble-shooting," either on line or instrument. When a man is sick and goes to a physician, the doctor first of all determines what is wrong with him and then applies the proper remedy. He makes this determination by examining the symptoms and finding first of all where the patient is not normal; thus he is guided to the trouble and the remedy. Now let the trouble-man do this very thing—examine his patient, the line—and determine before he starts out what the trouble is. This requires some practice, but I confidently venture the statement that given one hundred cases of trouble I can, as the doctor would say, "diagnose" ninety-nine of them without going over one foot of the line.

Trouble Can Easily be Located

First, it is impossible to call anybody, and the crank of the ringer turns hard, in fact can hardly be turned at all; here we have, on a metallic line, a dead short or, on a grounded line, a dead ground not very far away. All the ringing current may go through the short and naturally, then, none goes ahead to ring bells.

Second, it may go to ground with the same effect. The crank still turns fairly hard, but you can raise three of the nearest

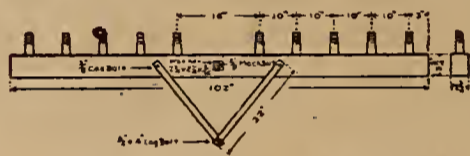
subscribers, but no more, and these complain that the bells ring but faintly; the trouble is a short or ground between station 3 and 4, or possibly between 4 and 5. Most of the current flows through the short, but enough through the bells in front of it to partially operate them. The same condition exists for a grounded circuit.

Third, the crank turns too easily, and no one can be called; here is an open line without possible doubt. It might possibly be trouble in the instrument itself, but this can be determined by short-circuiting the telephone by putting a screw-driver across the binding-posts.

The Most Difficult of All Troubles

Fourth, the line is very noisy, but otherwise works fairly well. This means a partial ground somewhere and is the worst of all troubles to locate, as it may happen in a dozen ways. The only remedy is to hunt it out, and while hunting examine every lightning-arrester; pull out the carbon plates and see that they contain no dust (and, incidentally, don't forget to replace the mica). Lastly, conversation over some other line can be plainly heard. As already explained, this cannot be corrected on a grounded line if any other line parallels it, but if it happens on a metallic circuit it is surely a cross with some other line. A short is usually due to slack wires, and it is not sufficient to shake it out. Cut the wires, and pull them taut. Many line workers don't know how to separate two shorted wires; the correct method is to pull one as tight as possible, and then pound on the tight wire with a pair of pliers or connectors; this is infallible. If the line was properly built, grounds should be very rare. The usual ground is through a tree, and, when building the line, all possible care should be taken to trim all trees that might touch the wires. It is not enough to just trim space for the wires to pass, for the limbs will soon grow out. Get a space of at least four feet on all sides of the wire, and if this would disfigure the tree too much, string in one span of insulated wire. Remember, however, that the weaving of branches will wear through the finest insulation in no very long time, and trim out all you dare, anyway.

The trouble-man should always carry with him, as he drives the line, plenty of tools



Pony telephone-arm; pins and braces

and supplies for all repairs, and he should not be content with merely finding and fixing the particular case of trouble he is after, but should note and immediately repair all trouble he sees. If a guy needs tightening, do it whether it is causing trouble or not, tighten up any slack spans.

The Instrument Itself May Go Wrong

Instrument trouble requires special training and can be touched on but briefly, as it would require a dozen articles, each the length of this, to fairly cover the subject, and as every maker wires his instrument a trifle differently from all others, the instructions would have to be different in each case. There are, however, several good books on the subject, and one of these should be owned by every trouble man and, more to the point, carefully studied. However, we will discuss the ordinary troubles which make up at least ninety-five per cent. of the total. Let us divide the circuits of the instruments into three parts, first, the primary circuit, including the batteries, the transmitter and the primary (coarse) winding of the induction-coil; second, the ringing circuit, including the generator and bells, and, third, the secondary circuit, including the receiver and the secondary (fine) winding of the coil. The switch-hook and its connections might form a fourth circuit, but really are part of each of the others, as will be seen. First, then, the primary end: the trouble here is nearly always in the batteries and is evidenced by the party being able to hear, while the one at the other end can't hear him. A new set of batteries is the only remedy, and if dry cells are used the trouble man should always carry a few with him; if wet cells, the elements of the charge, fresh zincs, etc. If batteries are left working for more than a few minutes at a time, they lose their strength, for they are working every second the receiver is off the hook, whether you are talking or not, and a receiver off for thirty minutes will come very close to ruining the best battery ever made. In case of trouble of the sort mentioned, first test the batteries, which may be done either with a cheap instrument provided for the purpose, called a battery-tester, or, roughly, by removing the receiver from the hook and gently tapping the transmitter while holding the receiver to the ear. Each tap should be heard loudly in the receiver. Second, see that the switch-hook contacts are clean, but be careful not to disturb them; a little strip of fine sandpaper (never emery) is best for this purpose; never jam a knife or screw-driver between the contacts. Third, see that there are no loose or broken wires, that the battery wires

are firmly in place and clean and that the wires leading along the transmitter-arm are in good condition. Fourth, never tamper with the transmitter; you will only ruin it if you even try to take it apart; remember, that a scratching noise in the receiver means almost invariably a loose or broken wire, and look for it. Trouble in the primary winding of the induction-coil is impossible.

Trouble in the ringing circuit is of two kinds: first, you can ring others, but cannot yourself be called; second, your bells ring, but you can't call anyone else. The first of these shows that your generator is in order; therefore the trouble is in the bells; the second, the reverse. Bell trouble generally means improper adjustment, but may mean a burned-out ringer-coil or, of course, a broken or loose connection. The neatest way to test for any trouble where a coil is involved is to rig up a watch-case receiver and a cell of battery, running one wire from a post of the battery to one side of the receiver, then a loose wire from the other side of the receiver and a loose wire from the other post of the battery; by fastening one end of one of the free wires to any point of a circuit, the entire circuit may be traced by touching the other free end along the same, each touch giving a distinct click in the receiver.

Don't Use Oil on the Telephone

Personally, I very much prefer this device to any other, and for convenience solder a simple clip, such as comes on a shirt-sleeve supporter or cuff-holder, to one of the free wires and a stout needle to the other, so I can pierce insulation. If the trouble is in the generator, look carefully for a loose connection, and see that no oil or grease is in evidence anywhere. No lubricant of any kind should ever or in any circumstances be used about a telephone. The armature winding of the generator may be burnt out, but only in case of a most severe thunder-storm, and then but rarely. It cannot be repaired without special tools, and should be replaced. The bells are easily adjusted by disconnecting the instrument from the line, short-circuiting it across the binding-posts and moving bells and clapper till they work nicely. A burned-out ringer-coil can be replaced easily, and half a dozen extra coils should always be in stock.

Trouble in the receiver circuit may be, first, the secondary winding of the induction-coil burned or otherwise open; second, the coil or coils in the receiver itself burned or open. Don't attempt to repair either of these away from the shop, in fact they are so cheap that it doesn't pay to fuss with them in any case.

The best and quickest way to handle instrument trouble (other than batteries) is to order one instrument more than is needed, and let the trouble-man carry it with him; he can then bring the damaged instrument home and repair it at his leisure.

Not over a month ago I fitted up a trouble-wagon for a rural line, and its equipment may be of service; it was as follows:

- Tools: 1 shovel, 1 hand-ax, 1 monkey-wrench, 1 pair connectors, 1 pair pliers, 1 pair climbers, 1 set slack blocks complete, 2 screw-drivers (6 and 12 inch), 1 bar (digging), 1 brace and set bits, 1 battery-tester.
Supplies: 1 half-coil line wire, 1 coil inside wire, 1 length (300 feet) insulated line wire, 1 roll tape, 1 box insulators (20), 6 two-bolt clips, 1 box 20 and 40 penny nails, 1 small box assorted screws, 1 box staples, 1 candle and strip solder, 1 box soldering-paste, 6 dry batteries, 1 extra receiver, 1 complete telephone, 1 testing outfit as described above, 1 fuse-block, 1 induction-coil, 2 ringer-coils, 20 knobs, strip of leather.

A system of long and short rings is usually arranged. Such systems are common on rural lines.

Why Use the Telephone as a Plaything?

The only thing remaining to be discussed is the abuse of line privileges; this is a difficult thing to deal with, as so many people who would normally think it a disgrace to eavesdrop or spy on their neighbors seem utterly without conscience when the telephone is in question and will rush to the instrument every time the bells ring, whether it is their call or not. One would hardly open a letter addressed to another. Is it any worse to deliberately listen to a private conversation? I have known more than one case where a rural line was a positive curse to a community from this wretched habit and where all sorts of bad feeling have been engendered by its indulgence. As an evidence of the extreme to which it can be carried, I well remember a case where for some unknown reason the bells beyond one of the stations seemed in constant trouble; one time they would operate perfectly, five minutes later they would ring so faintly that it was hard to distinguish the call; the manager was on the verge of prostration, as he had gone over the line a dozen times, trimmed every tree that could possibly have been in the way, adjusted bells, in fact done everything he could think of. In despair he came to me and told me his troubles. I suggested that we drive out to the last "good" station and, to his surprise, asked him if he dared walk in without rapping; he said he could, and the two of us entered very unexpectedly, the telephone being in the



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kitchen at the back of the house. The picture we found was, to say the least, amusing: the good housewife, in her craze not to miss anything, had actually rigged up a clamp to hold the receiver on the back of a rocking-chair and spent her leisure time in comfortably listening to every word that went over the line. She had even gone so far as to devise a method of opening the primary circuit on her own instrument so that the batteries would not run down. This is an extreme case, but shows how far some folks can go. The remedy: just plain common decency and honesty, a by-law authorizing the manager to take out any telephone whose user is guilty of such dishonesty and a manager with backbone enough to do his duty. There are several lock-out systems patented, but they are delicate and expensive and none too efficient. It is safe to keep away from all complicated devices everywhere. One company operating in central Iowa has the following excellent rules which are worthy of universal adoption:

1. Emergency calls, as for a doctor, etc., shall take immediate precedence of all others.

2. From 5 A. M. to 8 A. M. and from 5 P. M. to 6 P. M. the line is reserved for business calls only, emergencies, of course, excepted.

3. No conversation shall be continued for more than five minutes at one time.

4. Any patron using the line shall permit at least ten minutes to elapse between calls.

5. Non-subscribers shall have the privilege of using the line only on payment of twenty-five cents per call, which fee will be charged to the subscriber whose instrument is used.

6. Listening in will be sufficient ground for the removal of the offending subscriber's telephone or, at the option of the management, a fine of five dollars for each proven offense.

Rule 1 requires no comment; Rule 2 gives the men folks a chance to transact business at the most convenient times; Rule 3 gives every subscriber an equal opportunity to use the line as does Rule 4, also; Rule 5 is only fair, the man who is too mean to pay for a telephone should do without it and not impose on his neighbors, and Rule 6 may do something to correct the wretched habit it covers.

In conclusion I would say to any community of farmers, build a line, and build it well; use it freely and decently; don't be such a contemptible sneak as to pry into your neighbor's business any more than you wish him to pry into yours; treat the line as a business proposition; see that it gets proper care and attention; pay your rental bills promptly; don't "cuss" the management too hard, perhaps you could do no better. If you will do all these things or most of them, you will have introduced into your lives a big influence for good at a cost so trifling that it is not worth consideration in view of the benefits received.

H. J. MINHINICK.

One road to bankruptcy is strewn all the way with neglected machinery.

When you have a half-hour's time that you do not know what to do with, do something that will make the old home look better.

The Stallion Between Seasons

IT IS a general principle in horse-breeding that the progeny is strongly influenced by the characteristics of their ancestry. The horse which is to prove of value to its owner by taking its full share of work on the farm and possess the quality that will enable it to sell well must, to a large extent, have this tendency transmitted to it through a sire and a dam which have shown their usefulness in a like capacity. A stallion that has been unduly pampered by high feeding and a lack of exercise is sure to be deficient in constitution and muscular development. Unfortunately this practice is far too common. From the first of April to the last of July, the usual breeding season, the attention he receives is generally more rational, as the circumstances entail plenty of exercise. During the remainder of the year he is commonly consigned to luxurious idleness and unnatural living, with corn feeding, in some secluded box stall, there to remain until the conditioning season comes around again. Under such conditions it is not at all surprising that the hairy-legged stallion develops "grease," or that the clean-legged stallion becomes "stocked" in his limbs, sluggish, vicious and partially impotent.

In order that a stallion may impress his progeny with the best possible physical traits, it is essential that his muscular, digestive and respiratory systems be kept in a proper condition during the period that he is not required for stud purposes. While on a route he must necessarily be highly fed to endure the physical exercise required and to perform the functions of a sire. When the season is terminated, the careful owner will see that he is given a rest of, say, two or three weeks, as well as a temporary change of feed, in order to relieve the digestive organs for a time. This change, of course, should be effected gradually, a little exercise being given for ten or twelve days and the

food reduced by degrees until at the end of that time the grain and hay may be withheld entirely for about twelve hours, and nothing but bran be fed, after which a purgative of aloes or raw linseed-oil should be given. When purgation begins, the bran should be largely discontinued, feeding only a small quantity together with a light feed of grass and a little grain. The horse ought then be allowed to remain quiet for two or three weeks so as to become thoroughly rested. He should then have a regular share of the ordinary farm work, thus paying for his maintenance and at the same time being kept in good condition by means of the exercise involved. This is the method that most easily adapts itself to the average farm conditions where but one stallion is kept. In large breeding establishments where a number are kept and generally stand on the premises for service there are usually plenty of large paddocks in which each horse is allowed to run for a few hours every fine day during the whole year and will voluntarily take sufficient exercise. When there is no work for him to do, and a suitable paddock for voluntary exercise is not obtainable, as is generally the case when a stallion is owned in a village, town or city, he should have at least a few miles' daily exercise, either on the halter, in the harness or under the saddle.

The system of feeding will, of course, depend on the amount of work he performs. As a rule, it is well to feed considerable grass, bran and other easily digested foods, eschewing all drugs, except the purgative mentioned, unless in case of sickness. With the arrival of cold weather, when no grass will be procurable, he should be fed a reasonable quantity of hay and oats, as circumstances demand, together with a few roots



Feed now some hay and oats

and a feed of bran, with a little linseed-meal two or three times a week. It is sometimes claimed that a stallion sheds better in the spring if he is not groomed between breeding seasons. Any intelligent and well-informed horseman knows better than this. If a horse is to do well and feel well, it is essential that his skin be in good condition at all times, whether he is working or idle, and this cannot be unless regular grooming is given. The wisdom of blanketing must be decided by the nature of the stabling. The horse must be kept comfortable, and this cannot be secured without proper ventilation. If the ventilation can be secured only at the expense of heat, some form of covering will be necessary for comfort and is much preferable to close, warm, but poorly ventilated quarters. There is no denying that this method, as outlined in the foregoing, all takes time and is perhaps some trouble, but is, I believe, necessary if the horse is to receive the best possible care. When treated in this way between seasons, the stallion requires no special preparation for the stud; in many cases he will have earned his keep, in itself no small consideration, while at the same time prolonging and intensifying his usefulness.

J. HUGH MCKENNEY.

Just below the line your plowshare has reached in days gone by lie several inches of soil rich and waiting to help make you rich, too. Set the clevis so that the plow-point will run a bit deeper and bring up some of that grand good earth. You need it.

Give Snuff for Grubs

A WEST VIRGINIA reader asks us for a remedy for the disease known as "rot," or running at the nose, which has infected his sheep.

I think from your description of the nose running that it arises from grubs acquired by the sheep while at pasture in the summer and fall, and which have remained in their heads and nasal organs ever since. If that is the case, I should think you must have already lost some of them, though you do not mention the fact.

It is an ugly disease, especially when allowed to run on for a long time, but is curable. In England, where most of my sheep lore was gained, our old shepherd, a very skilful man, would make a mixture of tobacco-snuff and linseed-oil, sufficient of the latter to make the stuff run freely, then hold the sheep's head well up and pour it into the nostrils. In the consequent sneezing the grubs will be thrown out or killed.

Another, and a very successful remedy, is to rub the nostrils over with coal-tar. This will fetch the grubs sure, and if the sheep lick off some of the tar, it will benefit them.

JOHN PICKERING ROSS.



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Live Stock and Dairy

How to Pickle Meats
A Word to Those Who Have Not Been Successful

BEEF, while perhaps the most desirable of all meats for summer use, is unfortunately difficult to keep without the use of an immoderate amount of salt. Still, that it can be saved we have demonstrated, for as a rule we have it until late in the summer, sometimes even until early fall.

To begin with, we use large jars instead of barrels. From twelve to fifteen gallons are best for beef. These are thoroughly washed and scalded before using. All bones are removed, and the meat, in nice-sized pieces for cooking, packed loosely into the jars. It is then covered with a weak brine, allowing about six pounds of salt to ten gallons of water. This should be sufficient for one hundred pounds of beef. In from three to five days the meat is lifted and the brine thrown away. Meat is then repacked and again covered with a similar brine. This is allowed to stand from ten days to two weeks, after which it is also thrown away. Meat is again packed, and this time covered with a regular pickle. To one hundred pounds of meat I use five pounds of salt, two or three cupfuls of sugar, a tablespoonful of saltpeter and about twice as much cayenne pepper. This is boiled, skimmed and poured on hot.

While the brine is still hot, a piece of clean muslin is tied over the jar, and this covered with hot rosin to which enough lard has been added to soften it. Care is taken to cover every particle of the cloth well over the edge of the jar. Another cloth is then tied over and treated in exactly the same way. A third cloth is provided, but not covered. Instead, a hot iron is run around over the edge of the jar to make sure the cloth adheres closely at all points. A board cover is laid over all.

When meat is wanted, the cover is pulled up and enough for several cookings removed. This is placed in a small jar, covered with a weak pickle and used as wanted. The large jar is again sealed by laying over it the old cover and running a hot iron around over the edge. If at any time the pickle shows signs of souring, take up the meat, throw the pieces for a few minutes into a kettle of boiling water, then repack, and cover with a new brine. Beef so treated should need no freshening and is of excellent flavor. A limestone weight, sterilized, is always used.

For pork, if hams and shoulders are included, I use the same pickle, but for side pork alone a simple brine is used. Pork jars I do not seal, simply cover with a board or the stone cover which can be had with the jar. Usually it is best to smoke the jars thoroughly, sometimes until the liquid smoke runs down the sides. This may be done by placing a pan of live coals heaped with corn-cobs under the inverted jar. Air sufficient to promote slow combustion must be admitted. Usually I put a layer of ashes in the pan first and then set the coals on an open floor of some kind. A raised walk or platform is the best place. Pickle on pork intended for long keeping must be changed in from ten days to three weeks.

As a rule, we pickle no pork except the side pieces. Ham and shoulders are fried down fresh. To do this, cut across the grain in thick slices. Remove the rinds and fry until about half done in deep fat. There ought to be fat enough in the pans to completely submerge the meat and to keep it at a very high temperature. As fast as sufficiently cooked, lift from the pans with a fork, and pack in large stone jars. When full, cover with an inverted plate, set a flat-iron on this, and pour over enough boiling fat to completely cover the meat. Fat from the pans should be poured in occasionally, as the meat is packed that heat may be kept up and all crevices between pieces filled.

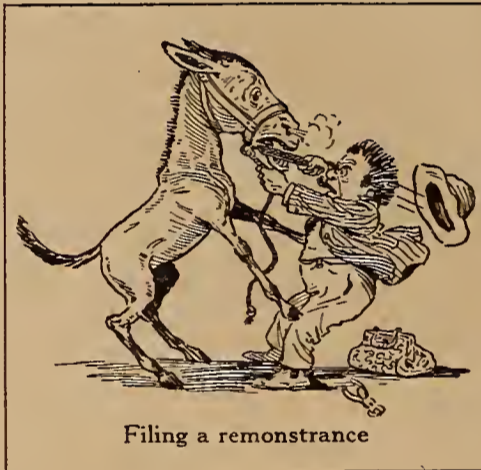
To serve, lift, and finish cooking. Care must be taken not to leave exposed pieces uncovered with grease for any considerable length of time. SYLVANUS VAN AKEN.

Holding the Large Hog

THE best way to hold a hog while sticking him is to take a rope about twenty feet long and tie an end to each of the hog's front feet. Then pass the loop of the rope over a tree limb or a girder in the hog-pen. Pull down on the loop until the hog throws himself and is held on his back with his front feet drawn tightly upward. The rope can then be secured. The hog is unable to flounder or do violence either to himself or to the butcher. It is sometimes advantageous to fasten in a similar way one of the hog's hind legs in order to keep him exactly on his back and his throat in consequence upward.

The two parts of the rope should be spread apart as they pass over the support above. This widens the space between the hog's shoulders and thus makes it more easy to stick him without cutting into the meat of the shoulder. If it is difficult to hold the rope in position, a spreader-stick between the two ends just above the hog's feet accomplishes the same results.

This method of holding a hog while sticking him is especially useful when the hog is very large or when there are few men to help in the work. MONROE CONKLIN.



Filing a remonstrance

A Case of Poisoning

"FROM some puzzling cause that baffles the veterinary we have been unable to work one of our best horses for the last two months. He is a six-year-old horse that has heretofore been good-dispositioned and a good worker. He seems to be in good health, but when he is hitched up he rears and throws himself, sometimes backward, and kicks violently, rendering him dangerous to other horses in the team. When he is loose, the only evidence of any disorder is an unusual excitability. He jumps at a slight noise. It is almost impossible to lead the horse at all or to tie him, as he pulls back and breaks away. As loco-weed is very common here, we were suspicious of some trouble from eating that weed, but upon examining the symptoms, as set forth in the Government pamphlet on the loco-weed disease, we find his case does not seem to be exactly one of that nature." So writes a FARM AND FIRESIDE reader in Montana.

Before I came to your remarks about loco-weed I had jumped to the conclusion that poisoning from that weed was a likely cause, seeing that you live in Montana. Although you seem to have concluded that loco-weed poisoning is not present, I would still consider the case as indicative of that form of poisoning, and therefore would adopt measures for the prevention of that trouble. Keep the horse where he cannot get loco or any other poisonous weed. Give him two teaspoonfuls of bicarbonate of soda in his feed night and morning for ten days, then skip a week and repeat if the animal has not recovered. Soda often acts as an antidote to vegetable-poisoning.

Make the horse take abundant outdoor exercise every day. Feed mixed hay or well-cured alfalfa-hay and oat-straw, adding enough oats and bran to keep him up in flesh and the bowels acting freely.

Double a strong clothes-line or lariat. Fit the loop over the tail as a crupper-strap. Knot the ropes together on loins, and again at withers. Then run the two free ends down through rings of halter, and tie to the manger, along with the halter rope. Let him try to back up in the stall with that harness on, and he will soon tire of the habit. A. S. ALEXANDER.

Breaking the Colt

AN ARIZONA reader desires to know how to cure a partly broken colt of the very annoying habit of suddenly turning squarely around at the sight of some small object by the roadside. The colt is not easily scared.

The habit mentioned is not uncommon with colts. My advice is simply to continue the training, being careful to make the road lessons short and very frequent. It is the oft-repeated short lesson that accomplishes results in training.

Meanwhile, watch your colt very closely, and if you have reason to think he is fooling you, put on a foot-line, attached to the fore foot and carried up through the belly-band and back into the cart. Pull this line, and put him on three legs when he tries to turn.

You must yourself be the judge whether his fear is real or assumed, and govern yourself accordingly. In any event, be very quiet and gentle with him, giving him to understand that he must not turn around (which the foot-line will practically prevent, though he may hop a little on three legs). Avoid the use of the whip or any harsh language. DAVID BUFFUM.

Corn or Alfalfa?

[CONTINUED FROM PAGE 5]

The peas will be ready to harvest, making an abundance of hay. After the peas are harvested, from August 15th to September 15th is a desirable time to sow seed. You will find the ground in excellent condition to apply lime (if it has not been applied before breaking ground for peas), and other fertilizing elements may be disked down doubly with the soil for inoculation. The disk should be run three inches deep, and afterward the soil should be harrowed and dragged till the sub-surface soil is well packed and the surface well pulverized, as the alfalfa-seed are rather small. A corrugated roller is most satisfactory for the above described work.

No seed should be sown except those that are best, as to purity and germination. Avoid southern-grown seed. The seed should have a rich yellow cast when rubbed in the hand.

As there are 220,000 alfalfa-seed in one pound of ordinary quality, there will be five seed per square foot for each pound sown, but we can count on losing many of these small plants; therefore, it is advisable to sow fifteen to twenty-five pounds per acre, varying according to the condition of the soil or seed-bed. It is best to sow one half the seed north and south, and the other half east and west, as the case may be, to avoid streaking. Harrow these in very lightly, not more than one and one-fourth inches. Best success has been attained where seed were sown on reasonably dry ground, preceding a shower of rain.

As Missouri is rather a humid section, many experience great difficulty in harvesting the first and last crops of hay, particularly if it is a rainy season. But success will be obtained here by using hogs or sheep to pasture off these doubtful crops. Hogs will produce excellent carcasses here with a minimum amount of corn and other high-priced feed. These crops may also be made into ensilage with other crops.

Though this is an experimental age, we will find many who will ridicule us when we first begin, but at this critical time it is to our advantage to be thus ridiculed, lest we go wrong. To determine the most practical method to follow, the use of the plat below of about one acre is convenient for test.

Nothing Applied	Lime	Lime and Phosphorus
Manure	Manure and Lime	Manure and Phosphorus
Inoculation and Manure	Inoculation and Lime	Inoculation and Phosphorus

Proof plat

By use of a "proof plat" and of correct weights of cuttings and their appearance, it is hard for a careful observer to go far wrong when following the results. In the minds of a great many, alfalfa is not king, because they have not tried it. Another class is of the same opinion because they tried it, and their expected success was a great failure. It is to be hoped that farmers may all see alfalfa's value and cautiously but earnestly attempt to grow it, that there may be no more failures.

Shipping the Colt

ANSWERING a Pennsylvania reader, who asks about shipping a colt to another State, I would say that horses are being constantly shipped from one part of the country to another, and while, of course, there is some little degree of accidents en route, and of indisposition on arrival, it is

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Only a Wind Puff

But it may lose you the race. Horse won't bring as much at the sale. It looks bad and indicates weakness.

ABSORBINE

Will remove it and strengthen the joint without blistering or removing the hair, and horse can be worked. Cures strains, sprains, heel-wire cuts, bruises; removes bursal enlargements, bog spavins, thoroughpins, curbs, capped hocks. Stops lameness and allays pain. \$2.00 a bottle at dealers or delivered. Book 1 H free.

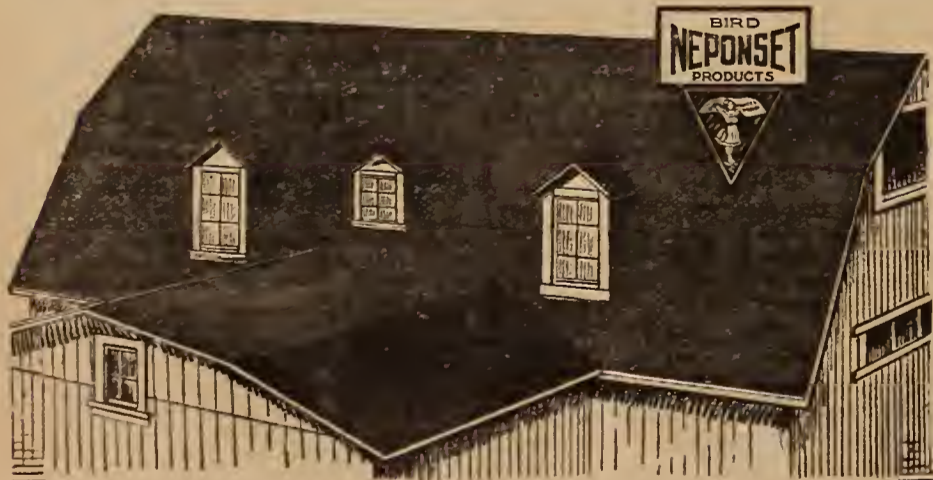
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NEPONSET Proslate Roofing makes a handsome red or green roof for houses.

not sufficient to warrant any hesitation, if it is necessary or desirable to ship an animal. Change of climate is very apt to cause a sort of influenza, resembling a severe cold, but horses, if properly cared for, usually recover in a few weeks and come out as good as ever.

In shipping, place the colt in the middle of the car, with his face toward the engine, and tie him with a rope on each side, so as to keep him in the middle. Fasten a strong pole or joist across the car immediately in front of him, and nail a box on the front side of it to serve as a manger. Keep litter or dry sand under him (the latter is better) to keep him from slipping when the train starts or stops. He will not lie down during the journey, but a day or two of standing up will not hurt him. See that he has plenty of water during the journey; this is important. His attendant can always get water from the engine-tank. You should have a good man with him. DAVID BUFFUM.

The Farm Microscope

YES, the microscope is needed on every farm. The laboratory and scientist's study are not the only places where this instrument can be advantageously used. The microscope will save the farmer much time and money, and many things may be learned by its use that would otherwise only be learned by costly experience.

In buying clover-seed, timothy, grass and other small seeds, the microscope will tell you instantly what you are getting.

In the orchard the microscope may be used in identifying scale and other obnoxious insects. Plant-lice, root-lice, etc., may easily be discovered in the garden and fields by the aid of this instrument.

Fabrics may be examined for quality; food-stuffs and water for purity, and, in short, a great many uses make this instrument a valuable one. WALTER S. CHANSLER.



California is recognizing the value of cattle

The Wood-Eating Habit

A NEW YORK reader tells us that his cows have an unnatural craving for wood, often gnawing their mangers and sometimes pulling pieces of wood from the buildings. He wishes to know if there is anything he can give them to satisfy this craving for wood.

Depraved appetite in cattle usually indicates lack of some needed ingredient in the ration. In pregnant cows it is common, without that cause. In young cattle it may be due to the irritation caused by teething, and in them it is always well to make an examination of the molar teeth and remove any milk-tooth crowns which have lodged instead of coming off. Examine the heifer's mouth as suggested. Allow all the cattle access to a mixture of two parts of salt and one of slaked lime, and feed them some grain and bran, if the pastures are not full of grass. Give the heifer two drams of phosphate of lime in her feed twice daily, and in addition add bran and flaxseed-meal to the ration. Where depraved appetite is due to indigestion, it often will subside if the drinking-water is acidulated twice daily with a little dilute hydrochloric acid.

A. S. ALEXANDER.

If the dandelions were real gold, they would be a still greater nuisance.

Separator Hints

START the separator slowly. Give it time to get up momentum. This has been stated so often that it would seem that everyone knew it, but many a separator is ruined every day by the ill practice of starting it too quickly.

No matter how well the separator was leveled when it was set, it is apt to become out of true and therefore should occasionally be tested with the level. The life of the separator will be greatly increased if it is kept true, and it will do better work. It is essential that the separator be perfectly level.

We make it a point to run a quart of water through the separator each time before turning on the milk. This moistens the disks and the inside of the bowl. This will not permit the milk and cream to adhere to the parts so easily. The separator will be able to do better work. We also run more water through after the milk is finished. This greatly lessens the work of cleaning and washing. GREGOR H. GLITZKE.

The Visitor

By Berton Braley

WE KNEW that he was present, though he wasn't to be seen,
For the wind was blowing straight from him to us;
And though our hospitality is usually keen,
We didn't really want the little cuss;
The dogs desired to chase him, but you bet we called 'em back
From the quarry whose acquaintance they would seek,
For we knew if they got busy on *this* little fellow's track
We would have to keep 'em buried for a week.

He was under the piazza, or we thought he was, at least,
By the strength of the aroma in the air,
And we acted most respectful as we sought the little beast—
We would rather beard a lion in his lair;
Oh, we tried to coax him gently, but he seemed to like the place

As he lay there still and quiet as a mouse,
And the women found his presence was a thing they couldn't face
So they simply beat it swiftly from the house.
Well, we spent the night at neighbors'—who were very, very kind
And who said that they were glad to have us stay,
And we hoped when morn was dawning we would almost surely find
That our unexpected guest had gone away;
But he's under the piazza, and he's very comfy, too,
And he doesn't seem to care at all to roam.
Won't somebody kindly tell us what's the proper thing to do
When you have a "little stranger" in your home?

Stretch the Right Fence in the Right Place

Bar stock with a *Stock Fence*; bar hogs with a *Hog Fence*; bar chickens with a *Chicken Fence*, etc. Only fencing designed for a particular purpose will assure full efficiency, greatest economy and complete satisfaction.

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DR. HESS STOCK TONIC

which had the desired effect—putting more feed into the milk pail and in the case of hogs, steers and sheep converting more feed into flesh, blood and muscle. The ingredients of Dr. Hess Stock Tonic are printed in the panel on the left, with the remarks of the U S Dispensatory showing their high value as tonics and strengtheners.

Our proposition. You get of your dealer a 25 lb. pail of Dr. Hess Stock Tonic at \$1.60, or 100 lbs. at \$5.00 (smaller quantities at a slight advance). Except in Canada and extreme West and South. Use it all winter and spring. If it doesn't pay you and pay you well, get your money back. Every pound sold on this guarantee. If your dealer can't supply you, we will.

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DR. HESS POULTRY PAN-A-CE-A also has every ingredient printed on the label. Sold on the same written guarantee—to make your hens lay. It overcomes the debilitating influences of moulting, gives them life, brings back the scratch and cackle, puts the dormant egg organs to work, and you will plainly see the result in the egg basket. Besides, it cures gapes, cholera, indigestion, and the like. 1 1/2 lbs. 25c (mail or express 40c); 5 lbs. 60c; 12 lbs \$1.25; 25-lb. pail \$2.50. Except in Canada and the extreme West. If your dealer cannot supply you, we will. Send 2c for Dr. Hess Poultry Book, free.

INSTANT LOUSE KILLER KILLS LICE

NO MEDICINE But Change of Food Gave Final Relief

Most diseases start in the alimentary canal—stomach and bowels.

A great deal of our stomach and bowel troubles come from eating too much starchy and greasy food.

The stomach does not digest any of the starchy food we eat—white bread, pastry, potatoes, oats, etc.—these things are digested in the small intestines, and if we eat too much, as most of us do, the organs that should digest this kind of food are overcome by excess of work, so that fermentation, indigestion, and a long train of ails result.

Too much fat also is hard to digest and this is changed into acids, sour stomach, belching gas, and a bloated, heavy feeling.

In these conditions a change from indigestible foods in Grape-Nuts will work wonders in not only relieving the distress but in building up a strong digestion, clear brain and steady nerves. A Wash. woman writes:

"About five years ago I suffered with bad stomach—dyspepsia, indigestion, constipation—caused, I know now, from overeating starchy and greasy food.

"I doctored for two years without any benefit. The doctor told me there was no cure for me. I could not eat anything without suffering severe pain in my back and sides, and I became discouraged.

"A friend recommended Grape-Nuts and I began to use it. In less than two weeks I began to feel better and inside of two months I was a well woman and have been ever since.

"I can eat anything I wish with pleasure. We eat Grape-Nuts and cream for breakfast and are very fond of it." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "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.

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

Poultry-Raising

Simple Automatic Feeder

VARIOUS patented automatic poultry-feeders are on the market, but few are more successful than the one here described and which can be made in a few minutes.

Take an old galvanized iron pail and punch the bottom full of holes about five eighths of an inch in diameter. In the center of the bottom cut or punch a hole an inch and a half in diameter. Take a stick, round or square, about three feet long and thick enough to fit loosely in the large hole. Drive a spike through it six inches from one end. Put the long part through the hole in the pail as far as it will go, and to the lower end firmly nail two crosspieces of lath about a foot long.

Fill the pail with mixed grain, put a cover over the grain and hang up the feeder so the lower end of the stick will clear the ground by about two inches. Turn in your chickens, and they will do the rest. The rapidity with which the grain will fall can be regulated by placing a little straw in the bottom of the pail.



D. S. BURCH.

Selling Well-Dressed Turkeys

TURKEYS of high quality, that will bring the highest market prices at Thanksgiving time, will be young ones. Their rapidly grown, quickly fattened flesh is sweet and tender, and if grown on the range, where most of their food is secured in the natural way from nature's stores, it has a flavor which cannot be otherwise obtained. I have found that the best way to fatten turkeys is not to confine them, but to feed them all they will eat before leaving for the range and when returning at night. The youngsters will take to the range after eating and get enough exercise to promote digestion while

engaged in securing the fresh vegetable and animal food needed to properly balance their ration. I feed principally corn and wheat. Turkeys intended for market should be dressed and forwarded in time to reach their destination a few days before Thanksgiving. Late arrivals are seldom in as great demand or realize as high prices.

Before killing the stock I keep them for eighteen hours in a clean, airy pen and give no food. They may have water up to within eight hours of the time of killing, for water gives a healthy look to the skin and assists in cleansing the digestive organs of matter which would become sour and taint the flesh. A short, stout stick; a long, sharp, steel knife; a strong arm, and a quick hand are required for the operation of killing. Suspend the bird head downward, with its feet in a noose of strong cord, far enough from the walls of the building and other objects so that it cannot injure its wings when it struggles. After stunning by dealing a sharp blow at the base of the skull with the stick, pass the left arm around the body of the turkey, under the wings, holding the side of the breast toward you. Grasp the head in the left hand, and open the bill with the thumb and forefinger. Thrust the knife-blade in through the mouth to just back of the brain, and make a sharp cut directly across the roof of the mouth, severing the arteries.

Hold the bird firmly, with the left arm and hand in the same manner, and begin at once to remove the feathers with the right hand, beginning at the junction of the head and neck and working up over the breast and body. Then give the bird a turn which presents the back to the operator, and begin at the neck or between the wings, and pluck toward the tail. The short feathers of wings, tail, shanks and neck are removed next, and the long feathers of the wings and tail, if removed at all, are plucked last. As a rule, the feathers of the last joint of each wing are left on and are much appreciated by the purchaser of the bird for use about the kitchen. The skin of the turkey is less likely to be torn than that of a chicken or duck, but one should be very careful in the work of removing the feathers. The thumb and forefinger do most of the work by firmly grasping a few feathers and removing them by a quick jerk, which begins upward toward the tail and terminates outward, which movement is accomplished by a quick twist of the wrist. This method is less likely to tear the skin. Careful handling after picking is very desirable, for a bruise will cause discoloration, which is detrimental to the appearance of the bird.

After picking, the bird should be cooled by hanging it in the open air out of the sun, long enough to allow the escape of all animal heat, but not long enough for it to freeze. The feet and head should be washed clean and wiped dry, all blood removed from the throat and mouth. If care is used when killing and handling, it will not be necessary to wash the body of the bird, and the skin will retain its bright, yellow appearance better than if dampened or cooled in water.

All consignments should be packed tightly, not jammed, in clean boxes and sufficient packing put in before the cover is nailed on, to prevent shifting en route. Birds of different sizes, but not of different quality, may be packed in the same box. The contents of the box should be correctly marked on the outside of the cover. Large boxes are inconvenient to handle and less desired by small dealers than boxes weighing from one hundred to one hundred and fifty pounds. Before placing the birds in boxes, especially for the fancy trade, the heads should be cut off and the skin drawn forward over the end of the neck and tied with a string. Each carcass, when thoroughly cooled, should be wrapped in clean wrapping-paper and packed at once. Paper without much color should be used, or at the end of the journey the color of the paper will be found to have colored the skin.

A. E. VANDERVORT.

American farmers will have a new and better banking system. The story is told on Page 19.

Chickens

CHICKENS may be raised in a variety of ways, but chickens raised on paper yield the most satisfactory results. This is owing to the price of eggs. For whereas eggs ordinarily fluctuate a good deal, the eggs of chickens raised on paper are invariably sixty cents a dozen.

There's money in eggs at sixty cents a dozen—more, perhaps, than the average consumer cares for. The average consumer is looking not so much for money in his eggs as for something that will make cake light. Chickens have but two feet and no hands, consequently they are not a bit clever at seizing the psychological moment. The psychological moment for laying eggs is in the winter, but nine chickens out of ten will let it get by them.

A gentleman chicken can be supported, but a lady chicken is sufficient unto herself. That is to say, she will lay an egg and eat it, and lay another and cat that, and so forth and so on until eggs fall below ten cents a dozen, whereupon, of course, nobody who is anybody cares for them any more.

RAMSEY BENSON.



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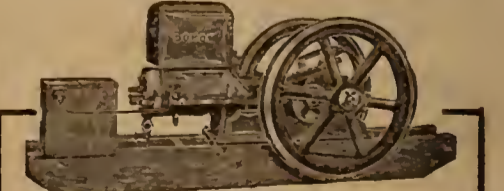
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GARDENING
By T. GREINER

Chances in the Garden

A READER, stirred up by my statement of \$200 returns from one-eighth acre in vegetable-plants, especially cabbage and celery, asks me what may be his chances of securing an income of, say, \$800 an acre on two acres planted in these or similar crops in the suburbs of a small city or large village.

An income of \$800 or \$1,000 from an acre of market-garden crops, and especially of vegetable or flowering plants, is not only within the reach of possibility, but also of reason, and is actually secured (and more, too) by many gardeners near our cities or villages. But so much depends on local conditions, management, skill of the grower and seller, that I would not give any guarantee, nor even encouragement, to anyone who wants to pick up this enterprise, as an outsider, and without much previous training or experience. The chances are good enough, but for the right person only. Begin slowly, gradually, carefully, and expand as you see your way clear. Do not let my figures tempt you to run in debt for land, giving up another business that has so far provided a living. Use discretion and common sense.

Fountain-Pen For a Favor

Everyone needs this Fountain-Pen. Farm and Fireside has obtained for its readers a wonderful Fountain-Pen. You can get one by doing a small favor.

THE Handy Fountain-Pen is one of the best pens made for usefulness and wearing qualities. It has a fine, well-made gold-tipped pen. It is made of vulcanite, which is like hard rubber. There is a close-fitting dust-cap to protect the pen-point. For steady use this pen is hard to beat. It is easily filled and a filler is furnished with each pen. The special feature of the Handy Pen is its free-flowing ink, requiring no shaking.

You will be delighted to have so fine a fountain-pen. You will have use for it many times a day. It is the most convenient pen that anyone could have. This one is guaranteed to write well.

Our Offer We will send you this wonderful fountain-pen by return mail if you will send us only four one-year subscriptions to Farm and Fireside at 40 cents each, our special club-raiser rate. Tell your friends that this is a special bargain offer. You can easily get them in a few minutes. Send the subscriptions to

FARM AND FIRESIDE, Springfield, O.

Hastening Early Maturity

It was over twenty years ago when I first saw the good effects that the use of a little superphosphate had in hastening the maturity of grain and certain garden crops. To quote from an article of mine appearing at that time in the columns of FARM AND FIRESIDE: "A slight excess of phosphoric acid tends to hasten the maturity of any crop. For this reason it is always prudent to apply some superphosphate to crops requiring a long season, such as tomatoes, corn, melons, etc."

A little help in hurrying our vegetable crops along, especially sweet and other corn, tomatoes, melons, eggplants, Lima beans, etc., was badly needed this season. Everything was unusually late, and it was only the fact that frost was equally tardy this year, which made it possible to ripen at least the bulk of these crops. But you may be sure the application of acid phosphate in growing them is not so liable to be forgotten or omitted after this.

More Onion Queries

Fall plowing the land? Yes, it's often of benefit. Plow the weeds and rubbish under, and leave the land well ridged up, exposed to the action of frost, or freezing and thawing. Fine manure should be scattered evenly over the surface during fall or winter, and worked in in early spring.

Mixing hen-manure and ashes for onions? No, unless the mixture is applied at once, and worked into the land so that the earth can absorb the ammonia before it escapes. Better apply each separately. They are excellent manures for onions.

Seeds or sets? That depends. If you aim for nice dry or fall onions, of the ordinary standard varieties, better sow seed in drills twelve to fourteen inches apart, very early in spring. If you wish for green or bunching onions, you can get them by planting sets, in rows of the same distance, and as early as possible in spring. Or sow White Portugal (Silverskin) seed rather thickly in drills early in August, or plant sets of the Winter (Egyptian) onion during that month, leaving these onions out all winter to be pulled and used in spring.

Winter protection? "Is it necessary to protect by some covering the onions started from seed in August and intended for green spring onions?" Not necessarily. They have usually wintered well with me. But you can try mulching between the rows. It may prove to be of benefit.

FLORIDA FOR SALE—BARGAIN

BEST GROVE in Southern Florida, situated below the frost line and about 1 1/2 miles of Fort Myers, a town of 5,000 and adjoining East Fort Myers; 30 acres in tract, 22 acres set to grove containing 1,400 grapefruit, orange, and tangerine trees, mostly grapefruit; 800 trees, 12 to 25 years old and will bear from 5 to 20 boxes each; 400 just starting to bear; 8 acres cleared can be divided into building lots, as lots are already sold on two sides of same; 3 streets leading to property; 5 room cottage, large barn and packing house; 4-inch flowing well, 700 ft. deep. Price, \$27,000; one-half cash, balance to suit.

D. F. SCHROLL, 728 W. Chestnut St., Louisville, Ky.

Apple, Peach, Pear Trees

Our nursery stock is raised right—it is the best you can buy. Clean, strong, well-formed trees that are vigorous and true to variety—trees that will reach maturity—The kind YOU want. We also have a fine stock of Dwarf Fruit Trees. Careful attention given to shipping and packing. Satisfaction guaranteed. Prices reasonable.

Write for Illustrated Catalog

Arthur J. Collins, Box B, Moorestown, N. J.

Celery-Grower's Troubles

A new subscriber residing in an Ohio city has planted some celery on rich ground for three years. The plants grow to good size, then the tops turn white, and the plants die. The roots are found to be of a brownish color and to some extent honeycombed and badly decayed, so that they break easily. This, if a disease, is new to me. The first thing I would do is to try to discover, by thorough examination of the roots at various stages of the trouble, or by forwarding infected specimens for investigation to the State Experiment Station at Wooster, whether the trouble is of insect or disease origin. Abstain from raising celery for a few years, or plant it in some other spot. Apply lime to the land. Secure another strain of seed, and perhaps disinfect this by washing in a weak solution of corrosive sublimate, or of copper sulphate (eight pounds to fifty gallons water), before sowing it. Plow the land late in the fall to expose grubs and other insects hibernating in the soil to the weather and to birds or other enemies.

YOUR OPPORTUNITY is NOW in the Province of SASKATCHEWAN Western Canada

Do you desire to get a Free Homestead of 160 Acres of that well known Wheat Land? The area is becoming more limited but no less valuable.

New Districts have recently been opened up for settlement, and into these railroads are now being built. The day will soon come when there will be no Free Homesteading land left.

A Swift Current, Saskatchewan farmer writes: "I came here on my homestead, March, 1906, with about \$1000 worth of horses and machinery, and just \$35 in cash. Today I have 800 acres of wheat, 300 acres of oats, and 50 acres of flax." Not bad for six years, but only an instance of what may be done in Western Canada, in Manitoba, Saskatchewan or Alberta.

Send at once for Literature, Maps, Railway Rates, etc., to

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176 Jefferson Ave. Detroit, Mich.
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Why Not Save 50c on the Dollar When You Buy Underwear?



Men who have been accustomed to pay \$1.00 per garment and more than twice that sum for a union suit of underwear can scarcely believe their eyes when they examine Hanes Underwear for the first time.

"Hanes" is only 50c a garment or \$1.00 per union suit, but "Hanes" is equal in every respect to underwear that costs twice the money. Examine "Hanes" at your dealer's and you'll surely get an eye-opener on high quality and low price.

50c per Garment **HANES** **\$1.00 per Union Suit**

ELASTIC KNIT **UNDERWEAR**

"Hanes" has an elastic collarette which fits the neck snugly and cannot gape or leave the neck open. The improved firmly knit cuffs on the shirt hug the wrist and cannot flare out. The shoulders are reinforced with a narrow strip of cloth running across the wale that prevents stretching or dropping down. The staunch waistband—strongly stitched and thoroughly well-finished—shows the extra fine workmanship put into all parts of the garment.

If we weren't in the heart of cotton-land, bought direct from the growers and specialized on one grade of underwear, "Hanes" would surely cost you \$1.00 per garment instead of 50c. Buy two or three suits of this extraordinarily low-priced, high-quality underwear for the coming winter and save 50c on the dollar.

If you can't find the "Hanes" dealer in your town, be sure and write us.

P. H. HANES KNITTING CO., Winston-Salem, N. C.

This label on every garment **HANES** Buy none without it

75c Per 108 Square Feet Buys Best Rubber Surfaced "Ajax" Roofing

Here we show the lowest price ever known for roofing material. This smooth surfaced roofing we are offering is our famous one-ply "Ajax" brand, and the price includes necessary cement and nails to lay it, and at this remarkably low price.

We Pay The Freight in full to any point east of Kansas and Nebraska and north of Ohio River. We also furnish 2-ply at 90c, 3-ply at \$1.05. This "Ajax" roofing is guaranteed to wear as long and give as good service as any Ready Rubber Surfaced Roofing on the market. It is put up in rolls of 108 square feet, and contains 3 or 4 pieces to a roll. Big value!

We are the world's greatest headquarters for Roofing! Our 40-acre plant is fairly stacked with millions of feet of genuine roofing bargains. Hundreds of thousands of people never think of buying roofing of any kind until they get our prices. It will pay YOU to write for special offers. Samples Free. Write for free Roofing Catalog.

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We Will Arrange Easy Terms To Suit You

Saves 50% in Fuel

Built on The ONLY Correct Principle World's Best Farm Engine

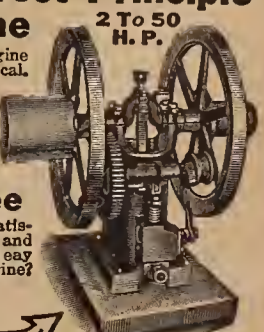
Remember, the "UNITED STATES" is the only Engine which stands on its feet—not a Horizontal or Standard Vertical. Explosions occur low down and shock is transmitted directly into the earth—not into the engine! Result is: (1) Violent vibrations entirely overcome; (2) Bulk and weight greatly reduced; (3) Saving of 50% in fuel; (4) The only practical portable engine made; (5) All parts in sight, easily understood; (6) Lubrication by gravity, the only sure way—(7) Absolutely frost proof. In order to prove all these claims—and many more points of special merit—we earnestly invite you to

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"PROUD AND GLAD"

Because Mother Looked So Well After Quitting Coffee

An Ohio woman was almost distracted with coffee dyspepsia and heart trouble. Like thousands of others, the drug—*caffeine*—in coffee was slowly but steadily undermining her nervous system and interfering with natural digestion of food. (Tea is just as injurious as coffee because it contains *caffeine*, the poisonous drug found in coffee.)

"For 30 years," she writes, "I have used coffee. Have always been sickly—had heart trouble and dyspepsia with ulcers in stomach and mouth so bad, sometimes, I was almost distracted and could hardly eat a thing for a week.

"I could not sleep for nervousness, and when I would lie down at night I'd belch up coffee and my heart would trouble me. It was like poison to me. I was thin—only weighed 125 lbs., when I quit coffee and began to use Postum.

"From the first day that belching and burning in my stomach stopped. I could sleep as soundly as anyone and, after the first month, whenever I met any friends they would ask me what was making me so fleshy and looking so well.

"Sometimes, before I could answer quick enough, one of the children or my husband would say, 'Why, that is what Postum is doing for her'—they were all so proud and glad.

"When I recommend it to anyone I always tell them to follow directions in making Postum, as it is not good to taste if weak, but fine when it has the flavor and rich brown color." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "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.

Poultry-Raising

How Many Eggs Can a Hen Lay?

THE egg as it appears on the table—the finished product—is the result of a long and complicated series of physiological processes. It begins as a microscopic cell in the body of the embryo chick many days before hatching. Indeed, at the time when the poultryman makes the first test of the eggs in his incubator, all the eggs which will be laid by the pullet that will hatch from one of the fertile eggs which passes through his hands are already present in the embryo chick as definite and distinct bodies. As development proceeds, these embryonic eggs, or oocytes, are collected together in a definite organ of the body, the ovary, or "egg-cluster." During the growth of the chick these oocytes develop. They increase in size, chiefly by the deposition of yolk within them. The surface of the ovary becomes studded with little spheres, first very small, but all the time growing. When the pullet reaches the age of about six months, if all has gone well with it physiologically, certain ones of the oocytes begin a very rapid growth—much more rapid than that which had preceded. A relatively thick layer of yolk is added each day, and presently an egg is laid.

When the oocyte has attained that respectability of size which entitles it to be called in common parlance a "yolk," the thin membranous funnel end of the oviduct, or "egg tube," slowly and carefully wraps around it, and encloses it within the cavity of the tube. Shortly the sac of membrane which has held the developing yolk ruptures along a definite line, and the completed yolk escapes from the bonds which have held it during the long months of its growth, and drops free into the egg-tube, which has been wrapped around to receive it.

The freed yolk now passes slowly down the egg-tube, and receives on its way its protecting layers of "white," or albumen, the shell membrane and the shell itself. At the end of the process, the finished product,

an egg, as we know it in every-day life, passes outside of the body of the hen, to begin its checkered course to the breakfast-table of the consumer.

Now, from the standpoint of the poultryman the most interesting point in this long chain of events is that at which the yolk, or developed oocyte, is separated from the ovary. The frequency with which this event of separation (or, as it is technically called, ovulation) occurs within the lifetime of the bird measures its relative success as a market-egg producer. It is a matter of common observation that when the physiological machine which we call a hen is working at its topmost rate of speed only one egg per day is produced. Of course, a hen will occasionally lay two eggs in one day, but this is a rare occurrence, and only means that the timing of the machine was not perfectly regulated. The important and really distressing thing is that, generally speaking, hens do not continue for any considerable period to lay even one egg apiece per day.

Why is this? What determines, biologically speaking, how many eggs a hen shall lay? Is the output anatomically restricted, or physiologically? Or, put it another way: does the hen that lays 125 eggs in the year do so because she has only about 125 eggs in her ovary, while the 200-egg hen has twice as many? Or, are both these birds equally endowed in respect to the number of eggs they carry in their bodies but differ in their capabilities of fetching them forth into the world of breakfast-tables and egg-buyers?

These are problems which the writer has been for some time studying, and the facts in the case appear to be somewhat as follows: all hens, the poorest as well as the best of layers, have an original endowment of eggs, very far in excess of any number which they actually lay. Roughly speaking, it may fairly be said that if actual egg production be measured in hundreds, egg endowment (that is, the number of oocytes in the ovary) is measured in thousands. Furthermore, the number of eggs actually laid bears no relation whatever to the number of oocytes present in the ovary and potentially capable of being laid.

In the writer's laboratory a number of counts have been made of the number of oocytes on the ovaries of laying hens. Only those oocytes which were large enough to be seen by the unaided eye could be thus counted, and it is certain that in every case there are many more, probably several times as many more, microscopic oocytes embedded in the ovarian tissue which are uncounted. But taking only those which are visible to the unaided eye, the results are sufficiently striking. A few examples may be cited. Thus a White Leghorn hen which had laid 198 eggs in its pullet year was killed at the end of that year, and an ovarian count revealed that there were then remaining on its ovary 2,452 oocytes large enough to be seen by the naked eye! Each one of these was potentially capable of becoming a perfect egg. Another White Leghorn hen of the same age as the first laid during its pullet year exactly 2 eggs. Its ovary, when subjected to the counting process, showed the presence of 2,145 oocytes visible to the unaided eye. This extremely poor layer possessed substantially the same anatomical endowment in respect to eggs as the first, yet what a difference there was in the actual laying! No more convincing evidence could be found that the number of eggs present in the ovary is no criterion as to the number which will actually be laid by a bird. Even the humble guinea-fowl, a bird not noted for egg-producing qualities, may have as many as 765 visible oocytes on its ovary.

Taking all the results of these counting studies together, it appears that the differences which the poultryman observes in respect to egg production amongst the members of his flock do not depend at all upon difference in original endowment of the birds in regard to eggs potentially capable of being laid. Every bird has a vast lot more eggs in reserve than it ever actually lays. It is in ability to ovulate—that is, to discharge oocytes from the ovary—that hens differ.

Does the number of eggs in the ovary change during the life of the individual? Can the number be increased in any way? From what has preceded, it is clear that this is not a question of any practical significance to the poultryman, since in any case the number present is so vastly greater than what any hen ever lays. It is an exceedingly difficult biological problem to determine whether new oocytes are ever formed after a bird is hatched. The weight of evidence, however, indicates that there is no increase; that on the contrary the chick is hatched with all the eggs in its body that it will ever have. But this number is so greatly in excess of both its needs and its physiological ability to utilize that this restriction causes no hardship.

RAYMOND PEARL, PH. D.

EDITOR'S NOTE—Doctor Pearl is Biologist of the Maine Agricultural Experiment Station. His statements are accurate, they come from a wide experience with poultry. And the ideas, though expressed in scientific terms (they could not be stated otherwise) are of immediate value to the man who depends upon eggs for money returns—even if those returns are but a small part of the total farm receipts.

Ridding the Hen-House of Rats

IHAVE found by actual experience that if the lime from used carbide, such as remains where carbide lights are used, as on automobiles, etc., is scattered around in the hen-house the rats will keep away and will not bother the chickens there.

Simply scatter it over the floor or put it in two or three different piles on the floor. The smell seems to keep them away. You do not have to repeat the dose very often, as the smell usually remains in the hen-house for several weeks. GREGOR H. GLITZKE.

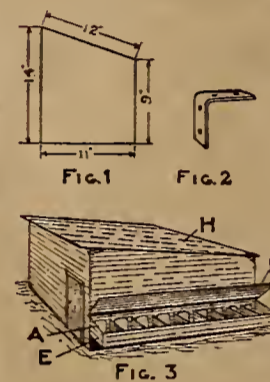
Concerning Nest-Eggs

THERE is still a great deal of superstition about poultry matters, and the real purpose of nest-eggs comes in for its full share of comment.

No, the ordinary china nest-egg does not make the hens lay white eggs, nor lay more of any kind, nor teach the hens to sit.

A nest-egg merely encourages a hen to lay another egg in the same place, thus preventing her from stealing her nest. The maternal instinct of a hen leads her to try to lay a nest full of eggs, on which she can sit if nature's plan is not disturbed by gathering the eggs as fast as they are laid. D. S. BURCH.

Good Nest-Box



IT IS easy to make a nest-box which will enable you to gather the eggs without going inside the hen-house. It is fastened to the hen-house seven inches from the floor by pieces of iron shaped as shown in Fig. 2. These have holes in them and can be screwed to the nests and house. Fig. 1 is

the end made of one-half-inch wood. There are two of these. Nail boards on the back of them as long as the side of the hen-house. Make a bottom of boards or tin, and nail it to the ends. The cover is made of weather-boarding and is two inches longer and one inch wider than the nests. This is hinged to the hen-house. The partitions which separate the nests are nine by eleven inches and ten inches apart. Holes are cut in the side of the hen-house, through which the hens may pass into the nests. In Fig. 3, H is the hen-house; A shows the holes; E is the end shown in Fig. 1, and L is the cover of the nests. These nests are dark, easy to clean and are handy when sitting-time comes. HORACE H. DAHL.

Fight the Weasel

IWANT to ask every reader of this paper to combine in a war against the weasel. We war against the skunk, hawk and the fox as destroyers of game, birds, etc., and we overlook the worst and boldest of them all. The partridge roosts at night on the ground. The pheasant and other game-birds roost low. And the weasel hunts at night with devilish cunning.

One or two will just about exterminate a flock of partridges, and a rabbit in its den of rocks is at the weasel's mercy. Weasels will climb trees after sleeping game. They have no fear of man, but when disturbed will boldly turn to attack him, leaping right at the throat, where a sharp bite from one is dangerous, if not fatal. One family of weasels will do more to exterminate the game than any other foe, and all gunners, hunters and people interested in the protection of game should aid in cleaning out every one of these pests. They are so quick of motion that it is of no-use to try to kill them with a club, and no trap will entice them.

One neighbor had a flock of young pure-bred Brahma chickens. A pair of weasels killed ten in one night, merely to suck the blood. Another neighbor saw a gang of six crossing the road ahead of him. Just the other day I ran across two near the road. A neighbor and I killed both. Only a short time ago three of us had a fine scrap with one that ran from under a hay-cock and turned to fight us. A pitchfork served us well that time. They breed so fast as to be a real menace to all wild game. And their ravages on the poultry-pen are no less complete. Fight them! C. E. DAVIS.



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I want to send a pair to you on free examination. I want you to put your feet in them and walk around the house just to feel how much better they are than the best pair of all-leather workshoes ever made.

No More Corns, Bunions or Callouses

This shoe has absolute foot form—and the sole being of steel it cannot warp, twist, nor draw out of shape. Consequently, it is easy to be seen that corns, bunions, callouses, etc., cannot be irritated, and no portion of the foot be rubbed so as to start new miseries of this kind. No all-leather shoe can fit after it has a twisted, broken sole that allows the uppers to crease up into galling wrinkles.

Save Your Health

This steel soled, waterproof shoe is an absolute protection to your health, aside from being a comfort to your feet; for you may work all day in mud and water with your feet powder dry. You escape colds, rheumatism, neuralgia, the dreaded pneumonia, and the long list of ills that result from damp or wet, cold feet.

Saves \$10 to \$20

One pair of these light, springy, comfortable shoes will outlast three to six, or even eight pairs of the best quality, all-leather workshoes. There are no repairs—and no loss of time, or trouble of any kind. The soles and sides (as shown in illustration) are stamped in one seamless piece from light, thin, springy steel, secured firmly to uppers of the very best quality soft, pliable leather—

absolutely waterproof and almost indestructible. The soles are studded with *Adjustable Steel Rivets*, which give perfect traction, firm footing, and protect the soles from wear. The rivets themselves (which take all the wear) can be replaced when partly worn. 50 rivets cost but 30 cents, and should keep the shoes in good repair for two or even three years.

These Shoes Are Lighter Than Leather Work Shoes

and the firm, yet springy, elastic tread gives you an ease and lightness of step and comfort that delights your feet, and gives your whole body a resiliency that lifts the pain and burden from the work of the day. You can walk more, stand more, do more, earn more—and live longer in perfect muscular health and strength. Men's sizes, 5 to 12—Boys' sizes, 1 to 4. Six, nine, twelve and sixteen inches high.

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I take all the risk—absolutely—and leave it wholly up to you to say from your own trial and examination, that this shoe is all or more than I claim for it—that it will preserve your feet, protect your health, and save you the money you now waste in continuously buying the old, heavy, leaky, warping, unsanitary and painful leather-soled workshoe that looks bad, feels bad, smells bad and wears out every few months at the very best. I have saved over a million feet—and I want you to try a pair of these shoes to convince yourself of what they will do for you and save for you.

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N. M. RUTHSTEIN, "The Steel Shoe Man"
Canadian Factory at Toronto, Can. 36 Racine St., Racine Wis. Great Britain Factory at Northampton, Eng.

Crops and Soils

A Practical Liming Test

LAST fall, when I was sowing my wheat, I took about one-fourth bushel of air-slaked lime and sowed it over three square rods of land, just before the drill that was sowing my wheat.

The plat where the lime was applied was marked by driving a stake at each corner of the plat. The drill was run over this plat, sowing wheat and acid phosphate just the same as on the other parts of the field.

I watched this plat of wheat and compared it with the other parts of the field at all stages of growth, but could see no difference in the growth until it began to head out. Then this plat looked slightly better than the surrounding wheat. When it was ripe, it seemed considerably better than the surrounding wheat.

In April I took a little clover-seed and sowed across one end of the limed plat and also extended the strip about one rod in length into the unlimed parts of the wheat on both sides of the limed plat. We had a very dry season for about three weeks in June that gave young clover a pretty severe test. Recently I was looking over the wheat-stubble, when I came to my limed plat of ground. I found a good stand of clover where I sowed it on the limed soil, but where there was no lime applied the clover was all, or practically all, killed out.

Some say that the litmus-paper test on a small scale is a sure and more simple test for the average farmer to determine the need of lime in the soil.

A. J. LEGG.

before, but from new tubers he failed to get while digging. He further knows that all the old tubers he planted exhausted their vitality making tops to make new tubers and then rotted. Now this is exactly the case with Johnson grass, only it makes rhizomes, or rootstocks, instead of tubers, and these rhizomes, which are taken to be roots, perish every year, just as the tuber of the potato, after they make tops and new rhizomes for the next year's crop. Hence all that is necessary to destroy Johnson grass in one season is to find the best method of preventing these rhizomes from forming. Do that thing, and the deed is accomplished.

I further discovered in my investigations that these rhizomes (not like tubers, which form anywhere in the soil at varying depths) always form at the surface, at the juncture of the top and root, known as the crown of the plant. Furthermore, that they invariably begin to form at a certain stage of the plant. These facts greatly lessen the burden of destroying this grass. The stage of growth, indicated by the top, at which these rhizomes begin to form, or in other words begin to make seed for the next year's growth, is just at the stage the top begins to bunch to form or send out the seed-head. You must not wait until the seed-head shows. It will then be too late. At the stage given take a common weeding-hoe or a sweep, if you wish to use horse-power, and shave the grass off just at or a little below the crown. Do this repeatedly from the time the grass first comes up in the spring until August, and if the work is thoroughly done, the grass will be completely destroyed.

Johnson grass is a great renovator of depleted soils. It approaches the value of the legumes. The great mass of rhizomes that annually decay adds many tons of vegetable

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The only gun that fills the demand for a trombone ("pump") action repeater in .25-20 and .32-20 calibres.



Shoots high velocity smokeless cartridges, also black and low pressure smokeless.

Powerful enough for deer, safe to use in settled districts, excellent for target work, for foxes, geese, woodchucks, etc.

Its exclusive features: the quick, smooth working "pump" action; the wear-resisting Special Smokeless Steel barrel; the modern solid top and side ejector for rapid, accurate firing, increased safety and convenience. It has take-down construction and Ivory Bead front sight; these cost extra on other rifles of these calibres.

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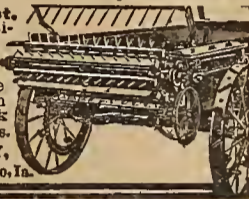
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If you want to make more money than you do now or if you are looking for a good job, write to us to-day.

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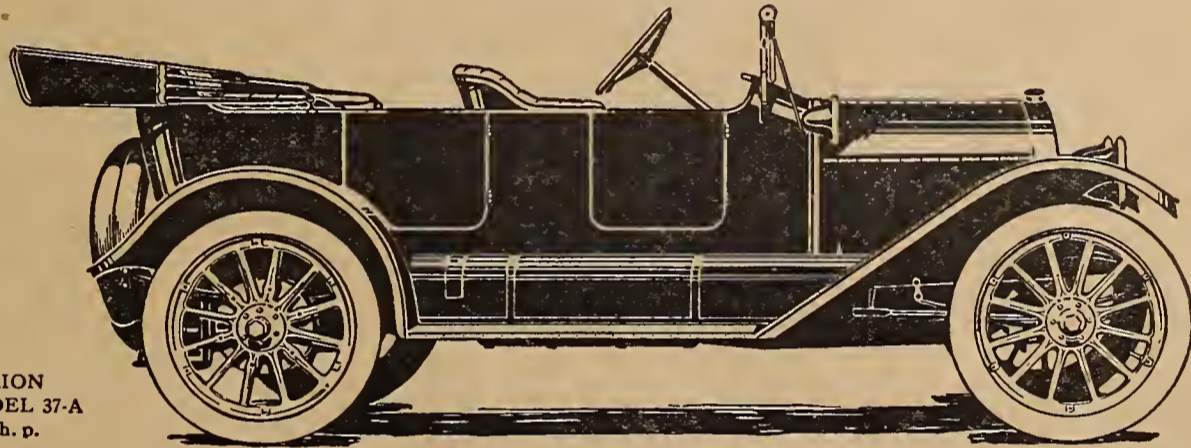


Profitably using the winter's manure

Johnson Grass Easily Killed

FOR twenty years I "cussed" and discussed Johnson grass in language more potent than polite. This was all brought about by the "blind leading the blind," but not with the same equitable results as spoken of in Holy Writ, where they both fell in the ditch together. This was a case of digging a ditch to get the Johnson-grass roots out of the field. I, the blind follower, bent my back and sweated in the broiling sun digging this ditch all alone, while the blind leader, who issued some bulletin from some agricultural department, was enjoying himself, sitting in the shade of some office drawing Government pay. But such is life. Like Saul of Tarsus, the scales fell from my eyes in the year 1905 and I saw the true light, and like him I have become an apostle of that I once so vehemently fought. I now boldly proclaim that Johnson grass is a friend, more than a pest to the southern farmer, and if it would grow as thriftily in the North as in the South, the northern farmers would hail it as one of their choicest blessings.

The prime cause of imposing upon the farmer this heavy and unnecessary task of eradicating Johnson grass, and thereby bringing the grass in such bad repute, was an error in its classification by botanists. All plant life is divided into three general classes: the perennials, the biennials and the annuals. A perennial is a plant which lives or continues more than two years. Biennial plants continue for two years and then perish. An annual is a plant that requires to be renewed every year. In other words, an annual must make seed one year to perpetuate itself the next year. Ever since Governor Means of South Carolina introduced Johnson grass into the United States from Turkey in 1830 botanists and agricultural departments have taught that this grass was a perennial, and therefore the roots had to be dug up and carried out of the field in order to eradicate it. This was a grave error fraught with many ill consequences to the overburdened farmers of the South. I discovered in 1905 this grass to be an annual. Therefore, as every farmer knows, any annual can be destroyed in a single year by preventing seed from forming for the next year. Some annuals are more difficult to destroy than others, and Johnson grass is the most difficult of all the annuals. It is a rapid and vigorous grower and, like the Irish potato, has two methods of seeding, one above and the other below the ground, and, like the potato, the underground seed is the most important in perpetuating the life of the plant. The potato must make new tubers every year, or else no tops will appear in the same patch the next season. If new tops do appear, as often occurs, the well-informed farmer knows that they did not come from the tubers he planted the year



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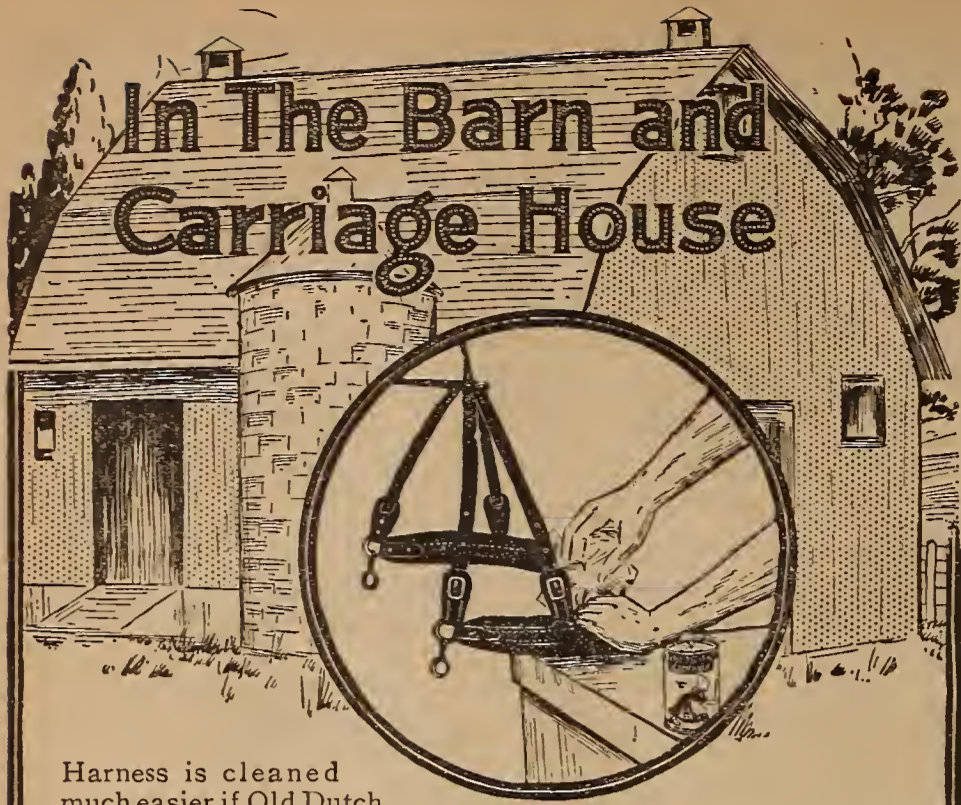
These few items simply indicate the staunchness of the Marion car as a whole. We cannot begin to tell you here all of the particular points of importance to farmers, but we have an illustrated folder which will show them to you. Send for it today. We will be glad to hear from you. The Marion dealer in your locality will be glad to give you a real demonstration. You will find him a reliable man.

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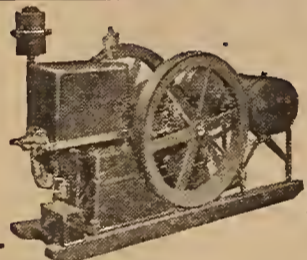


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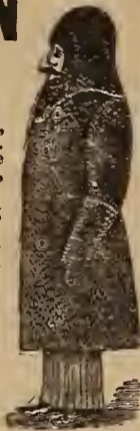
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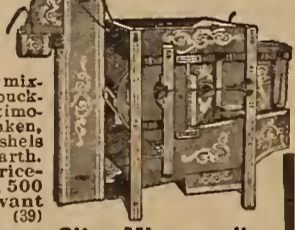
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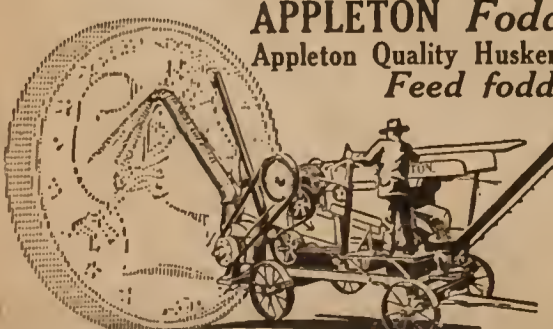
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matter to the soil, equivalent to many loads of barn-yard manure, and is much deeper in the soil than man can place it.

When the southern farmer realizes with what comparative ease this grass can be killed, and likewise its great hay-producing and drought-resisting qualities, it will be more extensively cultivated. The day is close at hand when the up-to-date farmer, as soon as his land begins to run down from cultivating cotton on it for years, will sow it down in Johnson grass. He will then gather splendid crops of hay from this land three or four years, at the end of which time his land will be restored to much of its normal fertility. He will then replant in cotton, and make at the rate of a bale to the acre, and kill the Johnson grass with the same labor with which he cultivates the cotton. With a practical monopoly of these two great farm products, the South should be the most prosperous section of the globe.

H. A. HALBERT.

No man is really a successful farmer until he has brought every foot of his land under subjection.

Cooperation Means Speed

THERE is an important lesson to be learned from the story of an Iowa township. That lesson is important in more ways than one. The story is very brief and very simple. It is this:

The township is located in a section of the State that produces a great deal of very high-class live stock, corn and other crops. In fact, it is a township of mixed farming done by well-to-do, successful farmers.

In that township there are six thrashing outfits owned by partnerships of four to eight farmers. Each outfit consists of a fully equipped grain-separator and a steam thrashing engine with a water-tank. That is all that is owned in the partnership. The outfit is used only to do the thrashing on the farms owned or operated by the members of the partnership. One man operates the engine and two others operate the separator during the whole round of the various farms. These men, of course, are either those members of the partnership most experienced at such work, or are experienced men hired by them for the thrashing season.

The plan for distributing the costs of the outfit for the season, among the various members of the partnership, vary more or less in different instances. But in each case a careful attempt is made to so divide these costs that each member shall pay according to the amount and the variety of the work which was done for him.

The routine of the work done each year is arranged systematically so that, in the end, each member shall have fared alike. Various details in the original purchase of the machine, the care, management, operation, charges for various kinds of thrashing done, and so forth, vary somewhat in the various partnerships, I understand.

One of the interesting lessons to be learned is the fact that farmers can cooperate. As I now look back upon the days and years I was a lad on the old home farm. I am much impressed with the lack of mutual confidence and trust, and the inability of any two or more of us to get together on a mutually satisfactory basis for doing anything. One remarkable exception was the instance of one man who spent nineteen years on a rented farm, and after the first year or so there was not even a written lease in existence. The renter lived across the road from his landlord. They agreed; both accounted his own and the others' word as good as his bond, so they got along well.

But there is a growing spirit of cooperation among us farmers. We are rapidly realizing that our interests are mutual. This is good; good for us, good for our business and good for the world at large. And this spirit of cooperation and mutual trust will grow only as we forget little things, overlook small faults and eccentricities and remember to look at only the larger, more important, more fundamental, things in each other.

A great deal of expensive machinery can be owned and operated in this way. If separators and thrashing engines can be successfully owned and operated in partnership, then other traction machinery can be owned and operated in the same way. And herein lies an important opportunity which these different partnerships failed to grasp.

With but very little, if any, additional cost, the engines which were purchased could have been general-purpose tractors instead of the old-fashioned single-purpose thrashing engine fitted to do only belt work. Such an engine will do the various kinds of belt work just as successfully as will the single-purpose machines. And in addition to this, it will do all kinds of field work and hauling.

The additional expense for a traction gang plow would have equipped a partnership for doing traction farming on each of the farms represented. The plowing could be arranged for in the same routine, and paid for in the same way, as was the thrashing. The binders owned by the members could be clubbed together and put behind the tractor to do the harvesting; and it would be done better and quicker than it could be done in the old way with horses.

H. A. WILLIAMS.

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Farm Notes

Trapping

A Money-Making Sport for Farm Boys

WHERE will you find a wide-awake red-blooded farm boy who, after the chores are done and all "odd jobs" cleaned up for the day, does not enjoy a rabbit-chase with old Rover in the back pasture, or a stroll through the near-by woodland along some rippling stream, where, perchance, he may get a glimpse of a sleek-coated muskrat, or see sly old Reynard the fox starting out on his nightly rambles? The desire to live close to Nature and study her ways, or, as one writer has so aptly put it, the "call of the wild," is so deeply implanted in the blood of the human race that it finds its way to the surface at some time during the life of each individual. The life of the farm boy favors the cultivation of this trait of his nature.

Trapping affords the farm boy not only a splendid opportunity to "get close to Nature and study her ways," but it is, in a section where fur-bearing animals are plentiful, quite remunerative. It also teaches the boy the value of close observation.

The trapping season usually opens—that is, furs are in condition to trap and of market value—about November 20th throughout the central part of the United States; the date being about twenty days earlier in the northern and fifteen days later in the southern part. A good rule is never to set traps for fur game until the weather gets real cold, for it takes cold, freezing weather to make fur grow. Some trappers claim that a few frosty nights will cause fur-bearing animals to grow a coat of fur, but the writer has found this not so in his section of Indiana. He has never yet found a prime pelt until after cold, freezing weather, and during warm, rainy winters he has taken unprime pelts at midwinter. Don't take the pelts of fur-bearing animals until they are prime, then you will get full value for them when marketed. A medium-sized mink would be worth 75 cents to \$1.00 if taken in October, but if left until December it would be worth about \$4.00 to \$4.75.

Use good traps. A poorly made trap will often lose enough game in a few nights to

making the set, and leave the surroundings undisturbed. When setting a den, always place the trap a few inches away from the opening—unless trapping in a vicinity where dogs are numerous—as an animal often approaches a den, but does not enter. It is a good plan when setting a trap in a "runway" or trail to place the trap a little to one side of the center of the trail, as most animals when running a trail or "runway" place their feet well apart, and a trap in the center of the trail is not so sure of results.

Always fasten the trap to a light brush or "drag" that the animal can drag about when captured, and you will not lose much game by it pulling out of the trap.

When trapping for muskrats, mink, raccoon and such animals along a stream early in the season before freezing weather, it is a good plan to use a "drowning-pole," especially if one cannot visit his traps regularly, as with its use the captured animal is drowned. It is thus hidden from "sneak-thieves," a great item in some localities.

To summarize: Prepare for the trapping season early, by getting traps, stretching-boards, etc., in good order; select the location of the grounds over which you intend to trap; don't begin trapping until cold weather, and properly prepare the skins of the animals captured for market. Study the market, and post yourself on the correct values of the different kinds of furs. Remember that a small collection of well-handled prime furs, will net the trapper more money than a much larger collection of unprime or improperly handled furs.

WALTER S. CHANSLER.

Farm Extraordinary

One Which Has Been Scientifically Cropped with Timber for Fifty Years

QUITE a number of times I have visited Alec Brownfield in his cozy home, nestled in the hollow of his mountain timber farm, back-walled by the huge limestone and sandstone strata, while between is Pine Creek merrily splashing a crystal frolic down its boulder bed, snuggled in with banks of laurel and canopied over with arching branches.

The first visit, nearly ten years ago, was with a few choice friends for a day's outing to eat dinner in the woods above the house. I met Alec and his family. He and his wife were elderly people, easily described by the three h's, hale, hearty and hospitable, with one exception, that Alec was somewhat troubled with rheumatism in his locomotor apparatus. Still, he walked around with us and took delight in talking about and showing us some of the wonders of his five-hundred-acre timber farm.

In subsequent visits he told me added bits of a truly unique personal history, standing as it does alone in the timber annals of the United States; for it is the only farm in our national domains which has been scientifically and annually cropped for its saw timber for fifty years. Nothing in this country has approached it in the system or in the length of time of operation.

His father bought and moved on to the place in 1857, when the mountain-side was a virgin forest, except for about fifty acres which had been cut off clean for making charcoal for use in the iron furnace, the remains of which still stand on the place. Twenty more acres have been cleared since, but the whole of the remainder was kept in timber for over fifty years.

The farm is on the western slope of the Laurel Ridge of the western border of the Appalachian mountain system, about ten miles from Uniontown, Pennsylvania, the county-seat of Fayette County.

Alec's father established a sawmill, and selected out the giant chestnut, white oak, red oak, rock oak, cucumber, pine, hemlock, poplar, linn, locust and birch trees, sawing them in his own mill, and leaving all timber of under thirty inches in diameter uncut to grow up into good-sized sawlogs. This process went on until all the trees over thirty inches were cut out, care always being taken to throw the trees where they would do the least injury to the smaller trees and saplings. The tops were cut and disposed of in the woods where they would be least in the way, and left to rot. The question of cord-wood was not thought of, as soft coal is in abundance through the near-by region, although not in the mountain.

About thirty years ago Alec's father died, and he has kept up the same cropping practice established by his father, and averaging about 100,000 feet of sawed lumber annually, marking the trees himself for the yearly cut, but never anything under thirty inches. He cleared about eight dollars per thousand feet.

His father had frequently told him that the time was bound to come in the son's lifetime when the subject of forestry would be of vital and national importance, because of the decreasing lumber supply and the increase of floods, and that the forests would have to be cropped just as he was doing. He was a true prophet. The time has come.

The trees have averaged one inch of girth growth per year, so that not a tree is standing on the farm which was there when his father bought the place. In fact, the first generation has grown up and all been cut off, and the second complete generation nearly ready to cut, and all within the working and managing lifetime of one man,



He may be frightened by the camera, but he is a good trapper

pay for a dozen good traps, then, too, the cheaper grade of traps often lose their "strength," or "holding power," after a few months' use.

The size of traps best to use depends largely on the locality in which they are to be used. For skunk, mink, opossum, and muskrat I find the No. 1 trap to be very effective. For fox I use the No. 2, and for raccoon the No. 1½. In a locality where there is no game larger than the fox I would recommend getting three fourths your traps the No. 1 size, and the rest No. 1½ and No. 2. Traps should be "rusted" before setting—that is, they should be hung out in the weather a few weeks. Boiling them in a kettle of water with bruised willow-bark will effectively remove brightness. They should be well oiled at all working parts after "rusting," and each trap should be set and sprung, to test the springs and to see if it is in perfect working order.

The number of traps to use in a trapping campaign will depend largely on the locality, character of the country and on how extensive one wishes to engage in the business. Under ordinary circumstances thirty to forty traps will suffice for the average farm boy. Remember, it isn't the number of traps you set out that brings in the game—"it's how you set them." Half a dozen traps well set in good locations will take more game than a dozen if poorly set and in a location where game do not frequent. In setting traps, first ascertain whether animals are frequenting the spot selected, and if so set your trap in such a manner that when "covered" you can't detect the slightest change in the surroundings. Cover the trap with the same material that you remove in



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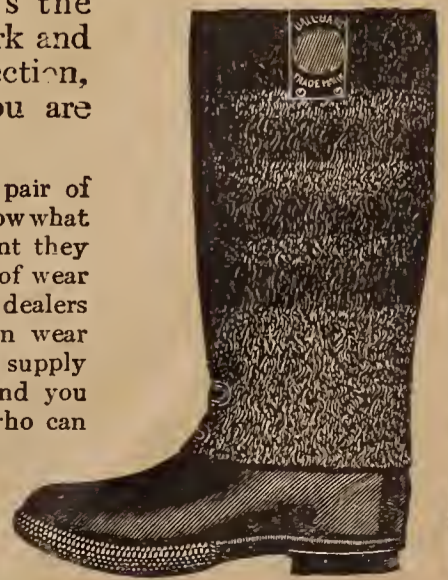
After you have worn one pair of "Ball-Band" boots you will know what real quality is. For every cent they cost you, you get a full return of wear and satisfaction. Over 45,000 dealers sell them. Eight million men wear them. If your dealer cannot supply you—write to us. We will send you the name of a nearby dealer who can supply you.

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that we challenge any maker to excel it. This interests you—it convinces you that when a Century protects your feet it is also protecting your pocket-book. The "Kolrib" is the same boot with ribs on top and extra reinforced ankle. Both are tigers for wear. Snag-defying pure gum soles and heels; toe and sides of best rubber and strong duck make them battleship boots for wear in damp, wet situations. Remember they embrace "all" that you hope for in rubber boots. Look for the "Cross". If your dealer hasn't them, write us his name and we'll see that you're supplied. Write for booklet No. 29.

Beacon Falls Rubber Shoe Co., Beacon Falls, Ct.
NEW YORK CHICAGO BOSTON
106 Duane St. 306 W. Monroe St. 241 Cong. St.

and the woods in such condition as to continue the process forever. The mountain-side is not fit for anything but forest-trees on account of the rocks and stones, and only the clear-sighted judgment of the elder Brownfield showed him that the annual cropping system was the one practical thing to do, as it, and the cleared land, would afford him and his descendants a comfortable living as long as the earth lasted.

Every argument for small and large forest tracts advanced by forestry experts for

watercourses in the other hollows and mountain-sides vary with the rains, as the land is more or less denuded.

But the inevitable change has come. A few years ago Alec's only son, who was carrying on the farm in the footsteps of his father and his grandfather, died. This left the old folks without anyone to manage the timber, as other help was extremely unreliable. The other children, grown up and married except one, a school-teacher, urged their parents to sell and move to the town of Fairchance, five miles away.



The old mill where Alec annually sawed 100,000 feet of lumber from his mountain timber farm. It has now fallen into decay

It was an awful crisis for Alec, for the life and pride of the woods was his life, he had paternal interests in every sapling and tree, he has the heart of the true naturalist. It was like pulling out his heart, but he finally sold to a man in the county-seat, who talked as though he were struck with the abundant water-supply and the adaptability of the magnificent woods for the purpose of making it a retreat for a select number of families who would wish to build summer homes in such a delightful spot, and that he had no desire to spoil such a scientifically managed forest farm by cutting down everything for lumber. Only under this very definite understanding did Alec finally consent to sell and move to town.

New Holland

SAWS

Free Trial Low Price

Hard-wood or all-steel saw frames with latest improvements. They are time and money savers. Large rollers return table automatically. Patent rock shaft prevents saw breakage. Many other practical, exclusive features. Catalog free. Our low prices will surprise you.

NEW HOLLAND MACHINE CO.,
Box 44, New Holland, Pa.

\$10 HERTZLER & ZOOK

Portable Wood SAW

Guaranteed 1 year. Cheapest and best—only \$10 saw to which ripping table can be added. Operates easily. Get catalogue now and save money. No middleman's profit.

Hertzler & Zook Co., Box 9, Belleville, Pa.

the conservation of the forests, besides the commercial advantages of the system, is demonstrated on Alec's farm. The springs are full, clear and cold all the year, with scarcely a noticeable decrease of flow in dry weather, the forest and undergrowth holding and letting out the water gradually; forest-fires may rage all around in the cut-over tracts, but the fire cannot harm Alec's trees, for the underbrush, ground and mold are saturated with water. The springs and

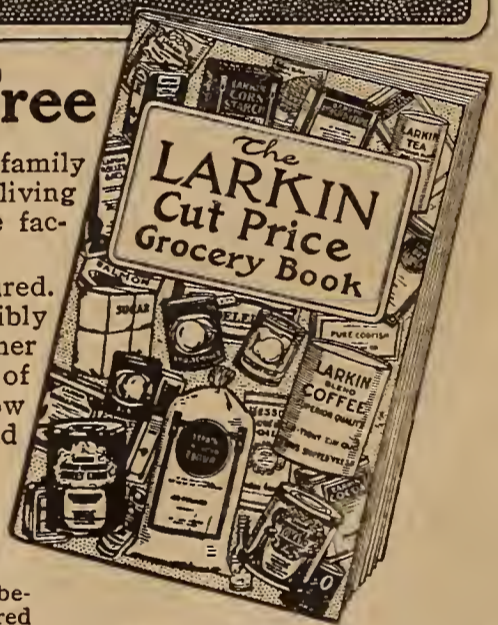
Soon after, the Pine Creek Lumber Company was formed, and most of the trees large enough for sawlogs are cut and sawed, and the remainder, which is large enough for railroad ties, mine props, pit rails and ties, will be taken out. The whole forest is being ruthlessly slaughtered.

How to Save \$50 to \$150 a Year On Things You Eat

This Book Tells—We Mail It Free

Madam, how would you like to save \$50 to \$150 per year on family food expense? Not by any new-fangled scheme of cooking, not by living less well, but by purchasing A-No. 1 quality eatables direct from the factory at from 15 to 50 per cent less than usual retail prices.

Well, you can do it just by sending a postal for the book here pictured. It offers amazing bargains in almost every food product you can possibly need—200 groceries at wholesale prices or less, and over 500 other household supplies at actual factory-prices. Price and description of each article is plainly given. Also full explanation of how to order; how to get lowest freight-rates; how we guarantee prompt, safe delivery, and



Alec Brownfield's home

Selling \$8 Worth of Groceries for \$5

Here is an example of what many a woman saves by spending \$5 for Larkin groceries:

	Our price	Usual price
½ lb. imported tea, choicest growth.....	\$0.17½	\$0.35
1 lb. superior cup-quality coffee .....	.26	.35
2 lbs. roasted cereal .....	.15	.30
½ lb. Phosphate baking powder .....	.07½	.15
2 packages gelatine.....	.10	.20
5-lb. pkg. fancy table salt.	.05	.10
2 oz. double strength flavoring extract.....	.10	.20
49 lbs. highest grade Patent Spring Wheat Flour, milled from choicest No. 1 hard wheat	1.45	1.80
5 lbs. fancy rice.....	.30	.50
3-lb. can choicest tomatoes	.10	.15
2 5-oz. cans Cove oysters..	.16	.20
2 3-lb. cans apricots.....	.40	.60
1-lb. package Boraxine Soap Powder.....	.05	.10
10 bars Sweet Home Family Soap.....	.25	.50
3 lbs. Gloss Starch.....	12½	.25
1-lb. can lye.....	.05	.10
1 lb. assorted chocolates..	.30	.60
2½-lb. can Lemon Cling peaches (fancy) .....	.22	.35
2½-lb. can California pears (fancy).....	.23	.35
1 can pork and beans with tomato sauce.....	.07½	.15
2-lb. can young sweet corn	.09	.15
¼-lb. chocolate.....	.06	.12
1-pint jar Queen olives....	.20	.35
1 package allspice .....	.03	.05
	\$5.00	\$7.97

How We Prove Quality

No one can question our prices being lowest, once they have compared with others.

And to satisfy all as to our quality, we say, use one-quarter of any package. Should you not then be satisfied, send back what's left. We will not only return your money, but will pay all freight-charges, too. The risk in this trial is wholly ours. If we don't please you, it's our loss and you can just forget the matter. If we do please you, then you've found a way to save up to one-half on groceries and many of your other household supplies. That means \$50, \$100 or perhaps \$150 saved yearly.

Can you afford to be losing that much when by mailing the coupon or a postal you will begin to save it?

You Pay the Prices Your Grocer Pays

Your grocer does not buy at retail prices—and neither need you. He buys in big quantities at wholesale prices—and makes a big saving. Buying here you can make the same saving—and you do not (like him) have to buy big quantities of each article to do it, because we sell to you in small quantities that you can use. When you buy from us, you are simply using the same foresight your grocer does—and the profit he makes on the articles he buys at wholesale you save for yourself.

Remember, we manufacture nearly everything we sell, buying (in immense quantities) those articles which we cannot manufacture to best advantage. We know no concern which produces quality-groceries and high-grade household supplies as economically as we.

Then we sell direct—not in the roundabout, factory-to-jobber-to-wholesaler-to-retailer-to-family way. But from factory to family.

These foods are priced at the same prices your grocer would pay his wholesaler for them—some at even less. Hundreds of the other articles are sold to you with only the manufacturer's small profit added.

Get the Cut-Price Book of 200 Grocery and 500 Other Bargains

We can't picture, price and describe these articles here. You must send for our latest Cut-Price Grocery Book. We promise you a combination of high-quality and low prices such as you never before have seen. We claim we can save you \$50 to \$150 per year, and we're willing to prove it entirely at our risk. The coupon below, or a postal, sent today, brings the Cut-Price Book by return mail.

FILL OUT AND MAIL NOW

This Brings the Cut-Price Book by Next Mail!

Larkin Co., Dept. 20, Buffalo, N. Y.
Please send me your Cut-Price Grocery Book that shows how I can save \$50 to \$150 per year.

Name _____

Address _____

(8)

alleged purpose of the purchaser. How can he have any comfort when his beloved forest farm, the child of his care, bone of his bone, heart of his heart, is being massacred? Commercialism indifferently answers that sentiment and business do not go together. To Alec there is no answer. C. O. BEMIES.

Trapping Rats and Mice

MANY people are opposed to using poison to destroy rats and mice. They do not like to handle it or keep it on hand, for there is always an element of danger in that persons may take it by accident, or the rodents carry it into food, or domestic animals or fowls get hold of it. When poisoned, the pests often crawl away into obscure places to die and create an offensive odor.

I use traps entirely. For trapping rats I use the common steel trap of number one size. I select traps that will spring easily, or else I pull the pan down when set so that a light pressure will spring it. When set, twist the spring toward the right hand so that the trap will be level.

Place the trap against a wall where rats inhabit, fastening the staple to a block of wood. Place the block on the outside of the trap and leave just room for the rat to pass through and over the trap.

Now cover the trap completely with wheat-bran, wheat-middlings, flour or corn-meal, and the set is finished.

For mice I set a few of the little traps known as "Catch Quick" or "Quick Catch." They only cost five cents each and are very sure. The mouse is killed by the blow it receives. Mice never hesitate to take the bait from these little traps, but often do in traps having an entrance.

For bait I string two squash or pumpkin seeds on a piece of twine, tie them to the trigger and smear them with a little lard or grease from meat-fryings.

I set the traps in corners and block them with a crock, can, box, or piece of wood, which guides them to the trap. I find the "Quick Catch" mouse-trap more effective in getting rid of mice than keeping cats for the purpose.

J. A. NEWTON.

The Market Outlook

Figure on the Dead Line

NO ONE watching our live-stock markets and seeing the prices being paid for stockers and feeders can help wondering how many of the purchasers have the qualification, the sand and the money to stay by their purchases until such time as there is a profit. There is a great probability that the feeders going out now at seven cents per pound will sell for little or no advance during the winter months. So many are figuring on a short feed.

I am sorry to say so many are only fixed for a short feed. Last year this plan paid where heavy feeders were put in, but it's seldom two years are alike, and it's the height of folly for a feeder to overload his credit and his farm with stock which he must sell ninety days after they are bought simply because they have eaten up his corn crop, and because his banker gets nervous when the market drops. There are thousands of men in this position, and such men have no right to allow themselves to get in such a fix. There is a clearly drawn line between two classes of cattle-feeders. There is first the speculator who figures only on the direct profit, who buys cattle just because his neighbor is feeding a few, who has no definite plan—just takes a gamble that when his corn is eaten up he will ship out and either make or lose.

I am a director in The Live Stock National Bank here, and our business is mainly, directly and indirectly, cattle paper. I want to tell you, brother farmers, the speculative feeder has to put up pretty good security to get any great accommodations from the bank. No sane and safe bank is going to take any great chances with this class of feeders.

The second class of feeders is the legitimate feeders who feed with a definite object in view—that is, to market the produce of the farm on foot—and who rely on the increased fertility of their farm and the increase of crops as their profit. This is the feeder of to-day and of the future. This class of feeder can go to any bank and get what credit he wants after he is known. He just walks in and says, "I want money to buy a load of good calves, yearlings or light cattle. I have feed enough to feed them until June," and he gets it and is looked on by the bank as a good customer, for a safe borrower is just as good to a good bank as a depositor. This class of feeder will prosper after he knows his business. He doesn't sit up like the speculator and figure that if the market goes up two dollars per hundred, he will make so much. His figures are entirely different.

He figures what his crops bring him fed out, and reasons that if he has received full market price for his produce and the manure extra he is all right. Anything above this is velvet. I am now plowing sixty acres of land which has just been covered with manure from last winter's cattle-feeding, and hope to get my profit out of it in next season's crops. A great many farmers forget to figure in their crops on the dead line. The dead line is the actual cost of production, so that if it takes twenty-five bushels of corn per acre to pay rent and expenses, twenty-five bushels is the dead line.

If I can raise forty bushels on my land through manure, and you raise thirty on yours without, you must not figure that I've received just ten bushels more than you. You must figure that I've received three times as much returns as you, for I've received fifteen bushels above the dead line, whereas you received only five.

W. S. A. SMITH, Iowa.

Publicity is Needed

SECRETARY WILSON of the Department of Agriculture says: "I see no hope of beef getting cheaper. There is a supply of meat that people should get accustomed to eating—mutton. On the hoof it is less than half the price of beef." The readiness with which the immense supplies of sheep and lambs coming into the principal markets during the last three months have been absorbed, while prices have been fairly maintained, shows that we are becoming mutton-eaters. But it also shows that, unless farmers wake up and breed more lambs, sheep will next year be as scarce as cattle. The big sheep men are beginning to recognize the fact that, in the changed conditions of the ranges, they will, to hold their own, have to devote a part of their land to farming in order to raise feed for their stock.

There is nothing to report in present market conditions which would lead one to anticipate any lowering of prices next year. Occasionally lambs drop a few cents, or fat sheep are in a little better demand, while feeders and breeding ewes all the time are commanding good prices.

Wool has been a little quiet in Boston and other leading markets, but without any lowering of prices. In the recent auction sales in London there was a material rise in prices, and the market showed great

strength. It is worthy of note that the American demand for British and colonial wools has been greater during the present season than for some years past. Out of nearly six million pounds exported during September, three and a half million came to this country. The wool crop all over the world is estimated to be fifteen per cent. short of that of any of the past three years.

On the whole, sheep prospects are very encouraging, and there appears to be no cloud on the sheep horizon "as big as a man's hand" to make any intelligent farmer pause to consider whether he shall or shall not add a few good breeding ewes to his live stock.

After commenting on the present differences existing between the prices of cattle and hogs and those of sheep, Mr. C. A. Kleman says, in Clay, Robinson & Co.'s *Live Stock Report*:

If the newspapers of this country would give due publicity to the relative low cost of sheep and lamb meats, it would be a panacea for a great deal of complaint from the meat-eaters. There is a woeful lack of knowledge in this country that mutton and lamb meats are as savory as beef and far more wholesome than pork. Properly prepared, they are the most nutritious meats that can be placed on the table.

This is a doctrine which FARM AND FIRESIDE has been constantly preaching during the past two years, and it is a satisfaction to find that, at last, it is being enforced by other leading journals; but to give it the publicity it deserves among the people generally, it is greatly to be desired that the daily papers should take hold of it. People do not know that the ancient woolly flavor which pertained to all mutton forty years ago has been entirely eradicated by modern methods of breeding and feeding. We want an up-to-date Vergil to sing the virtues of mutton and lamb.

As to the policy of investing in sheep just now, here is something to make our farmers "sit up and take notice." At a recent auction and ram letting in England a ram lamb of Mr. A. E. Blackwell's was let for the season for \$1,000; and one of Mr. James Flowers' was sold for \$1,150; and this is the worst season known over there for many years.

JOHN PICKERING ROSS, Illinois.

Economic Feeding


MANY farmers are not yet paying enough attention to having the rations fed to their animals well balanced. Dry cows, idle horses, heavily-producing dairy cows and growing heifers are frequently fed from the same grain-bin. At the present price of grain, it is easily possible to waste a hundred dollars during one winter's feeding, by feeding an unbalanced ration, where a dozen or so of animals are fed. How to properly balance rations for farm animals is a part of the information supplied by the FARM AND FIRESIDE Service Bureau to those who write in for suggestions.

Hogs are High

THE supply of hogs has materially decreased during the past few weeks with the southern markets—Kansas City, St. Louis and Ft. Worth—showing the greatest shortage. For the entire year these markets have been short, Kansas City alone showing a deficit of a half million for the first nine months of 1912. Omaha, Sioux City and Chicago have received the major end of the business, as the supply has come from the territory tributary to these points, but these markets, too, have had but a half-supply recently.

One alarming feature is the large number of pigs now being marketed in Chicago from Iowa and Wisconsin. Scattering outbreaks of cholera have caused many growers to play safe and market their hogs before any loss is sustained. With such a short supply for winter feeding as there now is on hand it seems that these pigs should be fed out, for every pig slaughtered now cuts down the supply for next winter twice his present weight. Many thin sows, also, are sent to the yards; these, too, should be fattened, in view of the present shortage. Because of the number of pigs and thin sows now on the market, the average October quality has not been maintained. The East is getting heavy receipts of trashy stuff, but has to come west for prime hogs, thus strengthening the already strong demand for finished hogs of any weight.

Supplies on the shelves of the middlemen from the large packer to the small retailer have dwindled to almost nothing, thus making the daily market receipts practically the sole supply. This condition creates an active market, but one full of fluctuations. The shortage has become general and there seems to be no outlook for improvement until the winter run makes its appearance, which is prophesied not to appear until after the holidays. In the meantime values will advance and a \$10 market is probable. At present there are not enough swine to go round among the buyers, especially finished hogs. This has worked the prices up till they about equal those of two years ago. They can be expected to remain so until the holidays. L. K. BROWN, South Dakota.



Get a California Farm
Be Independent
in the
San Joaquin Valley

If you could but see the opportunities offered men and women who will work, you would pack up to-day and move to this magnificent valley.

There is no other similar area under the Stars and Stripes where earnest effort will bring such tremendous returns. You go into a finished country, needing only intelligent work to bring fortune—independence to you and yours.

Go now and buy this land. It is settling fast and the prices are steadily advancing. You still can buy small farms of ten, twenty or forty acres, with water, for from \$125 to \$150 an acre. This same land, planted to alfalfa, will sell for from \$200 to \$300. Can you make money faster? But, once established, you won't sell. This alfalfa will bring you \$40 to \$70 an acre if you sell the hay. If you feed it to dairy cattle, hogs and chickens, your returns will be at least \$100 an acre.

Pretty good for such an investment—don't you think?


And fruit—for this is the home of fruit—is making fortunes every year.

Do you realize that of the 37,000,000 bushels of fruit (not counting apples or citrus fruits) raised in the United States every year, California produces 20,000,000?

Go out and investigate. The Santa Fe sells round-trip homeseekers' tickets to California and elsewhere in the Southwest on the first and third Tuesday of each month—only \$65 from Chicago.

Write to-day for our two books, "The San Joaquin Valley" and "What California Means For You"—both free. Just send a postcard to

C. L. Seagraves
General Colonization Agent, A. T. & S. F. Ry.
2407 Railway Exchange, Chicago



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THAT GREAT FRUIT AND TRUCK
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Jacksonville, Fla. Wilmington, N. C.

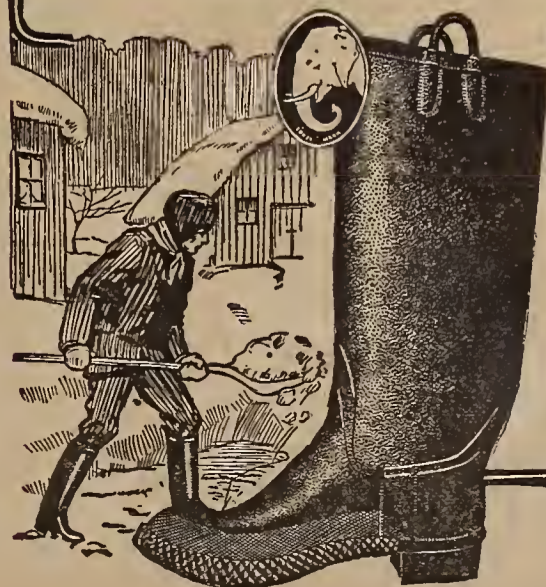
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Sit down now and write for
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Whenever It Snows or Rains

Just get out your rubber boots and laugh at the danger of wet, cold feet and legs. You'll be glad to own boots that keep out the wet on snowbound days—boots that are lined with high-grade wool, fusion or wool net to keep your feet warm. You'll enjoy shoveling through that drift.



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are the greatest boots made for hard usage. Strongest where the wear comes hardest. They are made of tough rubber, and will stand almost any amount of abuse. Boots as good as the "Elephant Head Brand" are long-lived, economical boots to buy—ask your dealer.

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Makers of high-grade
rubber boots and shoes.

Thin Bits of Corn Toasted to A delicate Light Brown— Post Toasties

To be eaten with cream and sugar, or served with canned fruit poured over—either way insures a most delicious dish.

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Battle Creek, Mich.

MONARCH STEEL STUMP PULLER **Get This!**

The Mighty Monarch Steel Stump Puller outwears and outpulls all others. 17 years' experience has proved it! The only stump puller in the world equipped with Genuine "Red Strand" Steel Wire Rope. Send for big catalog. It's worth money to you if you have only a few stumps. Act! (25)

ZIMMERMAN STEEL CO., Dept. FFN, LONE TREE, IA.

Garden and Orchard

Store Potatoes This Winter

WE STORE potatoes by the following plan, and never fail to keep them in prime condition till the next spring:

We first see that the potatoes are thoroughly dry, as mold and rot are apt to follow any dampness stored away with them. Do not dry potatoes in the sun, but spread them out in some building where there is plenty of ventilation.

If possible, we choose a north-side slope for the storage-pit, so the surface earth will freeze early and retain the frost near the stored product till late the following spring, thus keeping them in prime, solid condition; whereas, if the pit were on a south-side slope, the ground would not freeze so early in the season, and it would be the first to thaw out in the spring and cause the potatoes to soften and greatly deteriorate in quality.

We dig the potato-pit about eighteen inches deep and three feet wide (any length desired), allowing it to stand open for a few days when convenient, so that the dampness of the earth may evaporate. The sides, ends and bottom of the pit are lined with dry weeds, leaves, common newspapers or building-paper. By using any of these articles, we save the valuable hay or straw used by many farmers. The protection is just as good. If only a few potatoes are being stored, the circular pit may be used.

When the potatoes are thoroughly dry, we remove them to the pit, sorting out and rejecting all that are partly rotten or that show signs of decay. If these were buried with the first-class potatoes, they would contaminate them. We never toss potatoes about in handling them, nor allow them to drop from one vessel into another. Care in handling prevents peeling and bruising.

The pit is filled to a level with the ground; then the potatoes are placed in the center till the heap is cone-shaped—topped out like a haystack. This gives a sloping surface on which to place the covering, so that dampness will be shed. The same sort of covering may be used as the lining of the pit. We have even used refuse corn-stalks and second-grade fodder for the first covering. We also have used cheap roofing, and this is especially good for keeping the fine dirt from sifting through into the potatoes. On top of this covering we shovel dirt, packing

it down well. This layer of dirt is only about four inches deep, and is left open till the first sharp freeze (in case of rain, old boards, roofing or oil-cloth are placed over the pit, so that no moisture will be admitted).

As soon as this first layer of dirt is frozen, we cover it at once with about a foot thickness of old hay, straw, manure and barn-yard litter, tossing on several inches more earth to hold the mass down. This confines the cold, frozen layer of dirt near the potatoes and keeps them cool throughout the entire winter period, nor will this layer thaw out till well up in the spring season. This final layer of dirt should be packed down firmly with the back of the spade or shovel, so it will form a good water-shed in case of late fall rains. It is also well to dig a shallow trench around and leading away from the storage-pit, to avoid any moisture settling and entering it.

We examine the pit carefully about the time real winter weather sets in, to see that no mice or moles have invaded it, and that no mold or rot is present. M. COVERDELL.

Some Orchard Pests

DURING the comparative leisure of winter it is well worth while to look over the young fruit-trees for any insect pests upon them. Apple twigs are especially likely to hold many egg-masses of the American tent-caterpillar. These have a characteristic ring-like appearance, and the eggs are covered with a glistening brownish varnish that shines in the sun and is readily seen on a bright day. Each egg-mass contains some hundreds of eggs that will hatch in spring into the leaf-eating caterpillars that make the family tent-like nests in the forks of the branches. Cut off the twig and burn the eggs. Do not simply throw upon the ground where, perhaps, the caterpillars will be able to reach some food-plant.

The eggs of the tussock-moths are even more conspicuous upon the trees and should be removed. They are in whitish masses upon bark or branches, each mass containing two or three hundred eggs. In spring these eggs hatch into little hairy caterpillars that wander over the tree and feed upon the leaves, often doing much damage. The destruction of the eggs will, of course, prevent this.

Too many people discover the presence of the San José scale only after it has killed valuable trees. This pest is present in most parts of America, and if you have not found it, very likely it is because you have not looked for it. Examine the bark of pear, peach, plum and apple trees, especially those recently set out. If there seems to be a grayish crust on top of the outer bark, a crust that scrapes off easily with a knife, you have found the San José scale. Prune the infested trees severely, then spray with the lime-sulphur or some of the oil preparations. For a few trees the proprietary insecticides advertised in the agricultural papers are less bother than to make your own mixtures, and to one without experience they are probably safer to use.

In many parts of New York State, as well as in other fruit-growing regions, the pear-psylla is a vexing pest. It passes the winter as an adult, hiding under rough bark or in crevices in the bark. By scraping off the loose bark in winter and spraying the dormant trees with whale-oil soap or a nicotine solution, most of these hibernating psyllas will be killed.

In the spring the psyllas that survive the winter crawl to the branches and lay their eggs upon the twigs. These eggs are killed by the lime-sulphur spray, so if this is applied for the San José scale injury the psyllas will also be prevented.

Hundreds of thousands of apple-trees have been set out the last few years that will be destroyed by borers because of ignorance or inattention on the part of the owners. Young trees around which grain, grass or weeds have grown up are very likely to be infested. The eggs are laid in summer. The borers hatch soon after and burrow little channels under the bark at or just beneath or a little above the surface of the ground. Where they thus burrow, the bark is generally discolored and looks dead and blackish. The young borers hatched last summer are still small and have done little damage. They are now near the surface and can readily be dug out with the point of a knife and destroyed without appreciable damage to the tree. Do this on a pleasant

day, when the ground is bare, and save the trees. Practically all of the borers will be found at the base of the tree near the surface of the soil.

You will probably find some trees infested by borers that hatched in a warmer summer. The presence of these is shown by larger holes with sawdust-like castings beneath. Dig the entrance out a little, then insert a pliable wire, and push it to the end of the hole. Then the grub will cease from troubling.

In some sections meadow-mice are very thick this fall. They will do great damage, which will show in trees stripped of their bark next spring. If young fruit-trees have not been protected with wire netting or strips of wood veneer, it will be well worth while to tramp down the snow about the trunk of each tree after every heavy snowfall. This makes it hard for the mice to work through the snow and generally saves the tree from damage.

Be wise also in not shooting, nor encouraging your neighbors to shoot, the hawks and owls which save us from being overrun by plagues of mice.

These birds of prey are the chief natural enemies of the mice and live upon them largely in winter as well as in summer.

CLARENCE M. WEED.

You will be the farmer your highest ambitions lead you to be.

The best evidence of your goodness of heart is the way your horses and cattle greet you in the morning when first you swing the big barn-door open.

Wintering the Bees

IN THE late fall, when the farmer has completed most of the season's work and is spending much of his time with the lesser duties about the farm, the bees should come in for their share of attention. In the illustration and accompanying words of explanation a plan is shown whereby any farmer may winter his bees cheaply and successfully.

A position should be chosen in the space allotted for the hives during the summer, where the land is higher than the rest. Good drainage is then assured. Place under the hives pieces of timber thick enough to raise the hives several inches from the ground. Set them a few feet apart on the ground.

Over these timbers, which should be of about equal size, nail boards from your lumber-pile, as shown in the sketch. On these boards the hives should be placed, side by side, with the entrances all facing in one direction, preferably toward the south or southeast. The bottom boards on the hives will leave small air-spaces underneath. For hives with flat bottom-boards shingles placed at the four corners will raise the hives a fraction of an inch, enough to guarantee circulation of air.

When the hives are placed on this platform, see that the backs are flush with the platform and as near together as possible. This economizes the space and aids in keeping an even temperature. Don't fill the spaces between the hives, but leave them open as dead air-spaces. Supers filled with chaff or any suitable material may be placed on the hives, to add to the warmth.

Two things are vitally necessary in keeping bees alive during the winter: fresh air and dryness. By giving the air access to all parts of the outside of the hives and insuring proper drainage, dryness is certain to follow. Some do not believe in giving bees much protection during the cold months, but in the State of Illinois and in States of a similar winter temperature and with quick weather changes protection is advisable.

For those who cannot afford cellar wintering, the hives, after being placed in the position described above, may be covered with two-ply tar roofing-paper, tacking the paper to the front of the hives just above the entrance. Bring it back over the hives, and tack it to the platform behind them. Empty hives placed at each end of the row, to which is tacked the folded ends of the paper, are desirable.

The entrances of the hives should be closed down to small openings with blocks



of wood or other suitable material. This prevents the entrance of mice, which are often a pest to bee-keepers. Big entrances tend to numb the bees, besides giving access to mice and other rodents. The air-spaces will aid in keeping everything dry.

Care should be taken not to close the entrances too much. Lack of ventilation soon smothers colonies. It is well to visit the colonies after a heavy snowfall. The warm air coming from the hives at times melts the snow, which, freezing again, closes the entrance and smothers the colony. When the weather is cold, care should be taken to shake the bees as little as possible. Those shaken away from the cluster often become too benumbed to crawl back.

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Egg-masses of the tent-caterpillar



Tussock-moth eggs



The FARMERS' LOBBY.

BEATING the President of the United States to it may or may not be a performance justifying the observation that we told you so. That depends on whether the President is of your faction and party and general frame of mind, with reference to the general subject as to which he shows in a subsidiary place in the running. Presidents are not presumed to be very quick on the trigger with recommendations. It's part of their business to know somewhat specifically what they are talking about before they promulgate programs and policies.

Wherefore FARM AND FIRESIDE may perchance be excused if it pats itself on the back in connection with Mr. Taft's recent communication to the governors of the States, bespeaking their coöperation in the matter of introducing in this country a system of rural credit banking based on the German plan and its variations in other countries of Europe. The President has been accused of playing politics in putting out his project in the midst of a campaign. They say it's a bid for the support of the farmers, etc. All right; let it go at that for the sake of the argument. If politics moves a President to start a good thing, bully for politics. Politics starts a lot more good things than bad ones. Politics is largely the art of giving the public what it wants. That's exactly what honest politics is; the other kind is the gentle process of giving the public what it doesn't want without making it mad, or giving it nothing and making it think it got something. It may be true that there has been too much of these latter sorts of politics lately; but that constitutes no reason why politics isn't entitled to credit for the good things it pushes across.

Politics, for instance, started the investigation of campaign funds that is just coming toward its close as this letter is written. That's another question; but it furnishes an illustration of the point about politics doing some good things for the country. In the beginning, it was just cheap, bunk, ward politics that caused Boies Penrose to want campaign-fund contributions investigated. It was more politics that made La Follette want to spread out the investigation to include a lot of things that Penrose's sort of politics didn't require. But what of it? Between them they started an investigation that is going to do a vast amount of good.

It's part of the President's business all of the time to know somewhat specifically what he is talking about

Have you been reading the testimony it has brought out? If you have, you have doubtless accumulated some of the same sentiment of acute disgust that has imposed itself on people who have had to study the investigation at close range—of whom I have been one. I have heard a large part of the testimony actually given before the committee, and after hearing it I want to register a little prediction.

There will never be another national campaign in which the sort of political finance that has been common in the past will be operated. No little group of men, however patriotic they may think their motives, will be permitted again to get together and decide whom they will support, and then chip in the coin that will induce the rest of the people, or any large segment of them, to endorse the view of the few patriots. I don't pretend to suggest how we'll get candidates nominated for us, if we don't let somebody with a moneyed interest steer us along; but I do undertake to guess, here and now, that we're going to have a new deal. Likewise, there's going to be a change in the method of running the post-nomination campaign. There will be some new laws on the subject, and there will be, still more important, a pressure of public opinion that will make it impossible for a few men to pool their fat checks and buy a place in a presidential convention for somebody who couldn't muster a delegate if it were not for the financial support thus secretly or semi-secretly brought to bear. Changes must come soon.

Nobody is good enough to be trusted implicitly with all the power that accrues to the willing giver of campaign funds. Mr. Thomas F. Ryan may be a mighty nice man and a real patriot. He may have fifty or seventy-five millions of dollars and a burning ambition to spend it in giving the country the right sort of President. But when he contributes \$77,000 to the campaign fund to nominate Governor Harmon,

Getting Funds for Campaigns and Farmers

By Judson C. Welliver

and another \$35,000 to the Underwood fund, why, it's more strain on patriotism than any one man is entitled to bear. Mr. Ryan probably thinks, in all sincerity, that his motive in this matter is just as good as that of Charles R. Crane, who gave a big slice from an affluent bank balance for the promotion of Mr. La Follette's ambition for the Republican nomination, and another handsome donation to the support of Governor Wilson for the Democratic nomination. Mr. Crane told the committee that he was trying to get a progressive nominated in some old party, and he looked perfectly sincere when he added that picking one winner out of two bets looked pretty good to him. The fact still remains that if Mr. Crane was doing right his doing of it lost some of its effectiveness by reason of the impression among some people that Mr. Ryan was not doing what he did from equally unselfish motives. If Crane was right, it still wasn't fair to impose on him all that financial expense. If Ryan was wrong, it was bad business to let him have the power to do it with both hands. Mr. Flinn of Pittsburgh testified to giving almost \$150,000 to wrest Pennsylvania from the hands of the Penrose machine, and Mr. Hanna modestly told the inquisitors that he had invested \$177,000 in the season's political activities. Mr. McCormick of the Harvester Trust gave a fat check to help nominate Wilson, and Mr. Perkins, likewise of the Harvester Trust, was even more liberal in support of the Roosevelt fight. Supposing that they did it with the best of purpose, the fact remains that their weight in the matter was bigger because they tossed their money in the balance along with their judgment; and that is fundamentally wrong. It's all wrong to insist that a reformer must be a millionaire before he can become a useful reformer, and it's all wrong to let a malefactor be a more powerful malefactor in proportion as he is willing to give down. The system is wrong. It's going to be made over, and this inquest is going to build a powerful lot of sentiment in favor of making it over.

Which is about all for that little prediction. Now to get back to President Taft—and that recalls the fact that one brother of the President testified to contributing over half a million dollars to the President's politics, getting about a third of it refunded after election. I don't believe that the reorganized system will give any more kindly consideration to the notion of financing campaigns inside the family than to that of having them financed from the outside, in such preposterous amounts. Having got around the circle and handed something to all of these patriots or malefactors—classify 'em to suit yourself,—now for another effort to discuss that agricultural credit system business.

A few months ago the Lobby discussed the European systems of cooperative rural credit and banking, and ventured to opine that they would be good for adaptation and development in this country. It was suggested that the industries of the country were more easily financed, and at lower rates of interest, than the agriculture; that railroads were able to get cheaper money than the farmer, etc. Out of all this was deduced what seemed a fair conclusion: that if we would make it easier to finance the farm, we would make the farmer more prosperous, more independent and better able to help reduce the cost of living. Everybody would get his bit.

When that mild suggestion was floated forth to a waiting constituency, some editor

in Minneapolis fell on it with exceeding savagery and declared that the farmer didn't need to have anything done for him, that he's getting his money as cheap as he needs, that the American system of state and national banks fixes him all right and that there's no need excursions abroad after ideas in improving our situation.

The Lobby felt duly reproved, if not at all convinced. Comes now the President, the diplomatic officers of the Government in Europe and a strong section of our banking community, with a specific endorsement of the Lobby. They have been making a special study of these rural credit systems of the old world, and they say that we could greatly help our farmers and consumers alike, by going in for some of this European method. President Taft has addressed a letter to the governors of all the States, asking them to consider the whole subject at their coming conference in this city in December. He wants the States to undertake legislation on the subject, with the view to providing for the chartering of such institutions; and further, he proposes to link together a set of these primary credit societies, organized under state laws, with a new sort of national banks; the two systems, by coöperation, to cover the field and find a national and international market for the securities dealt in.

The President gives us some striking figures on the possible field of usefulness for such a system, in giving the farmers cheaper money. He tells us that the twelve millions of American farmers are standing borrowers of \$6,040,000,000 of capital. Counting commissions and renewal charges, he finds that the American farmers are paying an average of eight and one-half per cent., compared with three and one half to four and one half paid by the farmers of Germany and France.

There's the place to stick the first pin and think over what it would mean if our farmers got money as cheaply as these European farmers. Six billion dollars of working capital borrowed by farmers. Cut the interest in half, and it is equivalent to halving the cost of this whole item in agricultural production. That is, it would in effect be just as helpful to the farmers as if you could wipe out half their borrowings entirely! Looking at it in that way, it isn't difficult to believe that farmers would be quite a bit more prosperous. Suppose some forty-horsepower Rockefeller should just hand out three billion dollars to the farmers, to be used in paying off half their debts! That would help some. Well, it wouldn't help a bit more than to cut in half the interest rate the farmer must pay on what he borrows!

How much it is possible to reduce the interest rate that the farmer must pay, the President doesn't venture to conjecture. But he does suggest that the farmer pays a much higher rate of interest on what he borrows than the railroads, the industrial corporations, or the municipalities. He certainly does. American capital is plenty enough to compete in the open markets of the world for big shares in great loans, industrial undertakings, etc., all over the world. Why should it seek investments in three and four per cent. securities abroad, while the average rate on farm business at home is, according to the President, over eight per cent.?

Manifestly, the answer is that either our agricultural credits are not so handled as to make them as safe as they are in Europe, or else we have not developed the proper banking facilities to bring our capital and our borrowers together. A plain fact!

Nobody is good enough to be trusted implicitly with all the power that accrues to the willing giver of campaign funds. Mr. Thomas F. Ryan may be a mighty nice man and a real patriot. He may have fifty or seventy-five millions of dollars and a burning ambition to spend it in giving the country the right sort of a President. But when he contributes \$77,000 to the campaign fund to nominate Governor Harmon, and another \$35,000 to the Underwood fund, why, it's more strain on patriotism than any one man is entitled to bear, sincere as he may be in the work

When we provide the best methods that the world knows for financing our agricultural community, we will have taken a long step toward reducing the cost of living. Europe, as President Taft points out, was long ago confronted with the problem of the advancing cost of living. We have it with us now, and getting more acute all the time. The answer is to make the soil do more for us. Is it not true that we are getting away from the soil too far?

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The German system of Raiffeisen banks has accomplished both these ends. It has aggregated agricultural credits and securities together in such manner as to make them appeal to the most conservative loaner; and at the same time it has brought that conservative loaner and the farmer together.

There is nowhere in the world where, on the whole, agricultural credit is so good as here, nowhere that agricultural prosperity is so great. Yet I know, from friends who do a thriving business at it, that there are great areas and big populations in the agricultural States where development is retarded because it isn't possible to get money enough even at ten and twelve per cent. The facts are against our sapient Minneapolis editorial friend. President Taft has found that they are. Myron T. Herrick, now ambassador to France and for many years head of one of the greatest savings banks in the land, has found it out and has become an enthusiastic convert to the European system. The bankers of this country are making the discovery, not only that this system would be good for the farmers, but also that it would be good for them. The last convention of the American Bankers' Association took up the subject and is now joining with other agencies that are working for the introduction of this plan of banking, as a supplement to our present methods.

This system has wrought a revolution in the economic and financial status of the small farmers in many European states. It would do vastly more in this country, simply because the farmer here is already better off than there. We need to provide the best methods that the world knows for financing our agricultural community.

The cost of living. Europe, as President Taft points out, was long ago confronted with the problem of advancing cost of living. We have it with us now, and getting more acute all the time. The answer is to make the soil do more for us. We are getting away from the soil too far.

Not long ago a president of a great American railroad system, talking about this very problem, walked over to a map that hung on his wall. "Let me tell you how far we are getting away from the soil," he said. He swept his hand in a gesture over the northeast section of this country, indicating the whole of New England and New York. "There," he said, "is the biggest popula-

There will never be another national campaign in which this common sort of political finance will be operated

tion in all the world that has so small a proportion of its number actually living on and by the soil!"

I was astonished. He had the figures, which I don't remember; I sort of hoped they might not be true and didn't want to be cumbered up with them. He had comparisons, carefully worked out, with Britain, France, China, Japan—all the countries that could possibly get entered in that sort of competition,—and I guess he wasn't wrong. Think of it! A lower proportion of farm-supported people than any other equal number of people, living in a contiguous community, in the world!

That's what's the matter with us, in this matter of living costs. We have the land, the people and the capital. The difficulty is to get the land, the man and the capital together in one place.

The President thinks there is great need of uniformity of state laws on the subject. Even that is probably less necessary than at first appears. At any rate, uniformity of state laws is an ideal that we converse about much more than we accomplish. The present business is to get the governors, the legislatures and Congress studying the subject.

This is one enterprise in which the farmer and his city and town customers have absolutely no chance for difference of interest. When reciprocity was proposed, the farmers studied the particular measure that was proposed, and decided that they were being asked to pay for some concessions that would chiefly benefit the townfolk. Without going into the merits of that discussion here, it may be said that there isn't a chance for such a diversity of interest. The farmer wants more money and at cheaper rates. If he gets it, the benefits of cheaper production will accrue to him and the townsman alike. Everybody will be helped; therefore, everybody ought to support the movement that the President has started.

The Story of John Kennedy, Farmer

By Pearle White McCowan

Illustrated by Herbert Pullinger



THEY told me to go and tell her. I, his neighbor, who had been there that morning. I, who had heard.

It was just that I should go. No stranger should impart such a message. And yet I'd a thousand times rather have fled than have faced her.

In the mile and a half that I had to walk, a good many things buzzed through my brain, dulled though it was with the sudden horror of the thing.

I heard her again, as I had that morning, when I'd slipped over to borrow an ax. (I had broken the handle of mine.)

The back door stood open, the stove had been smoking a bit, I think, and the sound of her voice came out clear and sharp and cold, like sleet crystals that sting as they strike. For a moment I doubted my senses. I had known her from early childhood, and she had always been so gentle and kindly. But there was no mistaking that voice, high-pitched and biting though it now was. And she was saying:

"John Kennedy, my father was none too good to work in the woods when he needed money—nor my brothers—but you—" "Why, Nettie," he broke in, sort of hurt and reproving like. But she ignored him and went right on, "you—you—are either afraid—or lazy."

And with that John slammed the door and came out, but not before he'd flung back over his shoulder, in tones that matched her own, "Well, I'm going to the woods. Now! Do you hear?"

I asked pleasantly as I could for the ax, but he didn't seem rightly to sense what I said, just nodded curtly and strode on, his lips shut tight together and his eyes snapping like some wounded animal's.

As I went back past the window, I caught a glimpse of her face. Her lips were closed tight too, and an unnatural brightness burned in her eyes. Somehow her look smote me. It brought to mind visions of Cindy. Visions seldom, almost never, recalled. I prefer to remember the pleasanter ones, when she was near and dearly, tenderly thoughtful—but Cindy was unreasonable sometimes that last winter, those last few months just before she was called up higher, leaving me alone, with only a tiny week-old babe to fill the aching hungriness of my arms. But she was not her own cheery self that winter. I understand it now better than I did then, I guess, and I'm mighty glad to remember that I was always tender with her.

But somehow, as I strode back home with the borrowed ax, I was vaguely troubled for John. He was a farmer, bred and born. Only eighteen months before he had come into this northern country, young, flushed with visions of the future, and bought eighty acres of "cut-over" land from a lumber company, put up his little shack and begun his clearing.

Small wonder that, good looking and well dressed as he was, he made a hit with the girls of our section. A white shirt and a linen collar (our boys mostly wear celluloid), a good suit of clothes and a spruce horse and buggy, go a good ways with the petticoat portion of our inhabitants. But John was clean and straightforward and manly, and I, for one, was glad when he chose the best of the lot and settled down to housekeeping.

Now, his eighty meant more than just speculation. I know, for he told me so, though he didn't talk much, as a rule, about his own affairs. But 'twas one of those days when "she" hadn't been there long, when he was still flushed with the wonder and joy of love, that he said to me, solemn like, "Jim, I aim to make this the best farm home in the county."

But I'm running away from my story. John wasn't a lumberman, and I knew it. He had no business working in the woods, unless it might be at sawing or teaming or making roads, but his team wasn't big enough for that work—it takes mighty heavy horses to haul logs in the lumber woods—and I happened to know that the sawing was all done and the road-monkey likely to stick.

Somehow I sensed that Nettie was more than half right when she said that John was afraid. He sure was kind of skittish when it came to fooling with logs. Born and bred in the lumber country, as she and I had been, it was difficult to understand how any man could fail to know how to handle logs.

But I knew by the set look in his eyes as he went toward the woods that morning that he'd do whatever they set him to doing. So I wasn't surprised when I happened along about two o'clock that afternoon—I had a little business with the boss (just giving him quietly to understand, you know, that if he hauled those logs on the west forty down across my place I'd expect a good fair bonus for his right of way)—so I wasn't a mite surprised when I saw John Kennedy decking logs.

I stood and watched for a minute—long's I wanted

to. His awkward movements somehow made me feel kind of squeamish, though they didn't seem to have any such effect on the other decker. His ire was up, and he was "saying things," and somehow I felt kind of sorry for John. It's not pleasant to be the butt of another man's sarcasm and anger, just because of something you've never rightly learned to do. I know, because I tried bookkeeping once in my uncle's office. At the end of a week I cut and ran, and since then I've been content to stick to the work for which I'm fitted.

I'd been talking to the boss, kind of forceful like—he needed convincing—for about an hour, when we heard a shout. Now, the lumber woods are usually full of shouts and yells, but this was different somehow, and we both took to our heels and ran. And when we came up, there was John, unconscious, the blood running from an ugly gash in his head, one arm hanging limp, as his companions tried to lift him and bend back the limb that was doubled under him. We hastily took a hand, and when we had gently straightened 'it we

"Good-afternoon," she said, sort of chipper like, her own cheery self uppermost once more. "Seems to me you're back from town pretty early. Oh, didn't you go to town? I saw you go by, and I thought—"

And then my face must have betrayed me, for suddenly a tremor seemed to pass through her, and she turned a sickly grayish white. "What is it?" she gasped. "Has anything happened? Is—is it John?" And then I went in and laid my hands on her shoulders and told her—I don't know what—but in the end she braced up and began to make preparations for his coming. And I soothed her and encouraged her to be brave for his sake and her own, and for the sake of the child that was coming.

And then they brought him in, and she cooed over him and caressed him, as only a loving, heartbroken woman can do, till he opened his eyes and knew her, and smiled encouragingly up into her face. Then they led her away, and I sat in the kitchen with her while the doctors worked over him, and when he moaned and groaned I held her hands and comforted her, just as her own father would have done had he been there.

For three black, awful hours we sat there. She, silent and staring with eyes that held no suspicion of tears, though the misery in them was almost more than I could bear.

If ever I longed for the aid of a woman, 'twas that night. A woman would have known so much better how to comfort her. But neighbors are not close in the lumber-woods country, and news does not always fly fast where there are no telephones, so no woman came, and it was left for me to do the best that I knew. And little enough that was, Lord knows. But perhaps it was better so, though at the time I thought it was hard, hard for us both, for a man, however tender and sorrowing, is clumsy and awkward when it comes to comforting a woman, especially a woman so sorely tried as Nettie was that night. I've seen plenty of folks in trouble in my life, but I never saw torture and anguish more acute mirrored in any human being's eyes before nor since. Yet she made no outcry, only sat there still and unseeing. Silently moaning, she flung out her cold hands now and then for me to grip when his groans came out to us too plain. Once her lips moved. "It is a judgment" were the words that seemed to be wrung from her. But she did not know she had spoken, only clasped her hands the tighter together and shuddered.

It was only when they finally brought her word that he would live that the tears streamed down her cheeks. "I—I couldn't have borne it," she sobbed, clinging tremblingly to my hands, "I couldn't have borne it, if—if he had gone,—for—I drove him—to the woods." And I understood, for I had heard, though I don't think she knew it.

And then she dried her eyes, and they led her in to him, and she laid her head for a moment beside his on the pillow, and held his hand in hers, and sat by him till the morning, and was comforted.

His mother came next day. Beats all how a mother can chirk one up. And John surprised us all by getting along right fine. He was young, and his bones knit readily, and, besides his mother, he had love and Nettie, and after a few weeks, the baby.

And Nettie has never forgotten her lesson. I can tell by the glad light that looms up in her eyes sometimes and the tender way she hangs around and waits on him. "She's just a-spoiling of you, John," I tell him. But he only laughs and says, "It's mighty pleasant, being spoilt, anyway." Beats all what a jolt it takes to wake us humans up to our blessings!

A Little Sermon

THE borers got into Amzi's currants not long ago, and for a while, observing the mischief they did, he was pretty wroth. But he has discovered something. "I've been watching one of those borers," he relates, "and he's as good as a circus. He dug his tunnel through the pith of the cane, and when he had gone as far as he cared to what does he do but turn short off and cut a hole through the rind. Of course I thought he was coming out, but no, as soon as he had the hole cut he plastered it up tight with the shavings and sawdust he had made, with himself inside. I kept close watch, and after a spell the hole was opened and out came a fly—the borer in an advanced stage of development. You see, he had cut that hole while he was a borer and had the tools, looking ahead to the time when he should be a fly with none of the appliances for such work.

"Somehow I feel better about the damage to my currants, after seeing what a wonderful fellow the borer is. It sort of reminds me that there are more things in the world than man and his selfish interests. If sermons in stones, why not in borers?"

RAMSEY BENSON.



" . . . Held his hand in hers, and sat by him till the morning, and was comforted"

knew that it was broken, also. But he lived—and moaned feebly. And my first thought was one of thankfulness that the log, in its deadly slewing, had only struck him down, instead of pinning him under, as it might have done.

We bound up his head, made him as comfortable as we could, sent a man post-haste for the doctor, and another for the sleigh. The first thing was to get him home.

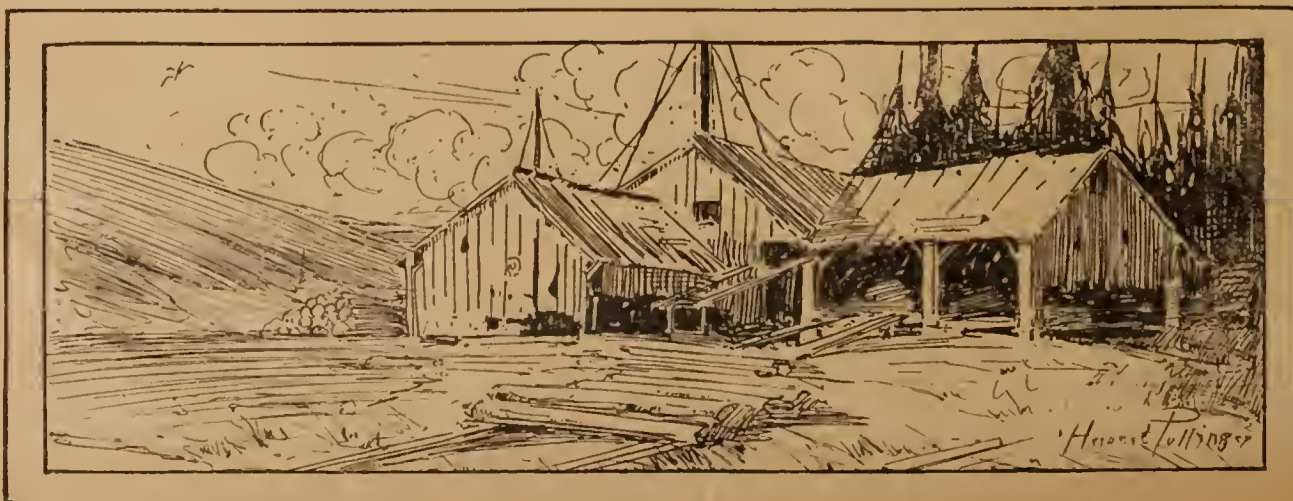
Then they turned to me. "You go ahead and tell her." And I went.

But all through that walk of a mile and a half, with the pity of it still fresh upon me, I seemed to hear her words of the morning. "You are either afraid—or lazy." And I would have given all that I possessed to have taken them back for her. That childish rhyme

Boys flying kites can haul in their white-winged birds,
But 'tis not so when you're flying words

kept singing itself over and over in my brain.

Just off the porch I paused a moment and nerved myself for the ordeal. Then I stepped up boldly, though trembling in every limb, and knocked, and Nettie came to the door. I was hoping to see someone else.

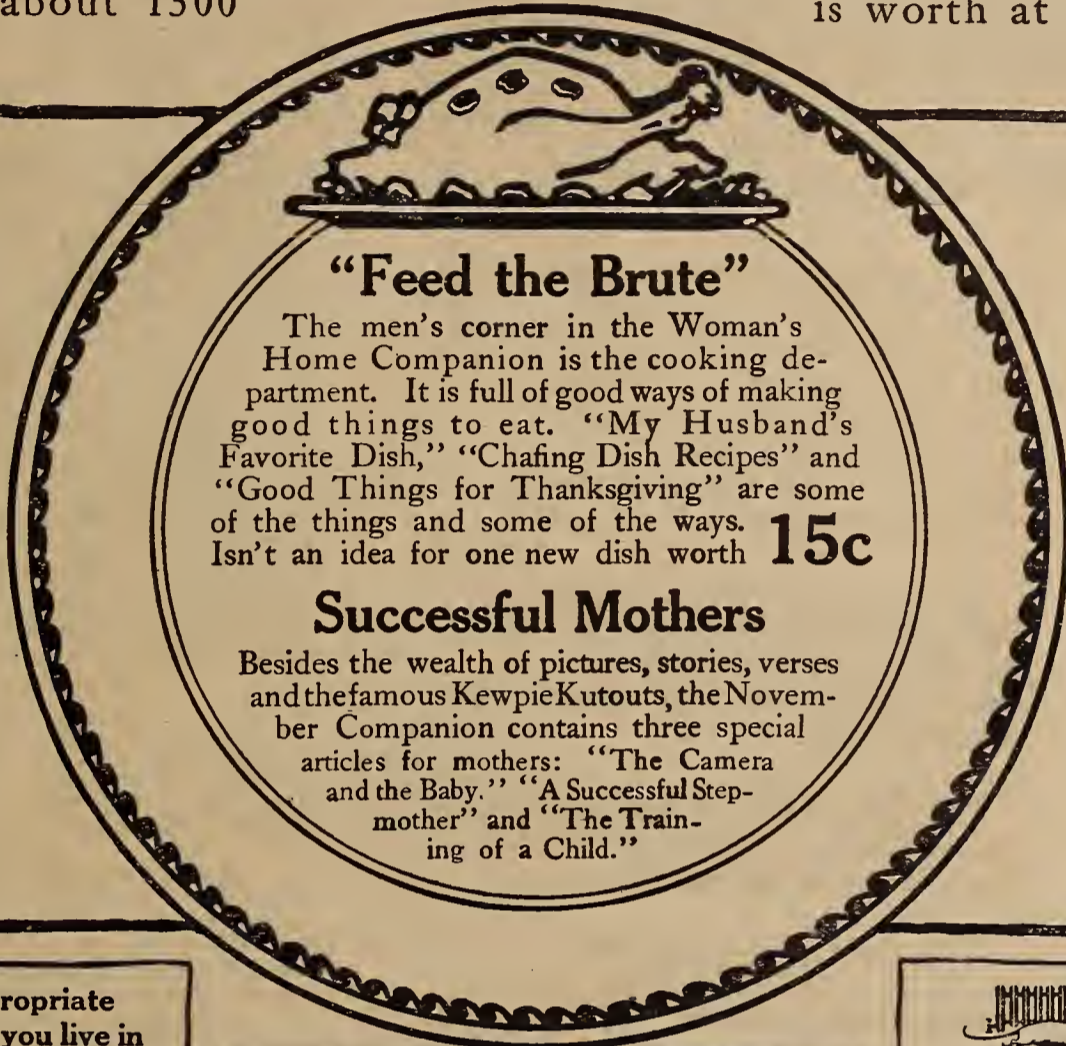


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The men's corner in the Woman's Home Companion is the cooking department. It is full of good ways of making good things to eat. "My Husband's Favorite Dish," "Chafing Dish Recipes" and "Good Things for Thanksgiving" are some of the things and some of the ways. Isn't an idea for one new dish worth **15c**

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Besides the wealth of pictures, stories, verses and the famous Kewpie Kutouts, the November Companion contains three special articles for mothers: "The Camera and the Baby," "A Successful Stepmother" and "The Training of a Child."

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Uncle Sam's Housekeeping —and yours

When Woodrow Wilson, once president of Princeton, now governor of New Jersey, possibly next president of the United States, talks about national housekeeping, he talks about what he knows. "Housekeeping" and "economy" mean exactly the same thing whether applied to your home or a nation of homes. This ringing message should be read by every American woman.



Town mouse or country mouse

Everyone who lives in a large city will be interested in the "Girl in the Small Town." The girl in the small town will be interested in "Beth in Boston." The truth is the size of your town doesn't matter. Be sure to read both articles. The help they will give you is worth more than **15c**

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Shop early in the pages of the Woman's Home Companion. Here are over one hundred Christmas presents you can make, pleasant work for spare moments, the instructions written by those who know how. Every idea worth more than **15c**



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You ought at least to know what the great books are, even if you do not read them. Then you can turn to "November Books" and find out what are the newest books. Merely to know what the world is reading is worth at least **15c**



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When real story tellers like Kathleen Norris or Justus Miles Forman write, lovers of good stories prick up their ears. One good story that makes you think and feel, gives a new point of view, or simply entertains to the point of forgetting all outside matters, one such story is worth more than the price of a magazine. Here are seven for **15c**

This story is true

Behind the title "Nellie Grant, Nurse Girl," is the experience of a real girl who became a nurse and worked in many homes to learn what the average American home is like, and how the housewife in that home solves, or fails to solve, her housekeeping problems. It is told in story form, but it is a true record; it is not founded on fact—it is *fact*.

Kewpie Kutouts

The Kewpie Cook and Mother Darling are the doll cutouts in color in this number. The only Kutouts with both front and back. The Kewpie Kutouts alone are worth **15c**



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A Proverb of Bell Service

Once upon a time there dwelt on the banks of the holy river Ganges a great sage, by name Vishnu-sarman.

When King Sudarsana appealed to the wise men to instruct his wayward sons, Vishnu-sarman undertook the task, teaching the princes by means of fables and proverbs.

Among his philosophical sayings was this:

"To one whose foot is covered with a shoe, the earth appears all carpeted with leather."

This parable of sixteen hundred years ago, which applied to walking, applies today to talking. It explains the necessity of one telephone system.

For one man to bring seven million persons together so that he could talk with whom he chose would be almost as difficult as to carpet the whole earth with leather. He would be hampered by the multitude. There would not be elbow room for anybody.

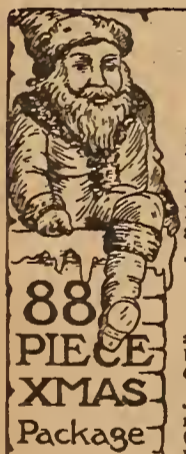
For one man to visit and talk with a comparatively small number of distant persons would be a tedious, discouraging and almost impossible task.

But with the Bell System providing Universal Service the old proverb may be changed to read:

To one who has a Bell Telephone at his lips, the whole nation is within speaking distance.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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Every Bell Telephone is the Center of the System.



SANTA'S GIFT TO YOU

Nearly everyone nowadays wraps attractively their Xmas gifts before sending, using fancy seals, name cards, and address labels for decorations. It is a pretty custom and adds greatly to the Xmas sentiment, but if purchased in a store these decorations are expensive. Here is an exceptional opportunity, however, to secure

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Household Department

An Ideal Living-Room

By Laura E. Lighton

WHEN we decided to build our farm home, the whole family was agreed upon one point from the beginning: One room in the house should be abundantly large, sunny, cheery, home-like—a real living-room. It was not to be one of the modernized affairs, a show-place, but a thing of the solid, old-fashioned sort. Beauty was not to be sacrificed, but comfort was to be made the key-note.

So we have built our living-room. It is the very heart of the house, a room twenty feet wide by thirty feet long, facing to the south, with other rooms opening out of it to the east and west. The southern wall has most of its thirty feet of length in glass—a wide glass door and two groups of three old-fashioned casement windows, giving to the room a flood of sunshine, and opening to us, from every part of the room, a wonderful outlook upon the beautiful White River Valley, with the piled masses of the Boston Mountains in the distance.

The huge fireplace, on the west side of the room, is our greatest delight. It is built of rough stone picked up from our fields and hills. When the mason was at work on the foundations, I was planning for the fireplace, and every day I carried in a few stones which showed good coloring, and these I made into a big pile for the mason's use. The fireplace measures seven and one-half feet in breadth, the opening four and one-half feet, so that it will take wood in full cord lengths, and deep enough to hold logs so large that it needs a strong man to lift them. I walked over the farm for most of one day, tape-line in hand, before I found a stone that was just right for the lintel. No, I didn't carry that one; it took three men with picks and chisels to dig it out and get it on the wagon. The finished work shows absolutely nothing in the way of decorative effects—nothing but the massive rough stone, put up to last until the days

of our great-grandchildren. On one side, in a snug corner, the goodman of the house has his desk; on the other side is my sewing-table, with a bit of work always "handy."

The room is just right for anything we want to do in it. Sometimes a dozen or more young folks come in of an evening, take up the rugs and dance; and if some "old folks" happen to be here too, we join in and have a good, rollicking round of "tucker" or "Virginia reel."

Really, this living-room idea, in its true sense, is not at all different from that of the old New England farm kitchen of the years gone by, furnished as it was with the severest simplicity and greatest comfort for the family's real needs. We have made our room just that—a room to live in, every day of our lives, a really, truly, living-room.



"The huge fireplace, on the west side of the room, is our greatest delight"

Corn-Husk Porch-Mat

IT IS a good idea during the winter days that are coming to braid some corn-husk mats for the porch. In fact, they look quite "Japanesque," and they wear well. Choose good clean-looking husks as nearly alike as you can get them, soak them so they will be pliable and easy to braid. Any child that can braid her hair can braid husks. Take enough of the long strands to begin braiding (three strands), and begin braiding as you would your hair. Be sure not to braid too near



"On one side, in a snug corner, the goodman of the house has his desk"

the end before attaching new strands. When your braid is long enough, tie the end with a strong cord. Get a piece of burlap or other strong material, and begin at the center, coiling around and around until you have the mat the desired size. The mat may then be stained any color to suit. After it has been stained, varnish it, to keep it from becoming water-soaked. Next summer these mats will add much to the appearance as well as the comfort of your porch.

VON ALEX.

Dishes for Autumn Days

The Left-Over Boiled Dinner—The vegetables left from a boiled dinner are delicious served in either of the following ways: Cut the vegetables into small cubes, and add to them a cupful—or more if for a large amount—of pickled beets also cubed. Melt butter in a skillet, and warm the vegetables thoroughly. Serve very hot. Or, the vegetables may be served as a scallop, using a separate vegetable for each layer and adding a little onion for flavoring. Cover with rich milk, and bake twenty minutes.

A. M. ASHTON.

Sweet Pickled Pears—To each four pounds of pears allow two pounds of brown sugar, one pint of vinegar and one tablespoonful of whole cloves, allspice and stick cinnamon. Tie the spice in small bags, and put in a saucepan with the vinegar and sugar. Boil, add the fruit, which if small may be left whole and not pared, and cook for ten minutes. Take out the pears, boil the syrup for five minutes longer, and pour it over the

fruit. For three days in succession drain off the syrup, bring it to the boiling-point, and pour it again over the pears, then can.

HELEN SYMAN.

How to Cook Greens—A most delicious dish of greens is cooked in this way: Wash them thoroughly, and shred if the leaves are large. Let stand a short time in cold water. Place, dripping, in a kettle having a very tight cover, and set over moderate heat. If pork is desired with them, cut it in slices, and boil in a separate kettle with a little water. When the greens have cooked for fifteen minutes in their own steam, add the pork slices and a very little of the water in which it was cooked, and continue the cooking until the greens are tender. If pork is not used, add a seasoning of salt, pepper and butter when the greens are done. Cooked in this way, they have a much finer flavor than when boiled in a quantity of water. The kettle must cover very tightly so that the steam is retained, as this improves flavor. A. M. ASHTON.

Sewage Disposal of Country Homes

By William Draper Brinckle

IS SANITATION a fad?

Listen. In 1898 there were ten thousand troops encamped at Jacksonville, Florida; and over two thousand of these contracted typhoid fever, with more than two hundred deaths. But in 1911 twelve thousand troops encamped at San Antonio, Texas; and there were just two cases of typhoid, with no deaths!

Now, Jacksonville is not one bit less healthy than San Antonio; but in the one instance nothing beyond ordinary camp-cleanliness was attempted; while in the other scientific sanitation was rigidly enforced; that's all.

"That doesn't concern me!" you say.

Doesn't it? Listen once more. In 1905 the typhoid cases in New York State were about one in every hundred of the population; that is to say, one out of every two citizens probably had typhoid before he (or she) reached the age of fifty! If smallpox were one tenth as prevalent as this, we would all go half-crazy with alarm; and yet an attack of smallpox isn't anything like as serious a matter as an attack of typhoid. But this Jacksonville-San Antonio comparison shows how absolutely we can prevent typhoid fever, if we only will take the trouble. It isn't a matter of theory; it's a matter of cold, hard fact.

Now, let's first take the case of the small farmhouse, with either no plumbing at all, or very little. At any rate, there is no water-closet; instead, we have the ordinary privy. Sometimes there is a deep cesspool under this; and then there is very serious risk indeed of sewage seeping through the underground springs into your well. This has often happened when the well was fifty or a hundred feet away! On the other hand, there may be no cesspool, but merely a shallow pit; and



Fig. 1

this is even worse. Flies swarm happily over the filth, and then crawl good-humoredly over the food in your kitchen! Remember, *one fly* will carry an incredible number of typhoid germs; and no matter how carefully you screen the house some flies will get in.

Over fifty years ago an English clergyman invented the "earth-closet"; and it is so extremely easy to make, and so entirely sanitary and satisfactory, that I cannot understand why it isn't used everywhere. Fig. 1 shows a section through it; Fig. 2 is the plan. A smooth cement floor is laid, four inches thick, on top of the ground, with eighteen inches of cinders, sand or gravel underneath to keep the frost from cracking it. Mix five parts of sand and gravel (or three

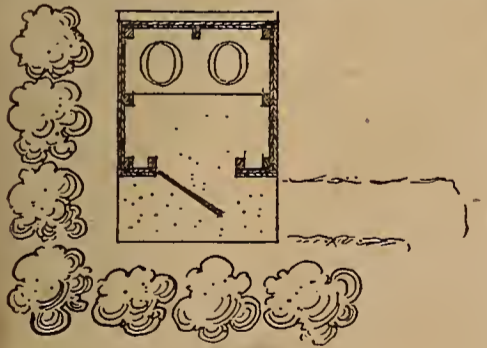


Fig. 2

parts of sand and five parts of small broken stone) and one part Portland cement; then add water until the whole is like rather thick mud. Spread it evenly and ram it lightly in place; then smooth up the surface with cement. The various cement manufacturers issue handbooks telling more fully how to do all this.

Let everything stand for about three weeks; then build the house as shown; shingles make excellent covering for the sides and roof; but leave a little space open at the top of the walls, for light and ventilation. If you choose, a small glass window can be used instead. Let the eaves project two feet or more, especially in front; this will give a bit of shelter.

Now, cut a good tight barrel in two, and set each half on short "skids" or runners; see that the whole thing is just low enough to slip closely under the seat. Provide a box of dry earth or fine coal-ashes, with a short fire-shovel; then each

time the closet is used enough of this earth must be put down to entirely cover all sewage. When the half-barrels are nearly full, hitch a horse on, and dump them somewhere in the garden or fields. This refuse is not at all offensive or harmful, provided enough earth has been used; for dry earth is the best disinfectant possible.

The supremely important thing is *always* to keep the contents of the barrels entirely covered with dry earth; if this is done, there will be no odor, no danger from flies and no risk of any sort. Indeed, you can build the earth-closet adjoining the kitchen porch, if you choose, so that one isn't exposed to the weather in going to it.

But by all means build another earth-closet out by the barn; it's nothing short of criminal to have some miserable makeshift there, where the flies can crawl over the filth and then over the milk-pails!

But there's another sort of refuse equally dangerous. The bedroom slops and the wash-water hold typhoid germs, too; and yet you usually pour them out on the ground, in the back yard, not three feet from the kitchen door, or possibly let them run down a foul, stagnant, open gutter. Fig. 3 shows how to take care of these. Dig a hole in the ground, beside the back porch, put concrete down, and imbed a half-barrel in it. Arrange a tight-fitting wooden cover, hinged and worked by a cord. Then set a

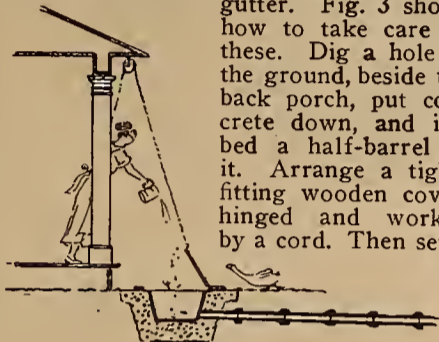


Fig. 3

line of three-inch glazed terra-cotta pipe, laid with a little slant; cement the joints of this very carefully. At a distance of fifty feet or more change to the ordinary four-inch drain-tile, laid ten inches underground and extending fifty feet more; if the soil is very stiff, increase this to a hundred feet. But I'll speak more of this later. If there is a pump handy, let the pump-drain run into the half-barrel; it will keep things washed out; and, if there is a kitchen-sink, the waste from it can be led into this, too. But above all have a tight cover, to keep the flies clear.

But maybe one has a bath-room; then, whether there is a water-closet or not, we must have a septic-tank. Don't be alarmed; it isn't at all a serious thing to make. For the ordinary small family, of four or five persons, take two large hogsheads (Fig. 4) and set them in concrete, in the ground. Be sure there is at least four inches around and underneath these; let the concrete be wet as cake-batter, or

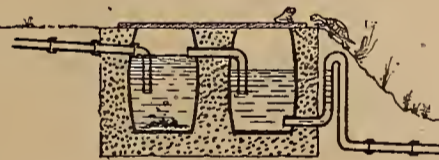


Fig. 4

even wetter. Run a line of four-inch salt-glazed terra-cotta pipe out from the house to this, laid with a fall of one foot in fifty. Cement all joints very thoroughly. Then when the hogshead is reached change to cast-iron pipe, with an elbow and a section eighteen inches long sticking down into the hogshead. Get a plumber to solder the "ell" and the two lengths together for you; don't try to do it yourself. Set another similar elbow to connect this hogshead to the next one. Then get a special cast-iron fitting, called a "septic-tank syphon," and put it at the far side of the second hogshead, burying it in the ground. These pipes, and so on, must, of course, be all put in before the concrete work is done. Then, finally, put on tight-fitting covers of heavy oak plank; but arrange these to lift up at need.

Now, run a line of three-inch glazed terra-cotta pipe with cemented joints from the end of the syphon; this must have a fall of only one inch to fifty feet. Extend this toward lower ground, until the surface of the earth is just ten inches above the top of the pipe. Now put in a fitting called a "Y-branch" (Fig. 5) in glazed terra-cotta; but from this run two lines of four-inch porous drain-tile (the ordinary sort used for draining fields) laid with even less fall, about one-fourth inch in thirty feet. Keep the tops ten inches below grade; set the tiles a quarter of an inch apart (Fig. 6).

If left so, of course earth will work its way in and eventually stop them up, so the joints must be protected by surrounding them with coarse gravel, oyster-shells, or some such thing. Or, short V-shaped bits of hard wood may be laid over the top, with blocks of the same underneath. In very loose,

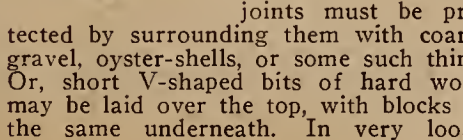


Fig. 6

sandy loam thirty feet for each of these lines of tile will be sufficient, but in hard clay they must be three times that long.

Now for the principle of the thing. We usually think of germs as very bad, naughty little creatures, always trying to give us some dreadful disease or other. True, but Nature has also provided a lot of good little germs, who spend their time eating up the bad little germs! But

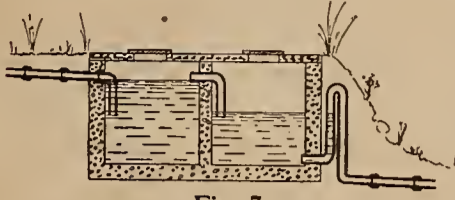


Fig. 7

these good little germs can only live under certain conditions. I'll explain in a few minutes.

So here's the way the apparatus works: The sewage flows down the pipe and into the first hogshead, the actual "septic tank." Presently this fills up, but the solid matters drop to the bottom, the scum floats on top, and only the liquid sewage can flow through into the second hogshead, the "dosing tank." Soon this also fills up, but each time the water-line reaches a certain height the syphon automatically sets to work and runs all the contents out of this dosing tank into the drain-tile. This happens about once a day, and the sewage seeps rapidly out between the joints of the drain-tile into the earth. But just as soon as the flow stops, the good little germs get to work, and in two or three hours they have eaten all the bad little germs and are hungry for more!

Why couldn't we do away with the syphon, and just let the sewage run into the drain-tile all the time?

Because the good germs *must have air* every little while, and if the sewage-water were seeping out continuously, they would drown. The ordinary cesspool has just this defect; the foul water continuously seeps away and soon pollutes the surrounding ground very thoroughly, because the good germs can't live there.

The distance of the septic tank from the house is purely a matter of convenience; twenty-five feet is sufficient, provided the pipes and the concrete are tight enough to keep any appreciable amount of sewage from leaking out. The drain-tiles should, if possible, be laid in the vegetable-garden; they keep it irrigated and fertilized splendidly. But be careful not to disturb the tiles when plowing; remember, they are only ten inches below the surface.

Now, if there is no water-closet, this hogshead arrangement will suffice for quite a large family; but when there is a water-closet we need something bigger, if there are more than five persons to be provided for. Here is the calculation: for each member of the family, the septic tank must hold four cubic feet, and so must the dosing tank. Thus, if there are nine people in the house, each tank must contain thirty-six cubic feet; so we'll make these three feet square and a little over four feet deep (Figs. 7 and 8). Dig them out squarely and cleanly, then lay a floor of concrete six inches thick. In a few days build your boxing inside this, set the pipes, and pour in the wall concrete, tamping it down. In *three weeks* tear out this boxing, and lay a reinforced

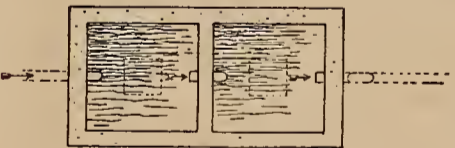


Fig. 8

cover over the top of the tanks. Build a temporary floor to carry this; also, frame up for a couple of man-holes, just big enough to crawl through. Pour an inch of concrete on the flooring; then lay some strands of fence-wire on this, about two inches apart, running the whole length; lay a second line of wire on these, crossing at right angles. Pour more concrete on, until the whole is six inches thick; let this remain at least three weeks, and then pull out the woodwork through the man-hole, breaking it up to do this.

Finally, have two iron covers made for the man-holes, or use thick wooden ones. At all events, they should fit tightly.

The length of drain-tile depends on the size of the dosing tank; allow eight lineal feet of tile to each cubic foot of capacity in the tank. In heavy clay there must be more than this; as much as twenty-four lineal feet in extreme cases.

"What's the use of all this? I haven't ever been sick a day in my life; why not let well enough alone?"

No; and your buildings haven't ever burned down, either; why do you insure them? It's a trifle late to insure after the fire, it's not especially sensible to lock the door after the horse is stolen, and—well, there won't be so much money left to "sanitize" with (as Kipling calls it) after paying doctors, nurses and—undertakers!

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Fancy-Work Department

Advance Christmas Gifts

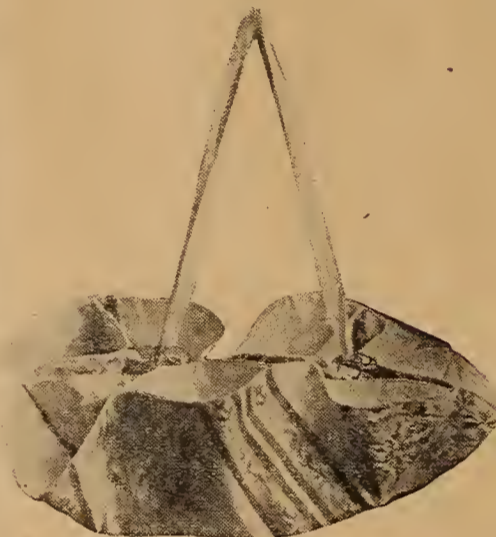
Designed by Marcet Lewis and Hannah Waldenmaier

ON THIS page are shown three very attractive articles, any one of which is suitable as a Christmas gift. It's not a bad idea to be making up Christmas gifts now, so that the rushing holiday season may not find us behindhand in our preparations. Directions for any one article will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope; or, directions for making all three articles will be mailed upon receipt of ten cents in stamps and a stamped and self-addressed envelope. When asking for all three directions, address Fancy-Work Department, care FARM AND FIRESIDE, Springfield, Ohio.



Work-bag, flat view

HERE is a work-bag that is as unique as it is useful. The fact that it is easy to make will not detract from its merits. Full directions for making will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address Marcet Lewis, care of FARM AND FIRESIDE, Springfield, Ohio.



Work-bag, drawn together

WITHOUT a doubt this is one of the most attractive crocheted bags ever shown in FARM AND FIRESIDE'S Fancy-Work Department. It is made of mercerized cotton thread, of a warm cream tint. The bag itself is made of satin and is of the same shade as the crochet thread. An ingenious arrangement of two whale-bones in the opening of the bag keeps it in shape at all times.

It is not at all necessary to make this bag of cream mercerized cotton. All sorts and conditions of color-schemes will present themselves to the reader's mind. Made up in black silk thread over a black satin foundation, it would prove a suitable gift for an elderly lady. Crocheted of pale-blue mercerized thread and mounted over buff satin or silk, it will harmonize with a dainty afternoon or evening gown. In fact, this bag has so many possibilities that it would need much more space than is allotted to it to name them all. Probably each reader will find a distinct use for it.

Full directions for crocheting this bag and for making it up will be forwarded upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address all requests to Hannah Waldenmaier, care FARM AND FIRESIDE, Springfield, Ohio.



A new design in a hand-bag

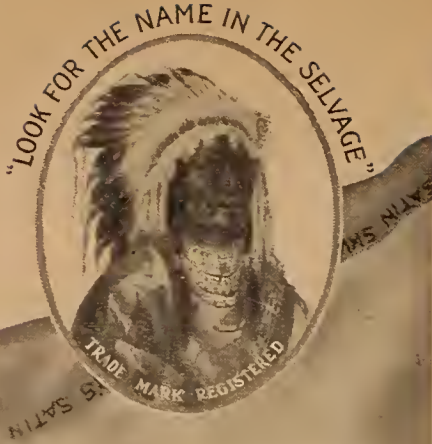
IT IS so difficult to find any small bit of fancy-work appropriate to the wants and uses of "mere man" that a little gift such as this necktie-rack will be hailed with delight. Its utility is so apparent and its making such a pleasant and easy diversion that it is sure to be a popular piece of handiwork with the approach of the holiday season.

The fact that it is most appropriately made up in college colors will be another reason for its popularity. Little as the usual man cares for fancy-work, he must have a place to hang his ties, and here's the place, ready and waiting. And if it wears the colors of his Alma Mater so much the better.

Explicit directions for making this dainty Christmas gift will be forwarded upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address all requests for these directions to Marcet Lewis, care of FARM AND FIRESIDE, Springfield, Ohio.



Tie-rack suitable for giving to the college student or graduate



Beware of satins with a very high lustre and no wearing quality.

Skinner's Satin

is guaranteed to wear two seasons. It has the soft, natural lustre of the original silk fibre, free from the injurious and dishonest treatment that produces artificial gloss.

Thousands of women are deceived every day into buying silks or satins that split almost as soon as put on. Unscrupulous manufacturers who think only of profit, stretch the silk fibre and "bake" it until it remains stretched. This gives a high lustre and more fabric, but robs it of life and strength.

Skinner's Satin is made from pure dye silk, with all the elasticity and strength of the perfect silk fibre unimpaired. That is the reason for its wonderful wearing quality.

Skinner's Satin is guaranteed to wear two seasons. If it does not, send the garment to any of our stores and we will reline it free of expense.

Write for Samples to Dept. B

William Skinner & Sons

Cor. Fourth Ave. and 17th St.
NEW YORK CITY
New York Philadelphia
Chicago Boston
Mills, Holyoke, Mass.

Skinner's Satin is sold by all First-class Dry Goods Stores and is used by all manufacturers of First-class Cloaks, Furs and Men's Clothing.

This label is furnished when desired, to makers of ready-made garments for the protection of their customers:



The Satin Lining in this garment is Skinner's Satin AND IS GUARANTEED TO WEAR TWO SEASONS MANUFACTURED BY William Skinner & Sons.

GIRL'S WATCH

Do you want to have one for yourself?

This handsome watch is dainty and attractive and a fine timekeeper. It can be worn with a chatelaine pin. It is guaranteed for one year. You can get it for doing us a favor.

We will send this watch for only six yearly subscriptions to Farm and Fireside at 50 cents each.

Each subscriber will receive twenty-six numbers of Farm and Fireside. You can easily earn the watch in an afternoon.

Send the subscriptions to

Farm and Fireside, Springfield, O.



Attractive Waists and Skirts In New Designs



No. 2155

No. 1977

A NEW skirt or a waist will oftentimes quite brighten up an outfit that has a rather worn-out appearance. For this reason the average woman is glad to get suggestions for their development and attractive designs. This page of waists and skirts has been planned to help this woman. Though all of the designs are simple, they are smart in style, and there are also shown on this page two waists and skirts for misses, as well as two adaptable dressing-sacque patterns

Woman's Home Companion patterns may be ordered from Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado



No. 2153

No. 2011

No. 2155—Costume Blouse with Long Sleeves

32 to 44 bust. Material for 36-inch bust, three and three-eighths yards of thirty-six-inch material, one-half yard of all-over lace, one-half yard of lace for neck-frill, one and one-fourth yards of lace for sleeve-frills. The price of this costume blouse pattern is ten cents



No. 2155

No. 1977—Tucked Lingerie Waist with Frill

32 to 40 inch bust. Quantity of material required for medium size, or 36-inch bust, three and five-eighths yards of thirty-six-inch material. Pattern, ten cents



No. 1977

No. 1910—Belted Dressing-Sacque

32 to 44 inch bust measures. Material for medium size, three and three-fourths yards of twenty seven-inch material, or two and one-fourth yards of thirty-six-inch material. Price of this pattern, ten cents



No. 1988



No. 1988



No. 1706



No. 1706



No. 2011

No. 2153—Box-Plaited Tailored Waist

32 to 44 bust. Quantity of material required for medium size, or 36-inch bust, four and one-eighth yards of twenty-four-inch material, or three and three-eighths yards of thirty-six-inch material. The price of this tailored waist pattern is ten cents

No. 2011—Tailored Waist Buttoned in Front

32 to 44 inch bust measures. Material for 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or two and one-eighth yards of thirty-six-inch material. Price of this pattern, ten cents



No. 2153

No. 1427—Dressing-Sacque in Two Styles

34 to 44 inch bust. Material for either sacque, in medium size, or 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or two and one-eighth yards of thirty-six-inch material. The price of this dressing-sacque pattern is ten cents



No. 1910

No. 1988—Misses' Plain Tailored Shirt-Waist

12 to 18 year sizes. This type of waist developed in striped flannel or washable silk is very appropriate for the tailored suit. Price of this pattern, ten cents

No. 1706—Misses' Peasant Blouse with Guimpe

12 to 16 year sizes. Quantity of material required for medium size, or 14 years, one and one-half yards of twenty-four-inch material, or one yard of thirty-six-inch material, with two yards of twenty-four-inch material for guimpe. Price of pattern, ten cents

No. 1829—Six-Gored High-Waisted Skirt

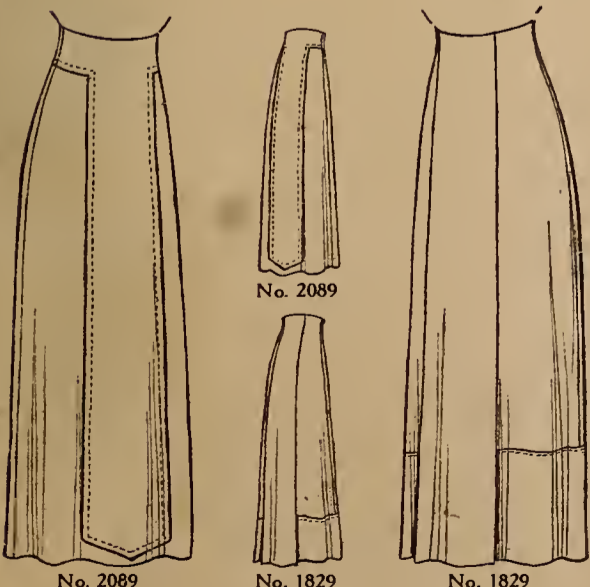
12 to 18 year sizes. Quantity of material required for medium size, or 14 years, three and one-fourth yards of thirty-six-inch material, or two and three-eighths yards of forty-four-inch material. Pattern, ten cents

No. 2050—Panel Skirt with Plaited Flounce

22 to 32 inch waist. Length of skirt, 41 inches. Material for 26-inch waist, eight and one-fourth yards of twenty-two-inch material, or five and one-fourth yards of thirty-six-inch material. The price of this panel skirt pattern with flounce is ten cents



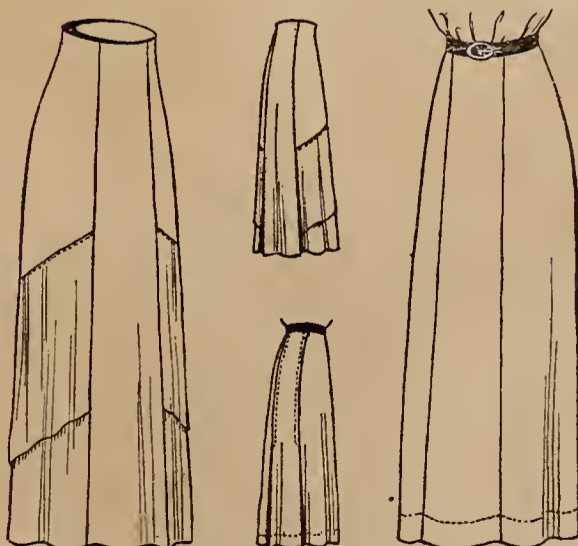
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No. 2089

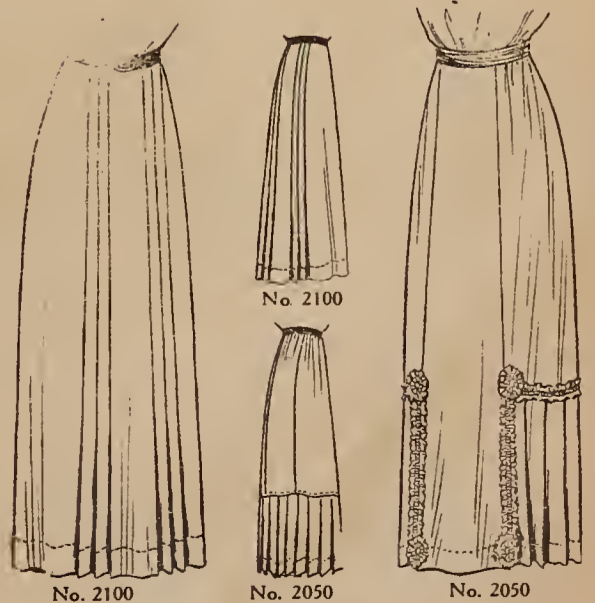
No. 1829

No. 1829



No. 1954—Four-Gored Skirt in Two Styles

22 to 36 inch waist. Material for 26-inch waist, five and one-half yards of thirty-six-inch material. When drapery is omitted, one and one-fourth yards less of thirty-six-inch material are required. The price of this pattern is ten cents



No. 2100

No. 2050

No. 2050

No. 2100—Skirt with Side-Plaited Panels

22 to 32 inch waist measures. Length of skirt, 40 inches. Material required for 26-inch waist, five yards of thirty-six-inch material, or four yards of forty-four-inch material. The price of this skirt pattern with panels is ten cents

OUR YOUNG FOLKS' DEPARTMENT

CONDUCTED BY COUSIN SALLY



Our New Contest for Everybody

A Chance to Get and to Give Information

FROM time to time FARM AND FIRESIDE intends publishing a list of questions pertaining to farm subjects. Every one of you should know the answers to these questions. If you find that you don't, look them up. Try them on your friends the next time you go to a social, party or entertainment. You'll be surprised at the amount of fun and information you'll find in them.

We offer prizes for the five best sets of answers to this list of questions. An extra, sixth, prize will be given to the best list sent in by a member of the Cousin Sally Club. The prizes are open to every one, father, mother, children, hired man, everybody. The prizes will be awarded for the most complete lists. Note will be made of neatness, of writing, correct use of English and correct spelling. Write on one side of the paper only, and don't roll the paper, fold it.

Address all answers to the Puzzle Editor, care of FARM AND FIRESIDE, Springfield, Ohio.

Here Are the Questions

Is it possible to can fruits, vegetables, etc., successfully without heat? How? if you think it is.

When you buy or sell a cow that refuses to be led or driven from the home to which she has become attached, what methods can be safely employed?

If you find a cow choked, and no assistance can be had in time to save her, what can you do?

If you were driving a high-strung, nervous horse to a buggy, and he threw himself in such a way that he could not arise immediately, and began struggling, what would you do?

If you were driving where assistance was not obtainable, and one or both front wheels were crushed or gave way, what could you do to get the wagon home?

Why is the percentage of gliadin in wheat-flour such an important factor in the manufacture of that nice "light" bread?

How may good bread be produced from flour deficient in gliadin?

What is the actual duty of the "drags" or "cleaners" of the cross-cut saw?

Why do chickens prefer to take their rest on a round pole, rather than a square pole or a flat surface?

At what age is the mouth of a horse "full"?

The Pilgrims' Thanksgiving

By Annie L. Shepherd

WHEN the Pilgrims had to arrange for a Thanksgiving dinner, they couldn't go to market and select just what they wanted. Look up the matter in your histories and readers, and see what they could find for the feast! Here's a possible menu! Does it look queer? If you can't make it out, look on Our Page next issue.

Osytret, sihf, tyuekr, dsuke, egsee, vneonsi, byaerl lfoa, Innadi mlea csaek, tsuprin, shqusa, pniumkp, bsena, diedr pslmu, ceagbba.

Keeping the Children "Up on the News"

By Felix J. Koch

IT HAD often been a matter of wonder to us, as we ran across the rank and file of American people, on trains and boats and other places where a professional globe-trotter must, perforce, mix with people, that more Americans, and particularly those of the weaker sex, and more of our boys and girls especially, do not know more about the events of the day, the history which is making about us, than many of them actually do.

Let me tell you about the way one mother of our acquaintance has maintained an interest in events of the day for her family. Breakfast-time in this home comes about a quarter of an hour after rising, or, better, fifteen minutes after the family have come down. Father, first one down, by a habit born of long practice, unlocks the front door from its nightly barricade and takes in the paper. It is a daily of average size; then, again from a habit of long standing, he takes the long paper-cutter, there on the sitting-room table, and by one cut through the center sheet at its fold or middle he has parted all the paper into its leaves.

Then, just as quickly as you might shuffle cards for a game of authors or old maid, he has put the front page on his own plate, so that the telegraphic news and the weightiest matters may be digested by the head of the house.

Mother gets the woman's page, yes, with its accounts of society and clubs, as well as things of more moment, for mother is human and a woman you know.

Johnny, fourteen now, gets the sporting page. He talks baseball and football and can tell you world championships, but if Johnny didn't get this at home, he would at school, and perhaps in a way that was not quite so good.

Sister is fitting to teach, and, as she also expects to give private lessons around the city, it's important for her to know who's who and why. Who is related to who, what they are proud of (for we're all susceptible to a bit of praise rightly bestowed, and it may help her to a client at some time). Again, it also behooves her to know the skeletons lurking in family closets, in order that she may not make a break. Supposing she were giving George Brown a lesson and Mother came in to see how he was getting on. Then she might say, "Oh, George is getting on well, but he must practise. Little Hilda Wilhelmy is doing ever so much better than he."

Just recently, the Wilhelmy side had broken off an engagement with the Browns' son, and all the Browns were up in arms.

So there were other reasons for partitioning the paper, the elder son getting the balance, left after dissecting the rest, for he was an omnivorous reader.

While the maid served and while the fruit was slowly par-taken of, the meal went on in silence. Each one was busy with his or her page, and only the occasional clink of a spoon would be heard. Then, of a sudden, maybe Johnny would break the silence: "Gee Willikens! The Cubs are going to play the Reds to-morrow, and they're only third now."

"How do they stand, John?" Father questions.

The rest are looking up, likewise to be informed. When an entire nation is interested in a clean sport, as our people are in baseball; when papers are sold by the thousands, simply to tell of one game; it behooves everyone to take interest. So, long ago, Mother and Sister had Johnny explain to them the fine points of baseball; in fact, Johnny got his nine to play in the street before their house—he let the boys into the secret, and they showed off amazingly,—while Big Brother explained to Mother and Sister the laws of the game.

Possibly the elder brother had this morning found something more interesting. There was a lecture before the Y. M. C. A. by a man from the East who showed the power of liquid air by actual demonstrations. Among others, he made the expanding air drive a little engine, as steam would. Hardly has the discussion of the game ceased before he is in with: "Wonderful what they're doing in liquid air. I wish I'd known of this in time to go and see it."

Then he tells, in words that the rest, who haven't taken physics at high school, can comprehend, how the air is reduced to liquid, and whence its force. Some day the others may run across a treatise on the subject, but if they read it, it will be by reason of the interest awakened by Edward at breakfast, when he held aloft the steaming coffee-pot, kept in the steam, and then allowed it to escape with a rush, as an example. How much better they all understood it! How even

Mother, as she sat at her darning, thought over the wonders of modern science that morning.

Nor was Mother behindhand. Mrs. Pfau was entertaining this afternoon for her sister from Chicago. She wondered if they would have as unique things at luncheon as last time, when they had ice-cream, in form of souvenir spoons, and each of a different city. Then, about the delightful people you always met at Pfau's.

So Johnny and Edgar and Father got a peep into a plain, every-day woman's world, from the woman's point of view. Also, she noted how peaches were going up this year, and gave bits of canning-time talk and told of the new recipe she'd received from Miss Murr. All of which, years after Mother had gone from them, the children would treasure along with their recollections of home.

Then Father—well, there was the plague in China. Why in the world didn't Uncle Sam make them use the Boxer indemnity he'd refunded, to clean up their cities.

Sister had heard a returning missionary tell once of conditions; how in Shanghai unwelcome babies were thrown into the alleys to die, so that daily a baby-cart, so-called, came and gathered the bodies mutilated by dogs and spoiled by the heat of the sun.

One can, if he will, be a subconscious listener or reader, and so, while each of the rest kept an ear open for the conversation, they managed to have an eye still on the page that they read.

So talk drifted from the muffins through to the last cup of coffee. What an insight it gave them into events of the day! What interesting things to think about, on the way to work, to school, at the household duties! How it filled each with a desire to know more of the things uppermost then, in the eyes of the public, inciting them to look the topics up. Johnny, who'd have thought it work had Teacher suggested, borrowed Edward's physics text-books to read up on liquid air. Sister, girl though she was, walked six squares out of her way to see the fire of which Johnny read them, where a poor man lost his life rescuing a pet goat. Mother wanted to surprise Edward and so tried a recipe she found in a column corner, and Father stopped in at the library to borrow "China To-day."

Each day brought its fresh revelations. Education? It was the broadest training one could secure. Behind it all, too, the spirit of indulgence toward the special interests or hobbies of each, the toleration and willingness to explain, made of the breakfast-hour an education in itself.

Cousin Sally's Letter

DEAR COUSINS—For a long while we have been holding contests for our cousins. They have enjoyed them so much that I have decided to throw our contests open to all readers of our paper. At the same time, there will be a special prize for members of the Cousin Sally Club who send the best answers.

All our contests will be on farm subjects. And you may go for help to your parents, your teacher, your friends, the library or any books of reference you have at home.

Our new contests will include everyone in the family. Maybe your father will try to answer the questions. Perhaps your teacher will ask for answers on Friday afternoons in school. Every boy and girl, every man and woman living on the farm, ought to know the answers to these ten questions. Do you?

I'll be very anxious to see the answers you send in. Don't address them, as formerly, to Cousin Sally, but address them to the Puzzle Editor. If you want to try for the extra Cousin Sally prize your letter must say "I am a member of the C. S. C."

Here's wishing you all the best of luck!

Affectionately yours, COUSIN SALLY.

AGENTS WANTED

We want a good live representative in each locality to sell our famous, guaranteed Schwab safes for store, office, factory and home use.

We will offer you a splendid opportunity—a chance to become a high-grade salesman—in fact, a chance to really get into business for yourself and to organize a big territory as District Manager. This opportunity means a great deal more than a

Big Salary

and you should make application immediately. No experience is required—no investment is necessary. You can take orders from our big, handsome, illustrated catalog, or we will furnish you with one safe as a sample at wholesale price.

Thousands of safes are now being sold to farm homes and private homes in cities and towns. The opportunity we place in your hands can make you absolutely independent with an abundant, steady income. Exclusive territory is assigned and you can start making money immediately. Apply at once. It will cost you nothing to investigate. Send your name and address today. Address:

The Schwab Safe & Lock Co. Dept. 123, La Fayette, Ind.

EASY TO EARN
Your choice of 150 premiums for selling our Keystone Easy-to-Thread Best Quality GOLD EYE NEEDLES at 5c a package. With every two packages we give EXTRA Silver Aluminum Thimble. Send name and address. We send postpaid, 24 needle packages and 12 thimbles with LARGE PREMIUM BOOK. When you send in the \$1.20 and receive premium outside to selected from premium list. Extra present given if ordered today. A post card will do. Send no money. We trust you. Address: Keystone Novelty Co. Box 145 Greenville, Pa.

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Just out. Patented. New Useful Combination. Low priced. Agents aroused. Sales easy. Every home needs tools. Here are 15 tools in one. Essex, Co., N. Y. agent sold 100 first few days. Mechanic in shop sold 50 to fellow workmen. Big snap to business. Just write a postal—say: Give me special confidential terms. Ten-cent sample free if you mean business. THOMAS MFG. CO., 5746 Wayne Street, DAYTON, OHIO

AGENTS

MEN AND WOMEN. 100 PER CENT. PROFIT
Something new. Big Seller. Good repeater. No competition. Not sold in stores. Concentrated Non-Alcoholic Food Flavors. Over 50 kinds. Put up in collapsible tubes. Four drops go as far as a teaspoonful of bottle extract. Also Perfumes and Toilet Preparations. Every home a possible customer. Hustlers should make \$8 to \$10 a day. Experience unnecessary. We teach you how. Fine sample case furnished to workers. Be first in your territory. Write today—a postal will do—for full particulars. FREE AMERICAN PRODUCTS CO., 5235 Sycamore St., Cincinnati, O.

Why Not Have The Best Light?

STEEL MANTLE BURNERS. Odorless. Smokeless. Make the home cheerful and bright. Three times as much light as an ordinary burner. Every one guaranteed. Just what you need! If your dealer doesn't keep them send his name and address with your name and address and we will mail you as many as you wish at 25c each. Agents Wanted everywhere. THE STEEL MANTLE LIGHT CO. 384 Huron Street, Toledo, Ohio

AGENTS

BIG PROFITS IN SCIENTIFICALLY TEMPERED KNIVES AND RAZORS
with your photo, name and address, lodge emblem, etc. in hand. Great opportunity. Work full time or spare hours. No experience necessary. We show you how to make money. Write today for special outfit offer. Territory going fast. Canton Cutlery Co., Dept. 243, Canton, O.

SAVE YOUR DIMES

Lucky Horse Shoe Bank will do it. Smallest bank in the world. Carried in pocket or worn as watch charm or locket. Holds ten dimes—tenth dime opens it. Great novelty. Price, Nickel-plated 10c; Gold-plated 25c. Sent postpaid. Agents wanted; exclusive territory. ADDRESS: LUCKY HORSE SHOE BANK Room 820 Flatiron Bldg. New York

WANTED—SALESMEN AND SALESWOMEN

Hundreds of good positions now open paying from \$1,000.00 to \$5,000.00 a year. No former experience required to get one of them. We will teach you to be a high grade Traveling Salesman or Sales-woman by mail to eight weeks and assist you to secure a good position where you can earn good wages while you are learning Practical Salesmanship. Write today for full particulars and testimonials from hundreds of men and women who have recently placed in good positions; also list of good positions open. Address (nearest office) Dept. 134.

National Salesmen's Training Association Chicago New York Kansas City Seattle New Orleans Toronto

AGENTS PORTRAITS 35c. FRAMES 15c. Sheet Pictures 1c. Stereoscopes 25c. Views 1c. 30 days' credit. Samples and catalog free. Consolidated Portrait Co., Dept. 4037, 1027 W. Adams St., Chicago.

AGENTS \$35 TO \$75 A WEEK INCOME.

No wrapping, no cloths. Sells everywhere—big profits—exclusive territory. Write today. Special terms. PIRRUNG MFG. CO., Dept. 216, Chicago, Ill.

CURIOSITY BOX GIVEN

For only 2 two-cent stamps. I'll send you 40 Beautiful Souvenir Cards and tell you how to get my big surprise Curiosity Box. Write me today. R. W. MACY, Room 708, 501 Plymouth Ct., Chicago, Ill.

AGENTS!

Become partners in our business through our profit-sharing plan. Sell "BRANDT'S ALTONIC STROPPER." It hones and sharpens your razor better than an expert barber. Works automatically for old-style razors and safety blades. Anyone can use it. Guaranteed for life. Our profit-sharing plan and our premiums make this the greatest agency proposition. Write quick for prices and territory. D. F. BRANDT MFG. CO., 42 Hudson St., New York

Odds and Ends

By Tudor Jenks

Illustrated by Edward L. Chase

WITHOUT any wish to belittle the coming of a republican government in China, is it not the simple truth to say that this is a matter of very little importance to most of us in America? If we happened to be so placed that we never read anything about Yuan Shih Kei, or about Sun Yat Sen, the handsome young doctor who has overturned an empire before his mustache is full grown, is it not true that their doings would not concern us in the slightest degree?

To us the things that really matter are those forming part of our daily lives and raising questions which we must decide. One that comes to all of us relates to household "scavenging"—using this word in its extended meaning to cover the getting rid of trash.

This article is addressed to the great Common People, and it will ignore any petty fault-finding by pedantic persons who would pop up to demand just what we meant by "scavenging," and just what is included in the word "trash." Such critics are invited to withdraw to the extreme rear of the hall, and to find comfortable places where they may sit in silence.

Into every American household in the natural course of events come a great variety of fascinating articles, which, upon their coming, gain entry under the guise of utility. That utility soon ceases, and thereupon these articles ought rightly to be re-labeled "Trash," and exiled to the dust-heap, the ash-barrel, or other trash-receptacle.

For the sake of our younger readers not yet accustomed to dig possible meanings out of uselessly big words, we will explain that we refer to the boxes, bottles, packages, and so on, in which things come packed, and which, once emptied, ought to be considered useless.

But just here sordid, common life yields its place to the poetic imagination, and far too many of us become the victims of wild dreams or hopeful visions that present most fascinating methods of using these empty containers.

Let us take for illustration those peculiarly delightful boxes in which preserved ginger may be bought. Lives there a man, or woman, with soul so dead who never to himself, or herself, hath said, "I simply cannot chuck away this lovely box? It is precisely the thing for holding—" or something else. Beautifully hinged, decorated with an artist's dream in enameled colors, curved so as to offer resistance to crushing, as does the oval egg of a bird, all shiny within and without, readily cleaned, or, uncleaned, possessing an Arabian Nights odor of the Orient and a delicate sugary reminiscence—one can imagine some dusky savage chief making this the receptacle for his most precious souvenirs of the dusky princess whose kinky-haired father refuses to smile upon the suit of his ebon neighbor. Or, what could be more suitable to hold the precious tea that forms almost the only earthly solace of the wanderer upon the frozen plains of Siberia? Even in civilization this box, or others as beautiful, seems to plead for a place in some neatly arranged drawer wherein all things have their systematic receptacles.

The poet who would not call him friend that would set his foot upon a worm might also find it hard to feel any real sympathy with him who could heartlessly condemn so beautiful a piece of work to be trodden under the heel of the ruthless man in the ash-cart.

We have taken the ginger-box merely as a type, and could as readily substitute the dainty tooth-powder bottles whose shiny tops turn so smoothly to reveal a tiny opening, or the porcelain boxes, with their aluminum screw-tops, a triumph of ceramics and of metallurgy, which are just the things in which to carry tiny bits of jewelry upon those journeys which we all are ever making in imagination and never in reality.

If you have that inestimable treasure, a tinker, in the house, and would gain a true idea of the pathos of the words, "might have been," examine for yourself his *omnium gatherum* of things which he hopes will come in useful if kept for the mythical seven years. In some most unhandy receptacle you will find flotsam and jetsam from his entire past. Here are buckles, plain and fancy, speaking, though without tongues, of his hope that he may one day find a strap or ribbon to



"We had a neighbor, a handy man"

which each shall be wedded. Here are old keys that will unlock nothing evermore. Here are bottles galore, long and slender, short and squat, in which shall be treasured several liquids that never yet were on land or sea. Here are neat tobacco-bags, with handy draw-strings, possibly awaiting a day when they shall be filled with gold nuggets belonging to some golden dream of the future. Here are corset-springs, full of energy that might run small toys for children. Here are those most useless of all bits of metal, old rusty hinges, which only a long bath in kerosene and a cold-chisel could open.

Old gloves, from which can be cut cots for cut fingers, form part of the treasure-house of every tinker. And to all such waifs and estrays his heart still clings, though years of experience should have taught him that out of all his gatherings he can never get the one thing needed for the particular work he may have on hand.

The instinct to save these things is a rudimentary survival of those past days when our ancestors were still battling against the wilderness and were forced to utilize whatever might make their lot easier. To-day the incoming tide brings to every household more of such contrivances than half a dozen households could ever use again. Search any store-room, and you will find serried rows of

cans, boxes, coils of wire, boxes of nails, no two alike, all laid aside in the futile hope that some day they may fill a place once more in the scheme of civilization.

And there they remain until some moving-day forces upon the collector the practical question, "What is all this worth?" Then it is inevitable that the word of their doom is spoken. They are cast forth into outer daylight, and the normal housekeeper goes on her way rejoicing—while the furtive scavengers of the neighborhood select from the discarded heap whatever happens to fit into their particular dreams of the future, and the tyranny of trash resumes its sway over some unwise neighbor.

Let us give a typical example. One day my wife and I issued a declaration of independence and lists of proscription against certain of these household tyrants. With hardened hearts and flinty faces, a clothes-basket was carried to the top of the house and became the receptacle for useless bric-à-brac, remnants of departed grandeur, pictureless frames, incomplete chess-sets and the other indescribable and hopeless ruins of several years' house-keeping. As the basket filled, our sense of relief grew, and finally it was deposited upon the front veranda of our country home, ready for exile upon the arrival of the hospitable junkman.

But we had a neighbor, a handy man, a tinker, a dreamer of dreams, an ingenious Yankee, who could see seven uses for the most useless relic of past utility. His eagle eye spied the conglomeration from afar, and abandoning all thoughts of work for the day, as soon as he learned that these were waifs and estrays, foundlings, and to be had for the taking, his inventory began. He worked fast, and within a brief two or three hours he had constructed in his own mind plans for the future which found out of the whole basket only the merest small residue which could not be made things of beauty, of use, or of commercial advantage.

Only once was he moved to remonstrance upon our heartlessness. There was a lovely ebony base that once had held a fancy clock, and a glass shade to cover the timepiece. In vain we pointed out to him that the clock was gone, that we had neither wax flowers nor statuette to take its place, and that the empty shrine could claim no allegiance from us. Still resentful, he departed homeward, gingerly bearing the glass shade and the push-covered base, in the futile hope that a kind Providence would give him something to place within.

What shall be done with these things I do not dare to suggest. I am too conscious of the possession of thousands (only the inexperienced will think this an exaggeration) for which I am still hoping to find a purpose. I have read of one woman who declared, in print, that every month she would relentlessly discard everything that had not been used during the preceding month. I can only say that she must either have lived in a very small flat, or that she is unique among her kind.

We do try to use good English, but we have adopted one phrase that certainly is not elegant in lieu of all arguments against the saving of trash. That phrase consists of three words, "Oh, chuck it!" and I grieve to confess that I believe it embodies the wisest possible advice to all optimistic scavengers. When next the attic or storeroom suggests hoarding, remember those wise words, "Oh, chuck it!"

The Open Season—What It Means to the Quail

By F. P. Linsley

IN ORDER to satisfy the money-lust of a few manufacturers of guns and ammunition, and the passion for killing which imbues a nondescript army of so-called "sports" who afford a market for their wares, we have "an open season" for many kinds of wild creatures—commonly called "game"—during which they may be slaughtered regardless of whether they are our foes or friends.

Chief in its cruelty, worst in its effect upon ourselves, and inexcusable from any reasonable standpoint, is the fact that the beautiful little quail, most attractive of the few wild creatures that remain to us as a valuable heritage of the past, is one of these and the most widely suffering and sought. Harmless from the summer morn on which he chips the fragile shell that ever was the only hindering wall between himself and liberty, innocent of any misdeed as any mother's nursing darling, free rover of field and forest, neat, clean, vivacious, whose clear-noted call is music to one's ears and whose fleeting vision a delight to the eye that beholds him, that he, of all Nature's wild folk should be delivered over to the assassin with a gun is one of the most heinous, unfeeling and heartless wrongs of our "boasted civilization." What man who loves life and freedom as he should would not rather fare on plain comestibles than

feast upon that which adds mere surfeit to the meal at the cost of base ingratitude and wrong?

Let us suppose for a moment that there was "an open season" for, say, mail-carriers—R. F. D.'s in particular. And suppose, further, that, in addition to making us glad each day with their burden of daily news, their parcels (when the traffic can stand the rate) and their messages of remembrance and regard from distant dear ones, they spent their leisure hours before and after their day of toil in picking and grinding up the seeds of noxious weeds in our fields and gardens, and in catching insect pests that damage and destroy our crops—making a specialty of chinch-bugs and Colorado potato-beetles. We would, quite naturally, regard them as our friends, not merely as friends who make life more worth the living by adding to our pleasures by helping us to enjoy them sooner than we could without their efforts, but as our co-workers and assistants as well. But now suppose—as 'twas remarked before—that there was likewise "an open season" for them, a time during which we lost sight of our best interests, a time when reason forsook its abode in the citadel of the brain of mortal

man, and we, reverting for a fortnight to a state of aboriginal savagery, said to them: "Now understand, my friends, that I regard you in an altogether friendly way, that I recognize your worth as a servant and helper, yet I am going to withhold my friendly regard for you for a couple of weeks, in fact to consider you a sort of pest to be hunted with rigid-tailed dogs, and boys and men with murderous guns in their hands and murderous passions in their hearts. I recognize the fact that death has a large number of you marked for his own anyhow during the long hard winter that is just setting in, that many of you will succumb to cold and die at your post of duty from lack of proper nourishment or from disease, so it is just as well—or better—that a few of you be killed at short notice (it will avoid much suffering and leave more food for those who survive). So I warn you to look out for your safety; hide somewhere in a brier-patch, or take to the tall timber, and may the Lord protect you from those who seek your end, for I won't."

Just suppose all this, if you can, and ponder whether it bears any analogy to the case of the quail. About the only difference that I can see is that *he* cannot reason the matter out for himself; *we* can. But, dear reasonable folk, do we?

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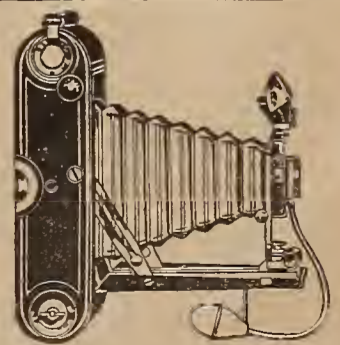
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THE support of over half a million subscribers is the warmest and most stimulating encouragement any paper could have. We believe that our Editorial plans for the next year will more than reward our readers for their confidence in the paper. There isn't room here to go into full details, but we will give you an outline of the improvements planned by our Editor. Remember, FARM AND FIRESIDE will be all that it has been and as much better as we can make it. It will be issued every other Saturday.

Great Farm Departments Strengthened

Market Outlook

This department has revolutionized the market pages of the farm papers. Formerly the custom was to give readers a list of "last Monday" market quotations. Facts that were of absolutely no use to the farmer who had produce to market and wished to know what the price would be next week or next month in order that he might sell at the most favorable time. Our Market Outlook takes up a wide variety of subjects, from Live Stock and Fruit to Cotton, Corn, Grain, Tobacco, and every other crop of the American farmer. We have an expert who forecasts the markets on each particular subject. For instance, Mr. Lloyd K. Brown, whose specialty is hogs, will tell the readers of FARM AND FIRESIDE just what, in his opinion, the hog-market will be like. Likewise, John Pickering Ross will cover the sheep-market, W. S. A. Smith, the cattle-market, etc. Not only will we tell you when to market, but how to market. We will also give our readers the names of honest commission men who deal in various agricultural products and in other ways aid you in eliminating the middleman's profit and in marketing direct. All this will insure your getting the best of prices.

Garden and Orchard

Mr. Thomas Greiner will continue to talk to the readers of FARM AND FIRESIDE about practical problems developed by investigation and experiment on his own farm. Orchard problems will be discussed by such men as Nat T. Frame of West Virginia, O. M. Taylor of New York, A. J. Rogers, Jr., of Michigan and E. O. Mueser of New York. Mrs. Anna B. Comstock, one of our most famous nature authorities, will tell the readers of FARM AND FIRESIDE just how insects affect the life on the farm, particularly fruit, and how these insects may be controlled or exterminated.

With the Editor

This series of heart-to-heart talks so characteristic of FARM AND FIRESIDE and its editor, Herbert Quick, will be continued this next year. When Mr. Quick is not here at the office or on his own farm, he is much of the time traveling over the country studying farm conditions and picking up points that are of importance to our readers. This gives Mr. Quick a particularly broad grasp of problems and questions connected with the farmer and his work, the farmer's wife and her work, the farmer's children and their education and development.



HERBERT QUICK, EDITOR FARM AND FIRESIDE

problems are considered, comes to us this year with a series of intensely practical articles on the common diseases of farm animals, and how to cure them. Dr. Alexander's years of practical experience and investigation qualify him to write with authority on this subject. Every reader of FARM AND FIRESIDE who is interested in live stock will derive profit from these articles. We will also have numerous contributions for this Department from other renowned authorities and experts, including Paul Brown of South Dakota, David Buffum of Rhode Island, Professor W. C. Coffey of Illinois, Professor William Dietrich of Illinois, Professor Dan T. Gray of Alabama, Frank Kleinheinz of Wisconsin and Professor E. A. Trowbridge of Missouri. We realize that an important part of all live-stock husbandry is to produce money, to derive profit from the sale of milk, cream, butter, and the sale of farm animals, including sheep, cattle, horses, mules, etc. This Live Stock and Dairy Department would alone justify a much larger subscription price for the paper.

Crops and Soils

No more vital problem confronts the farmer of to-day than the question of fertilizers. Even in new States the question of soils is of paramount importance. FARM AND FIRESIDE is equipped to handle this subject in a masterly way. We will show the men who are trying to solve this problem only the things that can be done profitably. Of course the question of fertilizer can only be considered in its relation to crops. Each issue will also contain a number of topics on crops, their planting, care and value.

Poultry

Mr. Fred Grundy, who is so well known to FARM AND FIRESIDE readers, will discuss those phases of poultry culture in which he is so intensely interested. His articles will be full of dollar-making suggestions. Dr. Raymond Pearl of the Maine Experiment Station has consented to tell the readers of FARM AND FIRESIDE his latest discoveries about egg-production, facts that have never heretofore been known. Watch for these articles. In addition we intend to tell you about some noteworthy egg-producing contests that have been held in Missouri and Connecticut. These contests have brought forth some startling facts, truths about poultry and egg-production that will help a lot in solving the problems of poultry-raising.

Live Stock and Dairy

Dr. A. S. Alexander, whose name is a household word wherever live-stock

Many More Big Special Feature Articles

Every big issue of FARM AND FIRESIDE will contain a number of big special feature articles. To the person who wishes to keep in touch with the march of progress in agriculture, a single one of these feature articles will be worth many times the cost of a year's subscription. No larger, more interesting or vital problem exists anywhere than in the farmer's field. The biggest and brainiest men of our country realize this, and are directing their minds to solving the problems that confront the farmer. No section of our country will be slighted in these articles. They will interest and appeal to the east, west, north and south. In addition will be our Farm Notes department containing articles on road construction, farm buildings and farm operations; The Headwork Shop, with its wealth of information on contrivances, machinery, hints and devices that are money-savers.

Farmers' Lobby

Things are going to be mighty interesting down in Washington, D. C., this next year. It seems probable that we are on the eve of the most important period in the political history of this country. A wide diversity of bills will be brought before the next session of Congress. Mr. Judson C. Welliver, who has charge of our Farmers' Lobby, will be right in the center of every political discussion that in any way concerns the agricultural interests. Mr. Welliver is himself a farmer. More than this, he is one of the keenest political students of the day. He knows men and measures. He is a man who cannot be deceived by even the most plausible politicians. FARM AND FIRESIDE readers will know just what Congressmen and Senators are honest representatives of agriculture. By rallying to the

support of this Lobby, inestimable good can be accomplished for the farm people and for agricultural interests.

The Household

Last year our Irish crochet and knitting instructions were immensely popular. We're going to have more of them than ever, this year, besides embroidery, flet and Venetian lace-making, knitting and handicraft articles. Everything new and useful in household decoration, sanitation and recipes for all sorts of economical, unique and elaborate methods of preparing food are scheduled for coming issues. Miss Grace Margaret Gould, our fashion expert, will show what is most becoming yet sensible in the new styles. Cousin Sally will write to her young cousins in our entertaining Children's Page. Altogether there will be a better and more helpful Fireside Section of our paper than ever before. And that's a pretty big promise, isn't it?

Another Fine Serial Story

Our new serial story is by W. T. Nichols and begins in the next issue. We believe it to be the most fascinating story ever published by us. This story, which will excite both laughter and tears, is entitled "The Adventures of a Beneficiary." The story concerns the adventures of a young man, Emery Wright by name, who by the provisions of an unusual will is compelled to take up a life entirely strange to him. His feuds as well as his love affairs are most thrilling. This story will long be remembered by our readers. It is full of interesting, thrilling incidents and will be illustrated by W. C. Nims.

FARM AND FIRESIDE—The National Farm Paper



A Thanksgiving Word Study

By John Clark Hill

NEARLY all words yield rich significances when we know their history. Emerson says, "Words are fossil poetry." They were all originally pictures, and the spoken word brought the picture to mind. The earliest literature of any nation is its poetry.

It is related that a geologist on one of our government surveys in the West once cracked open a geode, and found inside a mass of beautiful crystals in the form of a cross. This was one of the accidents of unconscious matter. It gives us a suggestion of the riches of beauty there is hidden in the rough exterior of some words that, in their ordinary appearance, are as uninteresting as a mathematical symbol.

Thanksgiving is a word that to many minds to-day suggests nothing more than a holiday with a big dinner and a football-game. This is not confined to the classes that are ignorant. It is permeating the whole fabric of society to such a degree that the original purpose of the day is in danger of becoming utterly obscured, and the religious character of Thanksgiving Day becoming a mere empty form.

Thank is really the old form of the past tense of the verb to think. The same change is seen in sink and sank, drink and drank. Think by the same process gives thank. Thanksgiving, then, really means giving thought, thinking, meditating. Thankfulness is thoughtfulness. That this was the thought in the mind of the Hebrew writers we can see from the forms of the Thanksgiving and Hallelujah Psalms. These recount Jehovah's mercies. The natural inference is that when a man sees a list of God's blessings before him he will make the thank-offering, which was the measure of the depth of his appreciation, his thoughtfulness, of the blessings received.

The Hebrews had several words which we render in English by thanks and praise. To our translators they seemed at times interchangeable, but they are different. Take the common Hebrew word for praise, *hallel*. Hallelujah is really three words in one, and means praise ye Jehovah. *Hallel* is almost an equivalent for our word hurrah, and so when the Salvation Army shout "Hurrah for Jesus" they are perfectly justified on etymological grounds. We know what it is to shout hurrahs. That's what thanksgiving meant to a Hebrew.

The other word they used was derived from the word for hand, the name of the smallest Hebrew letter, the *yod*, or jot, as it is called in the New Testament. The Orientals use the hand in a great many significant ways unknown to us. A mistress can direct a servant at the table almost altogether by the movements of her hand. Hence it is a word that conveys a great many ideas in varied forms. For instance, the word used for consecration, implying that to consecrate was not merely to utter a form of words, but to fill the hand with holy loving deeds.

When a Hebrew received a favor, he would acknowledge it by the outstretched hand, and hence the word to stretch out the hand came to mean an acknowledgment or a confession, and that is really what our think and thank mean. The list of blessings is made out, and we with gratitude acknowledge them, confess that we have received them from God.

It was the same in the language of the Greeks. Their word for confess, in an intensified form, is the one translated thanks. So that the basal idea evidently is that of our Anglo-Saxon words think and thank.

But the Greeks had another word, the commoner one. It is that from which we get our word grace. This is a word of long and honorable lineage. Away back in the classic days of India when the Sanskrit was the vernacular, the most perfect language, this word had its origin. When their poetic souls watched the passage of the sun across the sky, in his never-failing quiet movement, they pictured him riding in a chariot drawn by the most beautiful horses. These they called *gratz*. The same picture was transported to Greece, and there the word was softened into *charis*, and it came to mean beauty in movement and form, and, ultimately, the beauty of mind and soul from which beautiful deeds are inspired. In Italy the word became *gratia*. In modern Latin tongues it is *gracia*, and from this

we have our English word grace, which partakes somewhat of the vigor of the original Sanskrit *gratz*.

It came to mean, in Greece, favor and love, and it was taken by Paul and made a Christian word.

The early Christians regarded partaking the sacrament as the highest expression of thanksgiving, the acknowledgment of God's grace, and they gave it the name of eucharist; that is, the thanksgiving. They prefixed to the word for grace, a particle that intensifies the meaning. It is the thank-thanksgiving, a thanking with thanks.

We "say grace" at our meals, that is an old usage of the word grace where we now use thanks. To the early Christian, then, the thankful heart was the one that met grace with grace, and just as with the Hebrew no thanks-saying was regarded as meaning anything unless there was the thank-offering, so with us there ought to be the material expression, or it is a mere empty word.

When we join the "giving" with the "thanks" we make a real thanksgiving.

Running for Office

By William J. Burtscher

Give diligence to make your calling and election sure.—2 Peter 1, 10.

WE ARE candidates for election to the office of Kingship and Priesthood in the Kingdom of Heaven, and we are making a race after the manner of the man running for governor or president.

The Nomination

With that the race begins. The Lord himself nominates us, and we ourselves second our own nomination by accepting the terms upon which we are to run. All men are nominated, or called, but all men do not second the nomination—thus it is that they fail to make their calling sure. The next thing to be considered is

The Platform

Plank One is faith. That equals patriotism. The candidate must have faith in himself, his party and in his country.

Plank Two is virtue. That means an interest in such conditions of commercialism and society as will make it possible for men to build manhood, and for every working woman to lead a chaste life if she wants to. This plank strikes at the white-slave traffic. It is the Woman Suffrage plank of our platform.

Plank Three is knowledge. That means an interest in our school system—that we will work for better playgrounds, better sanitary conditions, better pay for teachers, better morals for some of our teachers—and cheaper books.

Plank Four is temperance. This is the plank around which the Prohibition Party has built its platform.

Plank Five is patience. Patience is the quality of calmly enduring. That quality enables men to control themselves. They will not steal, or lie, or murder. This plank means an interest in law and order.

Plank Six is godliness. This means an interest in every movement which has for its object less desecration of the Sabbath—better churches and better salaries for some of our ministers.

Plank Seven is brotherly kindness. That means belief in the brotherhood of man and the Fatherhood of God; it means consideration for the working man. It is the labor plank of our platform.

Plank Eight is charity. That means that we will do all we can for people who are poor, and will do all we can to keep others from becoming poor. This is the plank around which the Socialist Party has built its platform.

After the platform come

The Promises

The candidate in the political race makes many promises to his friends. He promises postmasterships, janitorships, and the like. As he cannot deliver these if he is not elected, his friends become active to make his election sure. In our race there are promises also, but the order is reversed. We, the candidates, do not make them. The Lord makes the promises to us. There are 6,300 promises in the Bible—one thousand for every day in the week, and a few over for Sunday.

One of these promises assures us that if we do right our land shall yield her fruit, we shall eat our fill and we shall dwell upon our land in safety. This is a threefold promise that is being fulfilled

right along, for isn't our land yielding more fruit than ever before, and when have we ever gone hungry, or when, in recent years, has there been danger to our property or our lives?

The Election

With that the race is finished. Our election day is the great judgment day.

There will be voting, of course. The world will vote for us, or against us, and will vote conscientiously and give a reason for its position. Our neighbors will vote. Therefore, make friends among your neighbors now. Our own conscience will vote. Christ will vote—and He may hold in His hand the balance of power.

If we are defeated, that will settle it—we shall never have the privilege of running a second time.

If we succeed in making our election sure, we shall have the grand privilege of occupying our office more than any four years—or six years. The promise is that there shall be no night there and they shall reign forever. What a promise that is! The reigning shall be continuous, without even having to stop for night.

And the encouraging thing for each one of us is that we can make our election sure—and we don't have to buy votes, either. All we need to give is diligence. Diligence is the opposite of negligence. It means that we will give a steady application to our platform and to the promises. And, too, there will be enough offices to go around. There will be an office for every candidate.

Whether we make our election sure depends upon the kind of campaign work we do from the time of our nomination to the time of the election.

Giving One's Best

By Orin Edson Crooker

SIXTY years ago a young college student was sent to survey a tract of crown land in Nova Scotia. The whole district was very rocky and poor; the inhabitants were few and scattered. There was little likelihood that the lines he ran and the markers he set would ever be tested, but he devoted himself conscientiously to the task and completed it in a most painstaking manner. Forty years afterward gold was discovered in this district and fortunes depended upon the accuracy of his work. The government's most skilful experts were sent to re-survey the ground, but after spending some weeks in the field they reported that it was useless for them to continue farther. They found no variation between the young man's work and their own.

Men who employ help on a large scale know full well how little of the work for which they pay will pass such a test as this. The tendency everywhere is to slight the task in hand, especially if it is not done under the watchful eye of an overseer. And yet success lays its laurel crown upon the brow of him who gives his best, and not his poorest, to the world.

Give to the world the best you have,
And the best will come back to you.

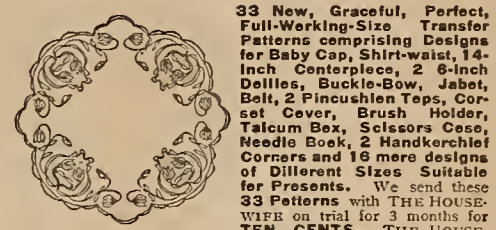
After all allowance is made, one gets out of life just about what one puts into it. If one labors diligently and conscientiously at his task, no matter what it is, the doing of the task will eventually pave the way to something better. The slovenly worker is seldom advanced, for the reason that he is doing about all the mischief where he is that his employer cares to assume. The man who can labor just as faithfully at his task when he is not working under the eye of his superior is the "jewel above price" in the great market-place of the world.

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Floral Christmas Gifts

A Charming Method of Remembering Friends

By Elizabeth Vaine

ALREADY the fall magazines are featuring Christmas gifts. Every year the problem of Christmas gifts becomes more unsatisfactory and complicated, and one is almost forced to the conclusion that it would be better to drop the custom entirely than to go on in the careless, unsatisfactory way which prevails; certainly one should at least adopt some definite principle of giving and strive to have one's gifts carry more of the spirit of love and Christmas cheer, and less that of the perfunctory gift, selected at the last moment on the principle that anything is good enough for the recipient.

Perhaps as sensible a rule as one could adopt would be to give according to one's own means with no regard to the means of the recipient. In this way no rich acquaintance would have occasion to sneer at the gift so far beyond one's means, nor one's less fortunate friends be hurt by a gift which seemed to emphasize their poverty.

All this, perhaps, may seem a far call from the subject of "bulbs for winter blooming," but when one considers how acceptable flowers always are to all classes of people, especially in the winter season, the possibilities in a few dozen of dry bulbs open up resources for Christmas gifts that are practically limitless.

A few years ago we had few receptacles available other than the common little red flower-pots and occasional hyacinth glasses; now one may find all sorts of dainty little Japanese and other earthen pots of varying sizes in which one or more bulbs may be potted off for mid-winter blooming. The little blue-and-white pots are especially desirable for any flower which looks well in combination with blue, such as blue, white, tinted white, yellow and pale pink hyacinths. The hyacinth, too, is one of the most easily forced bulbs. White, pink or yellow tulips, white, blue or yellow crocuses, blue scillas, lilies-of-the-valley, any and all of the narcissus and daffodil family, especially that sturdy old favorite, Von Sion, are charming. Then there are all sorts of pretty things in fern-dishes from the inexpensive blue-and-white ones, which may be had for a quarter up, to the more costly ones of hammered brass and metal. These low, broad dishes may be filled with crocus or with lily-of-the-valley pips, and when their period of bloom is past the dish may be used for its original purpose of ferns, and so remain a pleasant reminder of the original donor. In most of the stores may be found small pots of Mexican ware in black and brown or red and brown which are charming for the more warmly colored flowers, such as scarlet tulips, red hyacinths, and the like.

The labor of potting a quantity of bulbs is so slight that it may be looked upon as a pleasant diversion. Given a broad, roomy table at which to work, a box of good potting-soil, which may be good garden loam enriched with a little leaf mold, sharp sand and well-rotted manure, well mixed together, and an attractive assortment of pots and dishes, with an hour or two of time one may lay the foundation for generous Christmas giving and prepare for any unexpected calls on one's Christmas store, calls which are sure to materialize at the last moment.

In potting bulbs for winter blooming it should be borne in mind that those bulbs which flower latest in the spring should be potted as early as possible. Late tulips should not be used for forcing, and only a few of the early-flowering ones give good results. Couleur Cardinal, Cramoise Brilliant, La Reine, Mon Tresor, the Pottebakkers, Rose Luisante and Yellow Prince are all reliable single early tulips which can be depended upon for forcing well. The best early double tulips are Murillo, Imperator Rubrorum, the Turnsoils, Rose Blanch and Salvator Rosa.

All hyacinths, crocuses, scillas and narcissi force perfectly and may be planted

with perfect confidence. Of the narcissi the large, trumpet-flowered sorts are the most attractive; such varieties as Emperor,

water each pot thoroughly and place away in some dark, cool place convenient of access, to form roots and make the necessary growth for flowering. Many growers advocate the placing of the pot out-of-doors on a foundation of coal-ashes, and covering with ashes for a few weeks, or until they have had at least one good freeze, and where this method is practised an empty hotbed or cold-frame makes an excellent storage, but my experience has been that this is unnecessary, almost any cool, dark place answering every purpose. A root-cellar is perhaps the most satisfactory place of all. Last winter my boxes of narcissi and crocuses were filled and set on a ledge in the root-cellar and not even shaded from the light until the shoots of the plants appeared above ground, when a piece of old carpet was thrown over them and no further attention given them until time to bring them up for blooming, and I never had finer blooms. More than this, a few bulbs left over were stuck into the ground around a banana-plant growing in a large pot, and these came on and bloomed at about the same time as those in the boxes, and I could see no difference in the quality of the blooms. So you will see that even a place for storing bulbs is not actually necessary, as, lacking all other conveniences, one may tuck a few bulbs away around the roots of some large plant, like palms, rubber-plants, or the like, and enjoy their blossoms at a minimum of time and trouble.

It is better for the amateur gardener to pot bulbs of hyacinths, crocuses, narcissi, daffodils, and the like, than to experiment with the more uncertain lilies-of-the-valley, tulips and the many miscellaneous bulbs offered by the florists, but when one has gained experience and confidence with these, then it will be found interesting to add these to the list of winter bloomers. Bermuda lilies are so beautiful that one may well risk failure and attempt a half-dozen bulbs of these. These bulbs require somewhat different treatment and should be planted as early in the fall as possible, a single bulb to a four or six inch pot, according to the size of the bulb. Perfect drainage is necessary here, and about one fourth of the depth of the pot should be filled with broken charcoal and this covered with sphagnum moss. Fill the pot about half full of good compost, and place the bulb on this, placing a layer of sand under and around it. Cover to the tip of the bulb with earth, and as growth starts fill in the remainder of earth, leaving half an inch of space at the top for watering. Place the pots in a cool, dark place, but not a cold one, as these bulbs are much more sensitive to cold and damp than the hardy Dutch bulbs.

It is an advantage in growing this bulb to plunge the pots in boxes of sand.

If one will buy their lily-of-the-valley pips of the florists, they may undertake this lovely thing with confidence, but it is not worth while to bother with home-grown pips. The method is to place a bundle of twenty-five pips, which, by the way, will cost seventy-five cents, in a seven or eight inch pot, which may be filled with sand, moss or garden loam, leaving the tips of the pips about an inch above ground. Place out-of-doors in a sheltered position, and bring in a shady place, a sitting-room closet will do until the buds show, when they may be placed where they are to bloom. Watch all pots of bulbs and do not allow them to become dry, but they must not be overwatered, just a moist, growing soil.

When the shoots indicate a sufficiently advanced growth to warrant bringing up to the windows, it will be well to turn the ball of earth out on the hand to examine the root growth. If the ball is covered with roots, it will be in condition to perfect its bloom, but if few or no roots appear it must be returned to the dark to make the necessary growth. A knowledge of the plants and the application of great care in their culture means success.



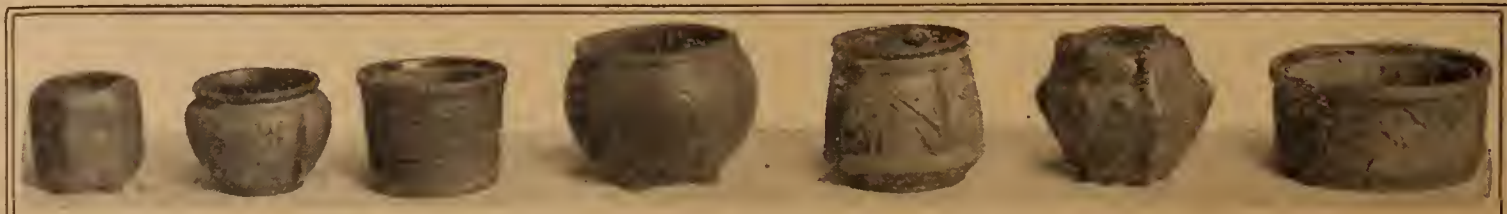
"Bermuda lilies are so beautiful"



"Lilies-of-the-valley in a dull-green pot"

boxes filled with blooming bulbs are charming. Fill the boxes two thirds full of soil, and set the bulbs rather close together on the surface, and cover with earth. Settle the earth about the bulbs by shaking and jarring the box or pot, rather than by pressing with the hand. Observe this rule in potting bulbs in pots. Never fill the pot full of earth and press the bulbs into it, as this packs the earth below it, just where it needs to be loose and open for the reception of the tender roots which are soon to appear.

When all the bulbs are potted and labeled with the name and date of potting,



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The Gift Club

Jean West
Secretary



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IT HAPPENED this way: One of our Gift Club girls wrote me a little letter a short time ago and said, "I want a diamond ring more than anything in the world, Miss West! How can I get it? Can't you help me?" Well, I sat right down and put on my thinking-cap. I thought and thought until finally I had it all planned out. Then I wrote my little friend and told her how she could get the lovely ring for which she longed. She is delighted and so will you be, too, when I tell you all about it.

There is a charm about a diamond that no other gem possesses, and this is quite apart from the fact that it is the most valuable of all precious stones. I believe that if diamonds were worth no more than cobblestones they would still be my favorite stones—perhaps because I was born in April and the diamond is my birth-stone.

It is fascinating to watch a diamond wink and gleam and shimmer and sparkle as you hold it up to the light. It seems a thing alive—brilliant and full of fire. The particular diamond ring that I have chosen for The Gift Club is absolutely flawless, pure blue-white and marvelously cut—a ring that you will treasure all your life, and that will grow more valuable as the years go on.

Every member of The Gift Club is entitled to take part in the splendid Diamond Ring Contest that I have arranged. This means new members as well as old. If you join the Club this month, in November, you will stand a fine chance of winning this exquisite ring. The contest ends the last day of December, so you'd better hurry and join the Club at once!

It's just the simplest thing in the world to join The Gift Club. There are no dues whatever and absolutely no expenses. We are just a big, jolly Club of FARM AND FIRESIDE girls and women and mothers, and we are all earning through the Club many of the little luxuries that are so hard to wring out of the family income. The one idea and object of the Club is to be of service to our members. Through The Gift Club you can earn dainty things that will make your home attractive—beautiful silver for the table, snowy damask, lovely little clocks, exquisite toilet-sets and the prettiest jewelry that you ever saw! And dozens of valuable gifts, besides!

You see, instead of paying you in money for the work that you do in The Gift Club, we pay you in the actual things that you would buy with the money. We can buy things at wholesale at very much lower prices than you could get them, and so we save our Club girls many dollars.

Now do let me tell you all about our great plans, including the Diamond Ring Contest. You'll be intensely interested. Thousands of FARM AND FIRESIDE girls have joined so far, and we want you, too. A line on a postal will bring a prompt reply and will not commit you to a thing if you do not care to join. Send at once for our Gift Club booklet.

Jean West

Secretary, The Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.

Sparks, Gas and Other Light Reading

Quicker

"WHY do you consider women superior to men in intelligence?"
"A bald-headed man buys hair-restorer by the quart, doesn't he?"
"Er—yes."
"Well, a woman doesn't waste time on hair-restorers; she buys hair."—*McCall's*.

The Trouble

"BY JOVE, I left my purse under my pillow!"
"Oh, well, your servant is honest, isn't she?"
"That's just it. She'll take it to my wife."—*Boston Post*.

A Reason

JONAH entered the whale. "This is the original water-wagon!" he exclaimed. Herewith none wondered that he remained aboard only three days.—*Philadelphia Press*.

Unexampled Courage

HE WAS the small son of a bishop, and his mother was teaching him the meaning of courage.
"Supposing," she said, "there were twelve boys in one bedroom, and eleven got into bed at once, while the other knelt down to say his prayers, that boy would show true courage."
"Oh," said the young hopeful, "I know something that would be more courageous than that! Supposing there were twelve bishops in one bedroom, and one got into bed without saying his prayers!"—*Truth Seeker*.

Spinsterian English



AT A little store in a New England town which had advertised a "female bicycle" for sale, I inquired for shirt-waist silk. The woman merchant answered with regret that she "only kept short lengths for frontages." I then asked for corsets. She looked at me thoughtfully, and then suggested gently, "you'll have to tell me your circumference."—*Mary Starbuck*.

The Real Saver

MRS. BROMIDE (discussing child-training)—"A stitch in time saves nine."
MRS. SULPHITE (grimly)—"A switch in time saved mine."—*Gertrude Lambert*.

Woodrow Wilson as Lexicographer

THE American public speaker is not "heckled" by an audience as is his British cousin on the other side of the Atlantic, but the unexpected question is occasionally to be reckoned with. At such a moment ready wit is all that can save the day. Personal integrity, intellectual attainments and a righteous cause avail little or nothing.

Governor Woodrow Wilson is a past master of repartee, as he proved a score of times during his recent "stumping" tour, though never more effectively than in the South Jersey hamlet of Sea Isle. He had just referred to himself as "a political optimist," when someone called out, "And what's that?"

Instantly came the answer: "A political optimist, my friend, is a fellow who can make sweet pink lemonade out of the bitter yellow fruit which his opponents hand him."

On election day Sea Isle went strong for Wilson.—*Lippincott's*.

How the Fashion Began

ADAM and Eve were selecting fig-leaves. "Oh, Adam," squealed Eve, sighting a leaf upon which a worm had feasted, "if here isn't one of those peek-a-boos I've heard so much about!"—*Gertrude Lambert*.

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Thanksgiving in the Ozarks

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With the Editor



Y LITTLE disquisition on the relation between the price of land and the cost of living brought out a splendid lot of replies and some very acute comments. Mr. Eugene Kelly of Eugene, Missouri, thinks that the land which is planted to tobacco and to grain that is used in brewing and distilling is worse than wasted. He tells of the depressing sight he witnessed in traveling through Kentucky, where all the land—or most of it—which was not planted in grains to keep the big distilleries going was in tobacco. It may be of interest to this big family circle to know in this connection that Professor King, in his wonderful book on the farmers of the Far East ("Farmers of Forty Centuries"), applies Mr. Kelly's thought to the problem of food-supply in China, and expressed great regret that much land is still planted to poppies from which opium is derived, instead of being put into food crops. He rejoiced in the work the Chinese government is doing in stamping out opium-growing, but was sorry to see tobacco-growing taking its place.

But Mr. C. C. Alden of Camby, Indiana, would certainly oppose any plan which would throw a greater supply of farm products on the market. Commenting on my vision of the whole nation tilled by such farmers as that Nebraska man who grows so much on his twenty-one-acre farm, he says:

Just so, Brother Quick, but would you undertake to guarantee that when all that great surplus arrived at the markets it would bring prices which would enable all these industrious farmers to pay taxes and doctor's bills, build barns and granaries, educate their families, provide for the proverbial rainy day and make things comfortable about the house and farm?

I certainly would not guarantee anything of the kind. The worst thing which could happen to the farmers would be to have their products suddenly increased to the maximum possible. The thing needed to go along with increase in production is a perfected system of distribution. As Mr. Kelly observes, there is no hope—he says "danger," but I prefer to say "hope"—that good farming will become so universal as to break the railways' backs with tonnage and ruin the farmers by glutting the markets.

Mr. Geo. H. Smith of El Cajon, California, has still another point of view. He is so sanely old-fashioned that I must give him room according to his strength.

WAY back in the last years of the sixties a friend of mine married and took his bride into Nebraska and located a homestead of one hundred and sixty acres near Fremont. He remained and proved up title to the land, then traded it for a team of mules and a wagon, and with his bride drove back to Michigan. I asked him why he came back to Michigan and left such a good prospect, and he said he wouldn't live in Nebraska if he could own all the land in sight.

And now Mr. Bookwalter owns 60,000 to 70,000 acres of that land, and the man who took up the homestead hasn't any farm, and Arnold Martin, who supports his family and lays up money on twenty-one acres, does it on this same land. I one day found myself seated by a woman in a railroad train. She was going from the city to a somewhat distant country village where her parents lived. She was employed in the city waiting on the table in a hotel. She was about twenty-five or twenty-six years of age, tall, strong, energetic and capable. She had a best fellow.

They were to be married as soon as they could get enough to buy furniture and make a proper start.

I suggested that it would be better to buy a chair or two and eat off a dry-goods box for a table as a start, providing she was sure he was the right fellow. She assured me that was the way her mother and father started out, but it would never do in these times. How is that for an explanation of the trouble of the times? It is the disposition to save that lays the foundation for a fortune, and not altogether the ability to earn.

Your correspondent, Mrs. Kohler, speaks of the young man and the purchase price of land as it is selling nowadays. No doubt she is thinking of the sixty or seventy thousand acres which Mr. Bookwalter has in Nebraska. I spoke of the young man who went in there and quit. I have in mind another

who went in about the same year and stayed. He added to his acres till he now has 640 in one farm, worth \$125 per acre. But there are cheap lands just north of you. In Michigan are lands on which have grown maple, elm, birch and basswood timber. The timber has been taken off, and the land lies as cut-over land. The timber is taken, the stumps decayed, and land in some places grown up to undergrowth which is not hard to clear. The soil is good. Towns are built. Water is of the best, and there is no malaria or fever or ague.

On the menu of the best hotels in Buffalo, Gaylord potatoes have been specially mentioned. Now let us consider what that girl and her best fellow could have done on Otsego County land. The land would cost five to ten dollars. To fit it for a crop would cost fifteen dollars either in work or money, which would make the land cost \$25 per acre. Other expenses which would appear are approximately: plowing, per acre, \$1.75; harrowing and marking, \$1.00; 7 bushels seed, @ 30c, \$2.10; planting by hand, \$1.00; cultivating and bugging, \$2.50; digging by hand, \$8.00; making an expense of \$16.35. Many say they can do it for \$14.00. Potatoes yield 100 to 300 bushels per acre. The average, if not particularly well cultivated, will be 150 bushels per acre. Year for year, one can count on getting thirty cents per bushel, which is \$45.00; the haul to market would cost something; if not far, it would bring up the cost per acre to \$20.00, which would, after paying wages, leave, per acre, a margin of \$25. After potatoes, oats. This crop does not do well and will yield ordinarily twenty to twenty-five bushels. The next crop will be clover-seed, with a yield of five to eight bushels, at four to ten dollars per bushel. The boy and girl who are willing to dig as our fathers did can make it yet, and some do.

Of course, if the young people should rush to those cheap lands and rough it through, it might tend to make living cheaper through greater production. And Mr. Kelly can tell Mr. Smith what that means—and there you are!

THERE is a SUBSCRIPTION BLANK enclosed in this issue for your convenience in accepting one of the Special Holiday Offers on Pages 16 and 17. Even though your own subscription does not expire for some time, it will pay you to accept one of these offers while you have the chance. Better still, get up a club of subscribers for us in your neighborhood and win a fine premium. Please take hold of this matter right away. The offers and premiums are for a limited time only, and early action is necessary.

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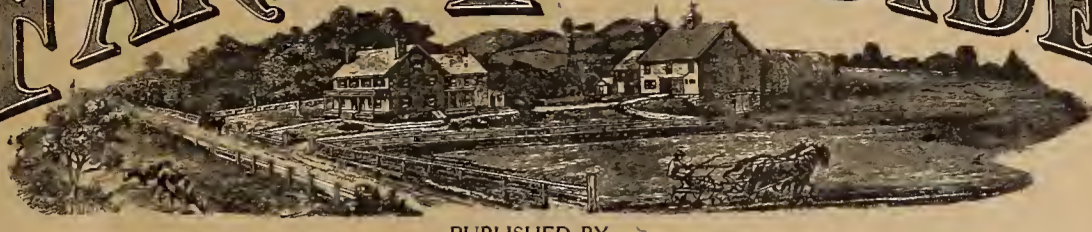
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In the last five years the consumption of commercial ice-cream is said to have doubled. Ice-cream is now recognized as a food as well as a confection.

Veal or Sirloin?

THE high cost of living is usually exemplified by the price of sirloin steak. There seems to be a wide-spread popular notion that a good steer consists of seventeen hundred pounds of sirloin, encased in a valuable hide, and that the farmer gets thirty-five cents a pound for him.

Other people insist that the high price of beef is accounted for by the slaughter of calves. These critics of the farmer go so far, some of them, as to advocate laws forbidding the slaughter of calves, or even their shipment. Perhaps these two kinds of critics might be allowed to answer each other. If the farmer is getting thirty-five cents a pound for his steers, why does he kill the calves which, if matured, would become steers?

To those who like to figure these things out, and they are very important things to all of us, let us suppose that we have a calf and by feeding him for five weeks on whole milk to the value of six dollars can sell him for \$18 as veal. This leaves a profit on the veal, not counting labor, of \$12.

Now let us see what we should make if we let him become a steer, from which could be cut the baby-beef sirloin that makes living high. We will take \$26 as the cost of his feed the first year, and \$52 for the second year. As a two-year-old weighing 1,200 pounds, he will "stand us" \$78 and bring, say, \$96. Here is a profit of \$18 on the two-year-old and of \$12 on the veal. The farmer will have had the pleasure of the animal's society for two years, and \$6 more than he could have taken for the calf.

Some holes can be poked in these figures—but can they be quite disposed of? Let us hear from those who think the calf should be reprieved. The farmer cannot be expected to keep steers for the sole purpose of beating down the price of his own property—even though he might thereby decrease to some extent the cost of city people's living.

Expensive Reclamation

OUR stump and cut-over lands present one of our greatest national problems. Mr. Thompson, of the Bureau of Plant Industry, after an extended investigation, concludes that a man without capital cannot hope to reclaim enough land of the character found in the cut-over regions of western Washington to make a farm upon which he can support a family. The land easiest cleared costs \$50 an acre for reclamation, and the expense runs up to \$150 an acre where the clearing is hardest. The best method seems to involve the use of a donkey-engine in connection with dynamite, charring and burning. But no method would seem to be of much interest to the prospective home-maker under the circumstances.

There are millions of square miles of land in the world which have great agricultural possibilities, save for the cost of reclamation. The valley of the Amazon in South America possesses the greatest area of such land found in a body. The world will sometime need the crops from these fertile acres. If private capital cannot cope with the difficulties, the governments must do so.

The State of Washington could float bonds for the reclamation of these lands at four per cent. This would place on the lands an average charge of perhaps four dollars an acre—not counting anything for the present owners. Private capital would not be tempted into the operation at the figures here presented.

Slums in the Country

COUNTRY people have looked upon the city slum as a terrible place in which people are jammed together in indecency and disease by the dreadful pressure of city conditions, and as a thing from which country life is exempt. We have been correct as to the dreadfulness of the city slum; but we must prepare ourselves for the fighting of conditions quite as bad in some rural neighborhoods.

A group of people has recently been brought to public attention in the scrub-oak barrens of New Jersey, between the great cities of New York and Philadelphia. They live in ignorance and squalor, in windowless huts covered, some of them, with straw and hidden from sight like dens in trees. Many of them are low in intelligence, and have reverted to a condition of barbarism.

In Virginia a similar rural slum has been noted and described. The people are absolutely inferior to their neighbors. They live on poor land and have almost given up work. Their hovels are "pitifully small" and are crowded to an extent not surpassed by the most unhealthful city tenements. They are described as more degenerate than the city slum-dwellers.

In the New Jersey group there are said to be about two hundred people, though there were formerly many more. The Virginia group is also numerous. In both cases the ignorance and immorality is reported as shocking in the extreme, and the whole situation seems somewhat below healthy savagery.

Country people everywhere may well look about them for the first beginnings of such plague-spots. The cause is long-continued and localized poverty and lack of education. These causes may be removed. Once established, such a center of social disease is hard to remove, for these poor people multiply rapidly in their darkness and despair.

Is there a rural slum, or the beginning of one, in your neighborhood? Look about you and see. It may be only one or two families. And if it exists, can you justify letting it alone and allowing it to spread?

Copper salts have been used to "green" certain food-stuffs, such as canned peas, etc., but Secretary Wilson has declared this practice to be against law. He promises punishment for the recurrence of the practice.

Uncle Sam is saying that he will punish the Elgin board of trade for the unjustifiable work they are doing in controlling and setting market prices on butter. The Elgin board is not a trust, but some of the work that they do may reasonably be questioned.

How to Promote Good Works

ALMOST every farmer gives something to good works. He contributes to the minister's salary. He donates something toward a good-roads movement. He drops his mite into all sorts of contribution-boxes. It is a part of the life of most men to give something to some cause which is not selfish. Christmas gifts and birthday presents call upon most of us.

In De Kalb County, Illinois, an organization of farmers—some hundreds of them—contributed to a fund to hire and equip a county agricultural adviser. It cost them from a dollar a head to as high as twenty-seven dollars. This gives them a high-class man with an automobile to do extra thinking for them.

A suggestion: Get together in your county and put into a pot a dollar to thirty dollars a head, according to your land-holdings and your farming operations—and don't be picayunish about the other fellow's contribution—so as to create a pot of, say, \$3,000 a year. Get the Bankers' Association to help. Arrange with the State, if possible, or the organization with the million-dollar fund, for help, and hire a county adviser. All these things the De Kalb County farmers did.

Agree with yourself and your wife that you will give to good works half the money you honestly think you make net out of the adviser. That is, deduct your one dollar, or thirty dollars, a year from what the county adviser profits you, and give the rest to sweet charity, or religion, or to whatever good cause you want to aid.

If you all do this, it will make your county the best for missionary solicitors in seven States. For it pays to have expert thinking done for you.

Who Wants an Index?

THE printed word is not as precious as it used to be. There was something sacred about paper and ink in the good old times when presses were slower and subscription prices higher. For all that, a great many of our subscribers feel that the twenty-six issues of FARM AND FIRESIDE which come for a year's subscription are too valuable to be thrown away. They really constitute a fine book which treats of a multitude of affairs of interest to the farmer and his wife. After a few years, the subscriber who saves FARM AND FIRESIDE will find himself in the possession of a handy encyclopedia of agriculture at a very small cost.

For the benefit of those who save the papers, we make, every year, a complete index. This will turn the year's numbers into a handy reference library. It is a very complete index, compiled by people who make a business of indexing. Though the printing and compiling cost us a good deal, we are glad to send it, with our compliments, to anyone who will write and ask for it.

A Virginia farmer wrote to the Missouri station, reporting that his cow was "drunk." He didn't think she really was, but he said so in his letter. When the case was investigated, it was found that she was actually intoxicated—drunk on silage that had not been kept as silage should be preserved.



CHARLES E. THORNE, whom we here show, was once editor of FARM AND FIRESIDE. When he left many years ago to take up definite lines of investigational work with the Ohio Experiment Station, he was in touch with the needs of farmers everywhere, but he proposed to take care of Ohio farmers first. And he did. In doing that, however, he has laid the foundations for better farming in many other States. Doctor Thorne believes now, after his many years of work, that we, as farmers, do not place enough importance on phosphorus as an element to turn soils into crops and money. And he is able to tell why he so thinks. That makes his services for the readers of FARM AND FIRESIDE of very great value and we shall call upon him frequently.

Hardy W. Campbell, the "Dry-Farming" Missionary



Do your field crops look like this—

—or like this?

By Herbert Quick

I FIRST met Hardy W. Campbell in 1894. He was already preaching that crops could be grown over all that sub-humid West that is now going into dry farming. I became interested with him in the publication of a paper for the purpose of redeeming the "semi-arid" West from drought. The project subsisted on short-grass pickings for a year or more, and then quietly and unobtrusively died. Campbell, however, has lived to see his system of soil culture the hope of so many millions of acres that I shall not stop to make the computation. I mention these personal experiences as proof that I have been interested in dry farming for a long time.

Does it sound funny when it is said that our effort to redeem the semi-arid West from drought was exerted through a paper? Well, it sounded funnier then. It was suggested that water was the thing, and the only thing, that would do the trick. It was admitted on all sides that the region extending from Calgary, Alberta, to Brownsville, Texas, and some hundreds of miles wide, needed redeeming the worst way; "but, shucks!" said the wise ones, "you don't get the rain, and you can't grow crops!" And they proved it by deserted farms, towns half occupied, merchants bankrupt, land worthless, misery most acute. The buoyant hope of the settlers had been succeeded by a dumb despair. And the thing that was crushing them was drought.

I don't pretend to know what constitutes greatness—when I get close to men called great they seem so much like the rest of us. But it seems to me that the man who had the audacity to throw himself into the fight against this drought demon must have been great. And Campbell did that, and did it alone. As a boy he showed strong powers as an inventor, and his way of facing soil problems is that of the inventor, the innovator, the dreamer.

So, when the rich soil of South Dakota failed to grow crops, he set himself figuring over it, and after much calculation he came to believe that there had been plenty of rainfall to have matured a good crop, the very years he was burned out, if the plants had had the use of it.

What had become of it? It took no detective to answer that: the hot, dry winds had gobbled it up; the sparkling, bright sun had drawn it into the air. Wherever you may live in any climate with over fifteen inches of rainfall, if you suffer from drought, it is probably from unnecessary excessive evaporation, and not from lack of rain.

His Inventions Were Practical

Now, intelligent farm readers will at once say that any fool could see that the thing with which to stop evaporation is the harrow or the cultivator, and frequent, shallow cultivation. You have known that ever so long. Yes, but Campbell had a harder proposition than yours—you who live in the humid sections. He had hot winds to contend with. He had a light soil in most places—light, for one thing, because it was dry. For years he went up and down the land, practically a voice crying in the wilderness, sneered at by the "scientists," doubted by the government.

The "scientific" sneerers at Campbell now say that all the elements in his system are old. They are not; his sub-surface packer is a real discovery, and so is his system of holding the moisture of two seasons to mature one crop. But what of it if they are all old? He organized them into a system, and preached it. Most new things are made up of combinations of old things. None of the "scientists" had a peep of hope for the arid West when Campbell began his ministry. Into the deep "scientific" gloom he shot the first ray of light with his "Campbell System" of soil-culture. And these things he told the people of this burnt-out empire to do, promising that if they did them faithfully, they could grow crops.

Plow deep: This will destroy the old runways which the water has made and tend to hold the moisture in the furrow-slice. (He doesn't insist on deep plowing always and everywhere, however.)

Pack the ground at the bottom of the furrow-slice, and leave the surface loose. This will give an unbroken chain of soil-particles by which the ground-water can climb, from one particle to the next above, to the loose soil on the surface, which will stop its climbing and hold it from evaporation, and allow the roots to seize upon it. So pack the sub-surface the day it is plowed.

Cultivate often, but not more than about four inches deep. If it is corn or any hoed crop, cultivate it often enough to keep a mulch of dry earth on top all the time. A rain will destroy this mulch, so stir it as soon as possible after a rain. If it is only a little sprinkle, all the worse, for it will destroy your mulch without giving anything in return for the evaporation it sets up. If it is a bare plowed field, cultivate just the same. Harrow it after every rain until it freezes up; and if it doesn't rain, harrow it every ten days or so anyhow. Harrow the land as soon as it is dry enough after the

frost goes out—and repeat as needed until sown or planted. After planting or sowing, harrow above the seed to keep the earth mulch perfect. After the grain comes up, harrow that, too, to continue the mulch as long as possible.

In those days fifteen years or more ago Campbell expected, I think, that the real triumphs of his system would be in the growing of hoed or cultivated crops, though he attacked the small-grain problems with true optimism. He sowed wheat in drills eighteen inches apart, and hoed it with spring-tooth cultivators. I have seen wheat so planted which hid the earth and gave fair yields, but, on the whole, it was thought that the corn crop would be the one most benefited. Corn was cultivated from twelve to fifteen times per season with three-row spring-tooth machines. A man with a smart team could stir the surface of thirty acres a day. It has always seemed to me that this corn-growing system must come back, it has so many good points in economy and efficiency. Campbell built a three-row corn-drill, and the three-row spring-tooth cultivator, which the operator rode by straddling the middle row of the planter, guided accurately for all three rows, no matter how crooked they were.

Uncle Sam Not Among His Disciples

But after a while Campbell found that he could summer-fallow land one season, trapping and holding the rainfall with the earth mulch, and thus get two seasons' rain for one crop.

No agricultural innovation ever spread faster. Two years ago I traveled, perhaps, ten thousand miles in western Nebraska, Colorado, Wyoming, western South Dakota, western North Dakota, Montana, Manitoba, Saskatchewan and Alberta; and everywhere I found the summer tillage advocated by Campbell practised on an immense and increasing scale. The Government wasn't interested in the crank's scheme, the States weren't interested, and Campbell was "busted," with a family to support. But at last Campbell began to get converts. Of these, I suspect that Mr. E. L. Matthews of Minneapolis, then president of the Thorpe Elevator Company, not a very large concern, was the first of importance. He helped more, perhaps, in proportion to his real selfish interests than anyone else, and at a time when help was greatly needed. The first big interest enlisted was the Northern Pacific Railway, through the far-sightedness of Mr. J. W. Kendrick, then its general manager. Others who are entitled to much credit were Frank H. Peavey, the grain king; George W. Holdredge, of the B. & M. in Nebraska; George H. Heafford, of the C. M. & St. P., and an officer of the "Soo" Line, whose name I forget. These made it possible for Campbell to circulate about 10,000 of his papers from month to month, to travel and lecture, and, more important than all, to operate model farms at several points in North Dakota, South Dakota, Nebraska, Colorado and Kansas.

The thing that depressed the apostle of moisture conservation most was the fact that the Department of Agriculture at Washington was indifferent. I think that Secretary Wilson looked upon Campbell as a one-



The sub-surface packer has revolutionized dry-farming methods

ideal crank with an ax to grind, and got rid of him the best way he could—at first. Later, the Department made, perhaps, the greatest mistake of its history through its ignorance of soil physics and its distrust of the man who was trying to teach it. It suspected Campbell's honesty, and withdrew such measure of cooperation as it had grudgingly given.

And this is an interesting story. Mr. Campbell was desirous of having the Department test the moisture in fields tilled by his methods, and of land tilled according to ordinary methods. Through the influence of Mr. Kendrick and Mr. Holdredge, it was arranged to have tubes of soil sent to Washington for testing, from the Holdredge, Nebraska, "Campbell Model Farm." In July, 1894, the samples showed percentages of moisture

in the Campbell field and the others which, it seems to me, should have been followed up by sharp, strict research work. I do not believe, however, that anything has since been done in the way of accurate and systematic measurements of the moisture in the root beds of our ordinary field crops under semi-arid conditions and different systems of culture. The samples of soil submitted to the department contained water as shown in the following table:

DATE	INCHES RAINFALL	PERCENTAGE OF MOISTURE	
		Campbell's Field	Other Field
July 1	None	18.49	9.71
July 3	"	18.23	9.68
July 4	"	18.30	10.25
July 5	"	19.89	9.16
July 6	"	19.19	10.43
July 8	"	17.04	10.00
July 9	1/16	18.85	9.85
July 10	None	18.37	8.62
July 11	"	17.36	8.93
July 12	"	16.29	8.20

These results showed in the first third of a typical dry July a condition fatal to crops in the other field, but excellent for plant growth in Campbell's. A few days prior to this the test showed 17 1/4% of moisture in Campbell's field, and only 7 1/2% in the other. Then came a downpour of 5 1/2 inches of rain, immediately after which Campbell's field showed only 19%, while the other tested 25%. So these tests showed that Campbell's fields, in their upper two feet, were drier just after a heavy rain than the other, though wetter in dry weather.

Of course, in the light of our present knowledge, this does not astonish us in the least. Campbell was overjoyed. It was the first laboratory proof of his claims. But on the heels of his joy came the deepest humiliation of his life, perhaps, in a letter from the Department, which had made the tests, refusing to make more, and making it plain that those who made them believed Campbell to have tampered with the tubes, and to have endeavored to "fake" the Department!

Humiliated, shamed and sore to the heart, Campbell turned the letter over to either Kendrick or Holdredge, one of whom had selected the men to take the samples, and dropped the Department of Agriculture from his plans forever, I think.

More Cold Water from the Department

It is depressing to think that this great Department which has done so much for the farming interests of the land should have given this work of Campbell's nothing but disfavor. For this disfavor has continued to the present day. Two years ago several hundreds of delegates met at Billings, Montana, at the fourth International Dry-Farming Congress. Delegates were there from most parts of the United States, from Canada, from Mexico, from Argentina, from Russia, from Germany, from Austria-Hungary. It was the most enthusiastic of gatherings. There were dozens of farmers whose success in dry farming made them bubble over with joy. Mr. James J. Hill was there with a special train laden with delegates, and his addresses and those of his son Louis W. Hill and his lieutenants of the Hill railway system were features of the occasion. Campbell was there, too. And he overtopped every other figure at the convention in interest and in popularity. He is a poor speaker from the stump-speech standpoint, with a dry, uninteresting style, but when he addressed a farmers' institute in another part of the town the main congress was practically deserted.

Sitting in the audience were many department workers, some of whom heartily joined in the applause with which Campbell was greeted, but most of them sat silent and sneering. They urged that Campbell is not a scientist, that he had not invented anything, that all his ideas were old, that he has no ability to check up results, that he is unreliable and over-optimistic, that his summer-tillage scheme will ultimately ruin the soil, and a letter was read from Secretary Wilson calling upon the dry-farming congress to beware of the dangerous principles of Campbell.

I am not prejudiced against Secretary Wilson. I am prejudiced in his favor. I believe him to be one of the landmarks in American agriculture. But I am convinced that in his relations to Campbell and dry farming he and his department went wrong in the outset, and have never had the insight or the magnanimity to get right.

Australia heard of the Campbell system long ago, and being vastly interested in the matter of agriculture in arid regions, her governments addressed queries to our Department of Agriculture. They were answered by streams of cold water for the Campbell methods. It was suggested that selfish interests were booming the Campbell method—as they were, in fact—and that the Century Magazine, the World's Work and other high-class periodicals were to blame for publishing articles on the Campbell method. [CONCLUDED ON PAGE 19]

Making a Certainty Profitable Sales Methods



of the Fruit Crop Developed by Necessity

Team-Work in Fruit-Growing

By Florence L. Clark

A NEW YORK orchardist, in conversation with an Oregon fruit-grower at the National Apple Show last fall, said, "We don't have to smudge and spray our fruit in the East."

"We don't have to either, but we do," was the Oregonian's reply.

The answer was well put and brimful of suggestion, but it was not the truth. The western grower does have to smudge, does have to spray and does have to do a lot of other things which are just purely voluntary matters with the eastern growers. And because he has to an occasional hallelujah should be sung, since, necessity-driven, he is showing the world the way to better and better fruit, and the orchardist the golden road to trebled and quadrupled profits.

The American farmer, unlike the European, has been little cramped for room. He has had half a continent to spread in, and careless, broad-acred, "bonanza farming," the phrase is American-made, has come to be his natural bent. The painstaking, intensive farming he almost never assumes unless he has to. In the West, irrigation is providing a compelling price. Getting water onto the desert costs a lot of money. It makes high-priced land, and high-priced land demands big returns from every square rod. To get these big returns the best and most careful methods of culture are absolutely imperative.

There is another reason why the West has been driven to adopt new methods. The coast and intermountain region is yet too new to give a home market. The growers are dependent upon the East for buyers. This means a long haul, and long hauls are expensive. Only a product which will command a high price will pay the freight and leave a margin. For this reason, perhaps, even more than because of the high price of land, western growers have had to adopt new methods in producing as well as in selling fruit.

They are planting only the best looking, best eating and best keeping varieties, "commercials" as they call them. They are setting out only trees which have been inspected by experts and pronounced in perfect condition. They are working the soil day in and day out, cultivating clean to the last infinitesimal weed. They are spending thousands of dollars annually smudging in the spring, for frost, and spraying from blossoming-time till picking-day, for bugs. They are pruning their trees not only symmetrically, but also with a view to the strongest branches, the protection of the trunk from sunburn and the admission of sunlight to every portion of the tree that the fruit may color beautifully. They are thinning until each apple or pear or orange hangs by itself, with room to round out and color evenly. At harvest-time they are picking the fruit with greatest care from specially adapted picking-ladders and placing it, not dropping it, into patented canvas bags.

Shipments are in Car-Load Lots

After picking comes the getting ready for market. This demands fully as much attention as the growing did. An attractive package, it is generally conceded, adds to the value of any merchandise. The western growers have their own packing-houses, where trained packers do the sorting, grading and packing. All blemished fruit and all of any kind below a certain size are thrown into the cull heap. The remainder is sorted into uniform sizes and packed in exact rows in specially made, convenient-sized boxes. A new manner of machine nails on the cover, giving it a bulge to allow for shrinkage. The boxes are stamped "Extra," "Fancy" and "Choice," according to size of fruit. The number in each box is marked on it, and the grower's name or number.

After the fruit is boxed and taken to the association's shipping platforms, if the "pack" is O. K.'d, the grower's responsibility is at an end. Experienced, high-salaried salesmen attend to the shipping and selling for him. These men receive telegraphic reports from all parts of the country each morning. They have their agents in every large city. They know where the market is glutted and where there is a shortage and ship each day accordingly, always in car-load lots, for the western growers cannot afford to ship any other way. Indeed, that was the *raison d'être* of western fruit-growers' associations in the beginning. The Pacific Coast and Rocky Mountain orchardists were simply compelled to combine and ship together in order to secure the advantage of car-load freight rates.

Out of this forced cooperation in shipping has gradually come cooperation in buying supplies, in ways and means of improving growing methods and in building up a reputation for raising and putting on the market only a No. 1 fruit.

"The great secret of our success," a prominent grower in the Grand Valley, Colorado, said to me recently (Grand Valley apples have sold at \$15 a box in New York), "is team-work. There is the matter of smudging, for example. As long as only individuals here and there smudged, the cost was almost prohibitive, and only a part of the fruit was protected. The outer rows of trees in the orchards were bound to get caught. Now that we have nearly ninety per cent. of our orchards fitted with smudge-pots, at

a very moderate expenditure to each grower we can artificially raise the temperature of the whole valley.

"At smudging-times it is one long pull together. The head men of the association are in constant touch with the Weather Bureau, the telephone companies put on a lot of extra help, the growers have their pots full of oil and stand ready to light them at a moment's notice.

The Fruit is Carefully Inspected

"We have a field horticulturist and entomologist stationed here who spend their entire time in the orchards, studying conditions and keeping the growers informed when and how to spray and how to treat for blight, how to prune and thin and care for the trees. In order to set a high standard for our fruit in eastern markets, we have instituted rigid inspection, and *only flawless fruit, perfectly packed*, is allowed to leave the valley."

In October last year I came back to Iowa from a well-known fruit region in the West. Western apples at the time were going East by the hundreds of car-loads and selling at from \$1.25 to \$2.50 a box above the freight. One of the first things I heard on reaching Iowa was, "Never such an apple year as this. Thousands of bushels of apples are rotting on the ground because they are so plentiful you can't sell them."

"Can't sell them!" I exclaimed, thinking of those eastward-bound car-loads I had seen everywhere in the West. "Surely you can ship them if you can't market them at home."

"Ship them! Mr. B. tried it. Packed ten barrels and sent them to Chicago. He made ten cents a barrel after paying the freight."

I had occasion to be in that same Iowa town in January and to see at that time, only three months later,



These peaches will bear inspection

western apples selling at the stores at two for five and some of those apple-ridden farmers of October buying them.

Nine tenths of the scientific western growers of to-day were a few years ago on farms in the Middle West and East. Instead of giving right methods of fruit culture a trial at home, they have sold out and gone West to do it.

Jack Frost vs. Smudge-Pot

By Warren F. Wilcox

NO LONGER need the fruit-grower suffer a crop failure. No longer is fruit-production the gamble it used to be, for, with the intervention of science, neither frost, insect or disease can give the grower off years when he receives no income from his high-priced land.

Spraying and heating go hand in hand. Jack Frost is now driven back from the tender blossoms and fruit by a process of heating which is fast becoming popular. Scientific orchard-heating is a new thing, but a sure



Smudge-pots maintain the safe temperature

thing, and a 200-acre orchard can have its temperature raised ten to fifteen degrees with absolute certainty.

Along with irrigation, seed-testing, spraying, pruning, fertilizing and other scientific agricultural activities comes orchard-heating. Orchard-heating was first practised in California, although smudging, or the formation of a dense blanket of smoke over orchards, had been practised in Europe before. In 1908 some Grand Valley fruit-growers in Colorado practised orchard-heating with the burning of oil in simple pots of the lard-pail type, with the result that they saved their crop. Since then the fruit-growers of Colorado have saved annually four or five million dollars' worth of fruit. And not alone do the fruit-growers of Colorado fight the frost king, but fruit-growers in many States are doing the same thing. Growers of citrus fruits in California and Florida are using orchard-heaters, and manufacturers are filling orders from every section of the land.

Several types of heaters have been invented. Oil and coal are used for fuel. It is claimed by many that oil is the best all-around fuel. It lights easier. The heaters are placed throughout the orchard at regular intervals, one to a tree if the setting is from seventy-five to ninety trees per acre. If small heaters are used, double or treble the number. All moisture must be eliminated from the fuel used. The heaters are made ready with fuel beforehand.

When the temperature falls within a degree of the danger-point, the fires are started. If oil is used, make a torch of gas-pipe, and to light the oil throw on about a teaspoonful of gasolene. The ignition is immediate, and the generation of heat begins.

While the heater raises the temperature some, the real purpose is holding it against a fall. Under the most favorable conditions the heated zone has been held to a point of safety while the outside thermometer reached sixteen degrees. Eighteen and twenty degrees are easily carried through with safety. Conditions vary. A wind makes the work more difficult. A young orchard requires more heaters than an old one, and garden-truck twice as many.

A double row of pots on the outside is advisable, as the reinforcement gives the outside rows full protection against the air movement from the outside. The greatest care should be exercised in selecting and testing thermometers. Thermometers should be placed at least one to each five-acre tract and at a point level with the lowest fruit. One good instrument should be placed outside the orchard.

Errors to Avoid

Some growers do not light their fires soon enough and some do not burn late enough. Each grower when calculating on the heat needed should take into consideration the kind of fuel used, the kind of heaters and many other similar things. The greatest amount of heat will be required from daylight up to the time the temperature is normally safe. Fires should not be extinguished until the normal temperature is thirty-two degrees.

Many things are to be taken into consideration in orchard-heating; the vitality of the trees, stage of advancement of bloom, soil conditions with reference to moisture and temperature, clean cultivation or cover crops, humidity of the atmosphere, general location of the orchard, whether operations are assisted by neighborhood heating and amount of foliage on trees.

It is indeed a thrilling fight, this battle with Jack Frost, who has for ages ruled unmolested, cutting down the fruit yields at will and rendering large orchards unprofitable when they otherwise would repay handsome profits. Now, when the cold gets dangerous, the rancher and his assistants get busy. It is a strenuous campaign, and in large fruit districts the citizens volunteer, everybody coming out and assisting in the vigil of lighting, caring for and replenishing the thousands of heaters scattered through the orchards.

The first cost of installation often appals the prospective purchaser, but, in view of the service, the original outlay sinks into insignificance. What is the use of cultivating, irrigating, fertilizing, pruning and spraying if the crop is to be destroyed in an hour or two of frost?

Large fruit-growers in districts where frost is at all liable to work damage should investigate the orchard-heating scheme. They will soon be able to secure all the facts they desire from manufacturers of heaters as to initial cost and subsequent cost of fuel.

Although scientific orchard-heating is but a few years old, it has demonstrated its value; the gallon-lard-pail type of pots used five years ago have been discarded, and equipments more powerful and effective and economical placed in operation.

The new heaters are equipped with covers or drafts so that the heat can be regulated and the greatest heat secured toward morning, when the cold is most disastrous. It appears strange that orchard-heating was not put to a practical use years ago. To-day it is a practical thing, and as it is studied more and practised more it will become an exact science until Jack Frost shall be denied his freedom in the orchards during bloom-time, and his devastations which heretofore have amounted to millions of dollars annually will be reduced to a minimum.

SCOFFERS

Often Make the Staunchest Converts

The man who scoffs at an idea or doctrine which he does not fully understand has at least the courage to show where he stands.

The gospel of Health has many converts who formerly laughed at the idea that coffee and tea, for example, ever hurt anyone. Upon looking into the matter seriously, often at the suggestion of a friend, such persons have found that Postum and a friend's advice have been their salvation.

"My sister was employed in an eastern city where she had to do calculating," writes an Okla. girl. "She suffered with headache until she was almost unfitted for duty.

"Her landlady persuaded her to quit coffee and use Postum and in a few days she was entirely free from headache." (Tea is just as injurious as coffee because it contains *caffeine*, the same drug found in coffee.) "She told her employer about it, and on trying it, he had the same experience.

"My father and I have both suffered much from nervous headache since I can remember, but we scoffed at the idea advanced by my sister, that coffee was the cause of our trouble.

"However, we finally quit coffee and began using Postum. Father has had but one headache now in four years, due to a severe cold, and I have lost my headaches and sour stomach which I am now convinced came from coffee.

"A cup of good hot Postum is satisfying to me when I do not care to eat a meal. Circumstances caused me to locate in a new country and I feared I would not be able to get my favorite drink, Postum, but I was relieved to find that a full supply is kept here with a heavy demand for it." Name given by Postum Co., Battle Creek, Mich.

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A Novel Mushroom-Farm

By George H. Dacy

A KANSAS CITY minister, Dr. A. F. Osborn, derives considerable recreation and great profit from his home-made mushroom-farm. At present he is daily gathering from eighty to one hundred pounds of these delicacies and selling them to local clubs, hotels and restaurants at sixty cents per pound, his gross daily income from his wage-earning pastime varying from \$40 to \$60. This side-line farmer has been delving in mushroom culture and experimenting with the plants for the past six years, but his work was greatly handicapped on account of lack of space until he located an old street-car tunnel, which had an area of ten thousand square feet, which was adapted to the culture of this novel crop. By installing four tiers of shelves the length of the tunnel, this grower increased the mushroom-bed area to one hundred thousand square feet subsequent to his leasing the deserted tunnel from the car company that owned it.

Although there is an excellent opportunity to gain attractive profits in the mushroom-growing business, it is not the simplest thing in the world to successfully mature and market a crop of this vegetable de luxe. This peculiar plant will grow only under certain conditions, such as an equable temperature ranging between fifty and sixty degrees Fahrenheit, plenty of ventilation, adequate moisture and in a sheltered place which is protected against winds, drafts and sunshine. Severe heat, especially, spells sure death to the young plants, as it kills the spawn, while extreme cold causes the beds to become dormant. Even under judicious management, it often happens that the mushroom-beds are maintained at too high a temperature, with the result that the spawn germinate too soon, and the yield and quality of the crop are seriously curtailed.

The Propagating Beds

It is necessary to raise the plants in secluded, sheltered spots—cellars, basements, caves, abandoned mines and other underground places being particularly adapted to the production of bumper yields of superior quality. On this account the tunnel utilized by the Missouri grower satisfied all the requirements of a tiptop mushroom-garden.

A definite amount of "know how" is one of the most treasured assets of the efficient producer of this food-stuff. The grower must be conversant with the "ifs" and "ands" of the business; he must know that the mushrooms are propagated by means of spores, which are dust-like particles of the plant that come from the under portion of the head. These spores develop little gray hairs which are called spawn and which are the mediums by which the mushroom-plants are reproduced. Experts prepare these spawn for commercial uses, selling enough with which to plant one hundred square feet of area for about \$3.75, and for establishing new beds, but the inexperienced grower must exercise care in the purchase of these spawn, as in many instances they are relatively infertile and never will produce mushrooms. Once he had rented the tunnel for a number of years, our enthusiast, who had previously been restricted in the scope of his work, due to lack of suitable propagating-beds, began operations on an extensive scale. First of all he blocked

true of mushroom culture as it is of horse-breeding operations. He obtains his spawn from the best yielding mushroom-plants of superior quality, as he keeps close record of the number of mushrooms that are produced from a single bunch of foundation spawn.

Harvesting the Crop

His usual practice is to place the spawn in pieces about the size of a black walnut approximately ten to twelve inches apart on the prepared beds, which are then lightly sprinkled with water. In about eight to fourteen days he covers the beds with a layer of moist earth, free from all sand, clay or gravel, about an inch or an inch and one half in thickness. Then in about a month the spawn will begin to "run," a number of cobweb-like threads being formed, which gradually develop into the mushroom-plants. At this time special care must be exercised not to, in any way, disturb the plants, as they are extremely fragile and delicate, and the slightest pressure or jar will destroy them.

The atmosphere is maintained in a sufficiently moist condition by sprinkling the paths which pass through the center of the tunnel.

Contrary to popular belief, it takes four or six days for a mushroom-plant to develop. Frequently the young plant attains almost full growth before it pushes aside its covering, and on this account many persons maintain that a mushroom-plant can be developed during the short period of a single night. This Missouri grower advocates gathering the mushrooms every day or two, as they rapidly decay and decompose in case they remain for any length of time in the bed after they attain maturity. He also cautions the novice about pulling the plants so as not to injure the stem or head, this being accomplished by combining a quick pull and a twisting movement in harvesting the crop. All that is necessary in preparing the mushrooms for market, according to the methods of this successful producer, is to cut off the roots fairly low on the stem and then to pack the mushrooms of the same size in a peach-basket lined with blue-colored oiled paper which offsets the white color of the stems of these plants to excellent advantage. About ten average-sized plants constitute a pound and sell for approximately sixty to sixty-five cents on the retail market. The average grower realizes a net profit of about one dollar per square foot of bed area cultivated.

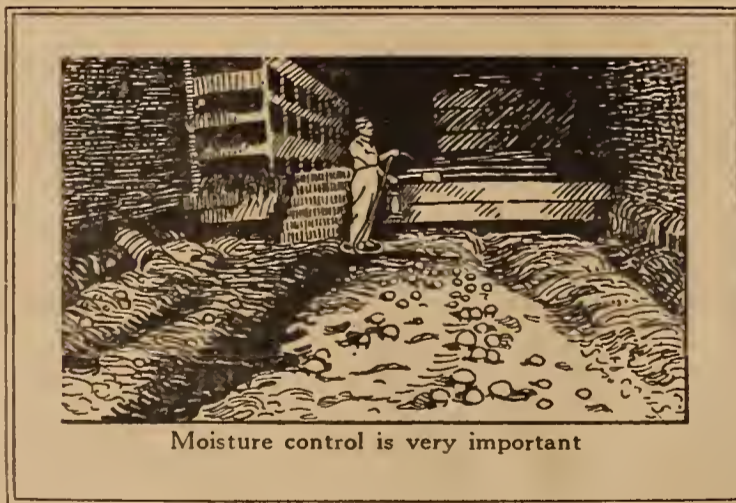
The mushroom-raiser who desires the maximum profit as a reward for his efforts in the production of this novel crop should avoid selling his produce to grocers or commission houses, but, instead, should develop a special custom among clubs, hotels and restaurants, which will gladly pay top prices throughout the year for delicacies of this nature. At the present time the tunnel mushroom-farm is yielding from eighty to one hundred pounds of mushrooms per day which, on the average bring sixty cents per pound.

Why Some Growers Fail

This prize mushroom culturist explains a few of the problems which the inexperienced grower meets with, somewhat as follows: "Mushrooms will grow at all seasons of the year



Mushrooms growing in the old tunnel



Moisture control is very important



A view down the center of the tunnel

up one end of the tunnel to prevent drafts and to keep out the cold.

He then constructed parallel rows of shelves about six feet in width and extending the entire length of the tunnel, with a central passageway down the middle between them. By the use of these shelves, which were arranged in four tiers, one about twelve inches above the other, he more than trebled the actual available floor space on which he could scatter his spawn. He then filled each of the shelves to a depth of about six to eight inches with a mixture of one part of black earth, rich in humus and three parts of freshly decomposed stable manure.

Breeding Mushrooms for Quality

The manure is subjected to a special heating process, being spread out in layers, over which are thrown a couple of inches of earth in preparing it for use on the mushroom-beds. It must be turned every day or two and packed down, care being exercised that this fertilizer does not become too hot and fire itself out. In a few days the objectionable odor disappears, and then the fertilizer is ready to mix with the earth to form the bed.

Then the beds are ready for the spawn. This expert grower usually produces his spawn at home according to original methods. He claims that there is as much difference in mushrooms as there is in the quality of various breeds of live stock and that the law of heredity that "like begets like" is just as

under favorable conditions. It requires about seven or eight weeks to prepare a bed and to harvest the first crop. For the succeeding five or six months the bed will continue to produce, and then the old material should be completely removed; the shelves should be thoroughly fumigated, whitewashed or sprayed with some disinfectant solution, as these plants are subject to disease and insect pests, and any of the old material may contaminate future growths. The ill-luck and poor success of many ambitious growers attend the violation of these fundamentals to efficient mushroom culture. In fact, the preferable plan is to air the beds for a couple of weeks before starting new beds. As in the former instance, virgin spawn should be used in starting the new beds when the proper time for so doing arrives."

The producer of mushrooms must be very careful to keep the plants cool all the time, even during the marketing stage, and should handle them only when it is absolutely necessary, as it is a simple matter to kill out the beds or to impair the quality of the product by rough or excessive handling. The high price of this delicacy is a staple factor that may be relied upon, and for the experienced person the growing of mushrooms should prove interesting and profitable.

EDITOR'S NOTE—This article suggests a possible use for the unused basements, caves, potato-pits, etc., which without a crop of this sort are valueless. Farmers having the proper facilities for mushroom culture should not overlook those facilities.

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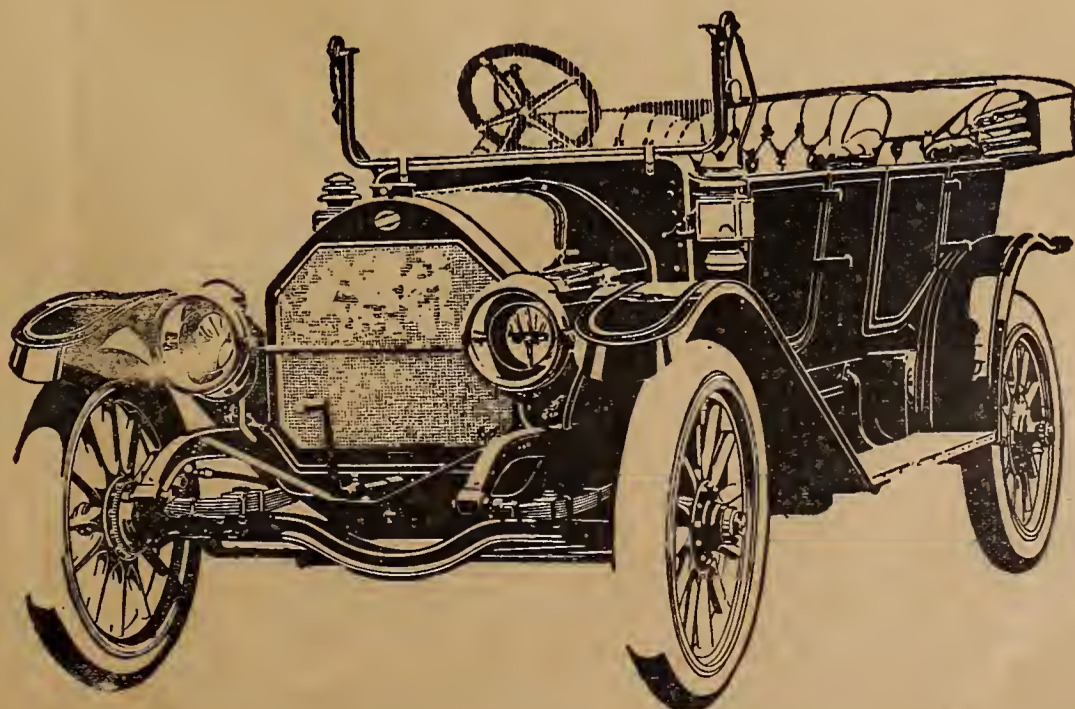
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Live Stock and Dairy

Making Cheap Pork

THE question of making cheap pork is of considerable concern to the man who is growing hogs for the pork-market. It ought also to interest the man who is growing hogs for the pure-bred market, because a large portion of his herd must necessarily find its way to the block. When hogs are selling high, as at present, and feeds are also high, it may not be possible to make pork cheap, but if the margin between cost of production and selling price is sufficient, pork may still be made at a profit.

To begin with, the hog-grower should have large, thrifty and vigorous breeding stock. Furthermore, these should not have been overfed, especially on protein. Pigs born from the proper kind of parentage will respond properly to the right kind of treatment, while those that have not been born right will not.

After the pig has been properly born, the next thing is to furnish it the right kind of feed, under the right kind of an environment.

The pig should have a variety of feeds, which should include enough of the nitrogenous or protein feeds for growth. The market pig during early life should have between six and seven pounds of digestible crude protein daily per one hundred pounds live weight. During the fattening period it does not need so much. The pig to be developed for breeding purposes should not have quite so much during the growing period as the market pig.

As much of the necessary feeds as possible should be grown on the farm. Clover or alfalfa, or either of them, should play a large part in the ration for swine. These answer a triple purpose; they furnish the necessary roughage, furnish protein and also furnish the pig with exercise. It should be remembered, however, that a pig is primarily adapted to concentrated feeds, consequently should not be expected to live and do well on roughage alone. Grains should be furnished to the extent of from one half to two thirds of the ration. This might be in the form of corn, rye, oats, barley, wheat, rice, etc., from the standpoint of carbohydrates, and soy-beans, peas and skim-milk for protein. Commercial feeds can also be used if not enough can be produced on the farm.

The pigs should also be given free access to mineral substances, such as salt, ground limestone, bone-meal, charcoal and hardwood ashes. They should be kept growing all the time, but should never be overfed. While they are young they should be kept rather hungry, and as they approach maturity the market pigs can be put more nearly onto full feed.

The growing pig and the breeding hog need considerable water in their rations, while the fattening hog does not need so much. During the summertime and in warm climates this does not need to give much concern, but during the winter and in cold climates water should be fed to the hogs in the form of a thin slop, so that they get sufficient for proper development.

WILLIAM DIETRICH.

Horse and Cow Covers

VICE Consul-General Henry D. Baker made note of the use of horse and cow covers in New Zealand when he was traveling through that country. In a report published shortly after his trip he said:

"Especially in the South Island, I have been impressed with the general use of canvas covers for horses and cows in cold or wet weather, and especially during the night-time.

In New Zealand it is not customary for stock to be housed even in winter. Some protection, however, is deemed necessary for horses and cows, particularly when left out on pastures much exposed to severe weather. During winter the covers may be kept on these animals most of the time, but during spring and autumn they are put on at night and removed in the morning. The use of covers is so general and so important that it would seem to be worth the while of American manufacturers of canvas and cotton duck goods to cater for the New Zealand market, with a view to popularizing their goods as material for horse and cow covers."

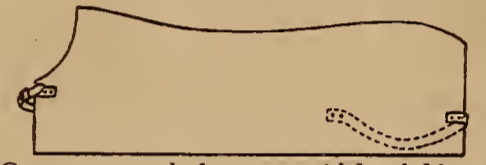
We wrote to our New Zealand correspondent, asking him whether he thought these covers would be practical for America or not, how they were manufactured and sold, etc. His reply follows. Editor.

Small traders are being gradually pushed out of business by large concerns, that do business direct with farmers. They buy their produce and sell their wool, in fact supply them with everything they require. These large firms make up these covers on their own premises. There are two such firms in our small town. Each of these firms turn out well over 1,000 horse-covers each season, and I should say from an experience of thirty-eight years in New Zealand that in the South Island fully 20,000 horse-covers are sold every year. The North Island being milder, covers are not used to the extent they are here in the south.

Cow-covers are not used in great quantities as yet, but I find the farmers are finding the benefits derived from covering their cows so great that it is only a matter of time until the cows will be covered as carefully as horses are at present. The horse-covers sell at from \$4.30 to \$5.20, according to quality. Cow-covers are made of a cheaper material, and cost from \$2.60 to \$3.70. They last, on an average, two seasons, and would last much longer but for the barbed-wire fences which are greatly used in New Zealand. These barbs cut the covers very much and are a constant source of complaint with farmers here. They don't seem to find a good substitute for barbed wire. Farmers would sooner go without their meals than neglect to cover their horses; even those with good stables find it more beneficial to cover their horses at times and let them run in the paddock than to have them cooped up in a stable. In fact, the covering of horses, and of cows to a lesser extent, has become so prevalent that some cover them all the year around, but I don't think they require covering during the summer months. They are not so careful about horses that are not working.

I don't know what the climate of Ohio is like, but I am certain that if the farmers there once started covering their horses and cows, that is, of course, if the climate is severe enough to justify them in doing so, they would find so much benefit from the practice that nothing would induce them to leave their cattle uncovered.

Horse-covers are made of two widths of thirty-six-inch canvas of various qualities. A green water-proof canvas lately introduced



Covers are made from two widths of thirty-six-inch canvas

is very popular. The two widths of canvas are joined in the center, cut to the shape of the horse's back. In the case of cows, they are made straight along the back. They are lined with felt or cotton duck, fifty inches wide, and fastened with strap to go around the leg, or with girth to cross under the belly; leg-straps are mostly used. A strap and buckle secures them at the breast. These covers cannot come off. No matter how much the horse jumps about, if the cover is made to fit the animal as it should be, it will stay.

H. CUNNINGHAM.

Preventing Hog-Cholera

HOG-CHOLERA is caused by a filterable virus or germ, the exact nature of which is unknown. It is invisible under the strongest microscope, and pure cultures have never been obtained. This germ, however, is known to be destroyed by certain disinfectants. Where the disease has existed, disinfection of the premises is therefore as effective, as far as it goes, as it is for the control of any other infectious disease. The best disinfectant for this purpose is compound liquor cresolis made as follows:

Five pounds of good laundry-soap dissolved in a sufficient amount of warm water. Add one gallon of crude carbolic acid (95 % cresylic acid); stir well. Then add sufficient water to make fifty gallons.

Success in the control of hog-cholera depends upon recognizing the disease immediately when it makes its first appearance in the herd and then enforcing proper measures, or healthy herds may be treated with serum (double method), and the disease thus avoided entirely. In districts where cholera is generally prevalent swine should be kept immune by this method until the disease disappears from the vicinity.

There is no longer a question in regard to the value of serum treatment as a preventive. It stands to reason, of course, that to be effective the material used in treatment must be good. The virus (disease-producing blood) must be active, or immunity is of short duration, and the serum must be potent, or deaths will follow the treatment. Serum used alone in healthy animals produces an immunity lasting from four to eight weeks. The double method (serum and virus) results in a much more lasting immunity, although serum alone applied to infected or exposed pigs, provided the former do not die of cholera, produces an equally lasting immunity.

In infected districts the following rule is recommended by the State Board of Live-Stock Commissioners of Ohio: Have your breeding animals immunized in the early weeks of pregnancy (unless they are immune as a result of having suffered an attack of disease and recovered). In either case the offspring will then be more or less immune at birth. This immunity may last six or eight weeks. In the course of this time all the sows on the ordinary farm have farrowed. Then give all the young pigs the double treatment. The last pigs farrowed may be treated within a few hours after birth. Immunity from double treatment in these very young pigs lasts about three months. The treatment (when applied under the direction of the state veterinarian,

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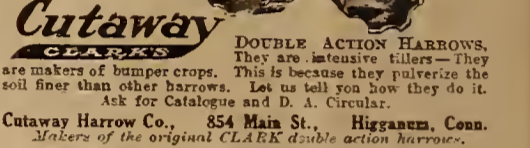
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in Ohio) costs about fifteen cents for each pig, including services of veterinarian and cost of serum.

When the youngest pigs are three months old, all should again be treated. If they average fifty pounds in weight, the cost will approximate thirty cents per head. The following immunity will last approximately six to eight months, and thus bring the pigs safely up to the time that they are ready for market, at a cost of forty-five cents per head.

The sows and boars kept for breeding should be treated once every year. This method has been recommended and followed by the State Board of Live-Stock Commissioners for the past two years, and has been found very effective. Occasionally immunity runs out before the specified period. In those cases, the appearance of the first symptoms of disease is a warning to re-apply the treatment. If this method is followed carefully, the loss from cholera can be practically controlled. The appearance of disease in a herd at or near the time when the immunity is about to terminate can be promptly checked with treatment.

Good Results in Ohio

In Ohio over 150,000 head of swine have been treated by the serum simultaneous or double method during the past four years. Over 75,000 were treated last year. The experience of the State Board of Agriculture in the treatment of this large number of swine of all ages and under practically all conditions has been that, while the acute form of the disease, after making its appearance in a herd, can be promptly checked, it is useless to treat herds with chronic disease. On the other hand, the treatment of healthy herds has been uniformly successful.

While it is admitted that the treatment of healthy herds by the so-called double method (the use of disease-producing virus simul-

the treatment, while it requires a certain degree of skill and care, is comparatively simple. Any person of ordinary intelligence can fill a hypodermic syringe with fluid, insert the needle into the tissues and inject the material. Any person with the same degree of skill and intelligence can also inject morphin and strychnin into the tissues, yet the sale of these drugs to the laity is forbidden by law, for the reason that their use by the uninformed may be attended with very grave results, often death. The same is true of the use of hog-cholera virus and protective serum, with the difference that the deadly effect of strychnin stops with the animal injected, while the cholera virus, if it results fatally, does not stop its work on the first victim, but creates a deadly center of infection that may spread through an entire herd or over a large section of country.

Sanitary laws of many countries and of some of the United States forbid the sale or use of cultures of dangerous disease-producing organisms to all but licensed veterinarians or physicians. The same precautions should be taken with the handling and distribution of the virus of hog-cholera, than which there is no more deadly organism.

The use of serum alone can safely be entrusted to the lay farmer, but since its efficacy in producing lasting immunity is so slight, compared with that resulting from the double treatment, the preference for the latter and its safe application by a competent licensed veterinarian is obvious.

Applications for serum treatment should be made as soon as the disease appears in a neighborhood and before herds are actually sick. In this way the state veterinarian's force is enabled to be used to the best advantage, and a greater number of herds can be protected than could be in any other way. Besides, the best results are obtained by the treatment of healthy herds.

DR. PAUL FISCHER, State Veterinarian, Ohio.

Beginning With Sheep

A MARYLAND reader has purchased a neglected farm of one hundred and fifty acres, which is nearly covered with wire-grass. He wishes to break up this growth by pasturing sheep on the farm, and, as he knows nothing about sheep, he asks our advice as to their selection, raising and care.

I could make that advice more definite if I knew something about the nature of your soil, whether the land is hilly or low-lying, the course of cropping you propose to adopt and the amount of capital you propose to invest in sheep. Under the circumstances, however, I will suggest the various courses I think open to you. You can determine which you think you had better follow.

Scrub Sheep Are a Poor Investment

Since you say that you have had no experience with sheep, I do not think it would be well for you to attempt breeding, at least during the first season, though eventually, if you find that sheep thrive on your land and that you have become interested in them, you will, I hope, take to that form of the business as being the most profitable, as well as the safest and most interesting. With this possible end in view, I would advise the purchase, as soon as you are ready to accommodate them, of from forty to fifty yearlings or two-year-old good grade ewes of any of the Down breeds, Shropshires, Hampshires or Southdowns. I regard these as the hardest and best mixed-mutton-and-wool sheep, the best cleaners up of weeds and rough pastures and the best fitted, when crossed with a thoroughbred ram, to establish a

have pretty well cleaned up the land shear them early (say about April) and then market them. Their wool would probably a little more than pay for what they would have cost you in care and grain, and their growth would probably pay you a little more than their first cost, which would probably be about \$3 per head.

Advice About Fences

As you are not well posted on sheep, it would be well to get some neighbor or friend with knowledge on that subject to buy for you, or, better still, if you have a commission house that you can depend on, let them know just how you are situated, and get them to fill the order with such breeds as I have designated. If you have neither of these, I would advise you to state your case to Messrs. Clay, Robinson & Co., Stock-Yards, Chicago. They are the largest and most reliable house in the business, and since they have offices in all the leading cities, Chicago, Kansas City, Buffalo, etc., they could fill your order from whichever of these markets is handiest. They attend equally well to large or small orders.

And now, as to how best to handle the sheep if you get them, I am supposing that you have no crops as yet on the land, and your first object is to clear it of weeds, wire-grass, etc., and, next, to improve its fertility, both of which you can accomplish in no way so readily as by sheep, following them up, of course, by fairly deep plowing and cultivation. To do this in the best way, fencing is necessary, for it will not do to turn your sheep loose over the whole 150 acres. If the land is already divided into manageable fields, you will escape considerable expense, but as you will want to get on the land as soon as possible and make the most of the fertilizing power of the sheep, I would strongly advise you to pen the sheep in a space not larger than from five to ten acres. When they had thoroughly disposed of the wire-grass and weeds on this lot, you should at once move them on to fresh ground and plow in their manure, for if left on the surface it will lose some of its value. The means to pen sheep is almost a necessity if you want to make the most of them, and wire fencing is so cheap nowadays that it would pay you to get, say, one hundred rods of it, with which you could, if you have no permanent fences, make pens of, say, twenty-five by twenty rods. Sheep are not like cattle or hogs, everlastingly trying to break out, and you can buy woven wire for the lower part, with three or four strands of barbed wire at the top (a fine protection against dogs) for from thirteen to twenty cents per rod. The penning system insures your getting the full benefit of the manure, and the urine, which contains a great part of its value, helps to work the solid portions into the ground.

I quite understand that your present use for the sheep is as weed and wire-grass clearers, but you should also expect a profit from their wool and mutton, or, if ewes, from their lambs, if you should determine to mate them in the fall of next year. Since weeds and wire-grass are not very fattening, these sheep should at the start have a daily ration of about one-half pound of oats or corn, with a little bran. You can lessen this, perhaps, if you find that they take well to the grass and weeds, but liberality with sheep always pays, and I would rather see you increase this ration than lessen it.

Providing for Spring Rations

I advise you to devote one half of the first ten acres you can clear after the sheep to winter rape and the other half to winter oats mixed with Canada peas. This will provide you with early forage for them in



The photograph illustrates a serum test conducted on four pigs. Two of these, Nos. 182 and 183, received protective doses; No. 180 (dead) received no protection, and No. 181, which is sick, received an insufficient amount of serum.

taneously with protective serum—simultaneous method) is attended with a certain degree of danger, this is true only when the virus or disease-producing blood is too virulent or the serum not sufficiently potent. The disastrous results following the use of the double treatment in certain sections of the United States have been entirely avoided by the Ohio Department of Agriculture by its careful method of testing all serum and virus before sending it out for field use and the additional precaution of placing the serum in the hands of competent veterinarians trained especially for this kind of work.

All serum used for field work is tested as follows: Two litters, containing from six to ten small pigs each, are used for a test. Each litter is placed in a separate isolated pen, and every pig is infected by injecting into its tissues two cubic centimeters (about one-half teaspoonful) of the most virulent disease-producing cholera-blood obtainable. One or two pigs in each litter receive no further treatment. These are the controls, and are used to test the virulence of the cholera-blood. If the latter is effective, the controls die of cholera within about ten to eighteen days. The remaining pigs receive graduated doses of serum, varying from one eighth to a full dose, or twenty cubic centimeters per fifty pounds weight. The pigs receiving the smallest doses (one eighth, one fourth, three eighths) usually die of cholera, showing that they received too small an amount of protective material. If the pigs receiving half-doses, or ten cubic centimeters per fifty pounds weight, are found to be fully protected, the serum is considered of standard strength and used for field work. Occasionally serum will protect in one-eighth doses, or two and one-half cubic centimeters per fifty pounds weight. If it fails to protect in ten-cubic-centimeter doses, it is discarded and destroyed. In field work, full doses (twenty cubic centimeters per fifty pounds weight) are invariably applied, consequently twice the amount (or more) found necessary to protect susceptible experimental pigs. This great "margin of safety" is allowed on account of the variable susceptibility of individual pigs. To guard against mistakes in our laboratory tests, due to possible variation in susceptibility of individual pigs, each test is made on pigs belonging to the same litter and preferably pure-bred pigs, consequently as nearly alike as possible. All tests are made in duplicate.

Precautions in Distributing the Virus

The question is continually put before us, Is it possible for the farmer to apply serum treatment himself? It is possible for him to do this. The operation of applying



Watching the camera man

small flock, if you should eventually decide on breeding. They would be ready to be bred by September of next year. If, however, you had decided by then against breeding, they would be in good condition to sell as breeders, or to fatten for the winter market. Such sheep as these will cost you from \$3.50 to \$4.50. I would strongly advise you against too great an effort at economy in starting. Scrub sheep are generally the least desirable stock a farmer can buy.

Another alternative is that you should buy, say, fifty wether sheep, run them over the farm to get their living off the wire-grass and weeds, help them along in the winter with a little grain, and after they

the spring. You will, if the winter is at all severe, have to yard them and provide them with shelter from rain and storm. Dry cold won't hurt them. Their grain ration should be served in troughs. They must have clean and fresh water, and lumps of rock salt scattered here and there. JOHN P. ROSS.

Better farming may lie in just such simple things as adjusting the plow to do the best possible work, in feeding stock so that not a bit of waste follows and in carrying out plans carefully laid. What the world needs is not so much men who have thousands to lay out in land and equipment as farmers who know the value of details and have the will and the disposition to work to the line.



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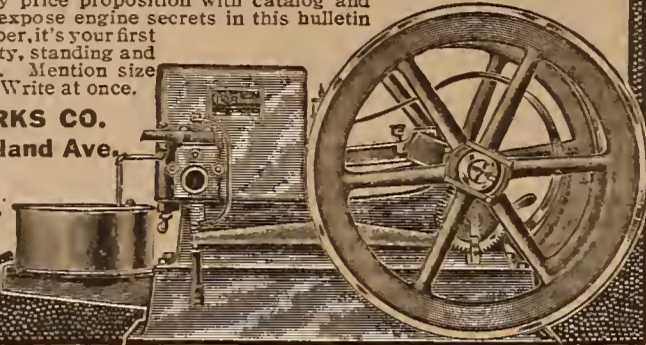
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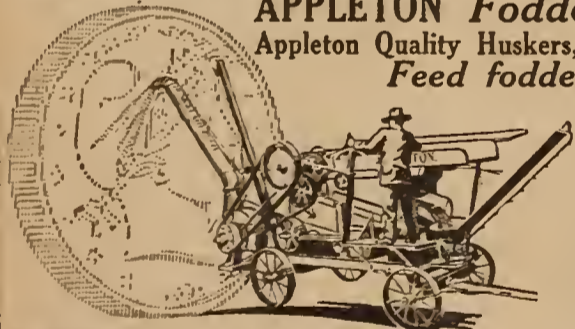
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Garden and Orchard

The Farmer's Thanksgiving

By Bertón Braley

WE THANK Thee, Lord, that Thou hast
sent

From out Thy arching firmament
The sunshine and the welcome rain
To fall upon the growing grain,
That there might be no hint of dearth
In bounty of the good brown earth.

We thank Thee, Lord, for strength and
health.

That we might cherish all this wealth.
That by our sweat and care and toil
The world might profit by the soil,
That we, with steady hand and head,
Can give mankind its daily bread.

We thank Thee, Lord, that for our meal
We need not cheat or rob or steal,
That we can feast and eat our fill
And do no human being ill,
But sit, untroubled, in our place
And look the whole world in the face.

We thank Thee, Lord, for joy and woe,
Since both are part of life, we know;
We thank Thee for the love and faith
Which we have kept through toil and scathe.
With faces bowed above the board,
We thank Thee, Lord, we thank Thee, Lord!

Thinning the Peach

A Post-Harvest Discussion

THE necessity of calling attention to the
matter of thinning does not arise be-
cause it is difficult to understand, but
simply because men are inclined naturally to
be neglectful or indifferent to many things
that lie close at hand. I know a man who
grows a few peaches now and then. He has
perhaps four acres. He violates every law
of orcharding, not because he does not know
better, but merely from disinclination to do
work on time and in order. Every year when
there is a crop one can see his trees sur-
rounded by props, holding up a crop that will
average him perhaps fifty cents a basket,
peaches that are mostly pit, skin and fuzz.

Penny-Foolish Orchard Management

Such people do not put any work or ex-
pense into their orchard, and whatever they
get from the sale of their crop they figure as
clear profit. Under those conditions the
trees live usually no longer than to bear two
crops, and promptly die.

If it were not for the fact that the market
is clogged up with the kind of stuff they
produce, and that they do to some extent
spoil the market, not by competing with good
stuff, but by simply flooding the market and
disgusting the public whose money they take,
it would not be worth while to try to improve
matters, but rather let such growers reap the
natural result of their stupidity.

However, there are always a number that
can be reached, those who have an open
mind and come to meet you half-way. To
such I wish to talk.

A common sight at peach-ripening time in
most of the fruit-growing regions is that of
peach-trees in the dooryard or garden, their
slender branches helplessly borne down to
the breaking-point under a load of half-
grown fruit. And many commercial fruit-
growers even permit their orchards to suffer
in the same way. The fruit produced under
those conditions is destined to be small, of
poor flavor and either largely unmarketable
or at least greatly reduced in value. The
remedy of supporting the branches by nu-
merous props is both unnecessary and inade-
quate. A peach-tree that is properly pruned
does not need any props to help support a
maximum crop. But to grow a full crop to
the greatest possible perfection and value
it becomes necessary to thin the fruit to such
an extent as to insure sufficient space, sun-
light and food for each peach.

That proper and timely thinning will not
only tend to preserve the tree in vigorous
condition, capable of bearing annual crops,
but will invariably improve the size, color
and uniformity, and thus raise the market
value of the fruit, is so obvious that it
scarcely seems necessary to do more than
call attention to it. I do not hesitate to say
that by this practice alone the crop can be,
and often is, doubled in value.

Certainly in years of large crops it is only
the superior fruit that can be sold at a
profit, and the same is true only in lesser
degree in years of comparatively low pro-
duction. Many have been deluded by the
idea, the crops being short, that they will
not thin, hoping that the demand will be so
great as to absorb even the inferior fruit at
profitable prices. The result is usually dis-
appointing.

Where a good many trees have to be
handled, thinning should begin even before
the so-called June drop is over. It can
readily be seen which peaches are going to
hang on, and no time should be lost, be-
cause to get the best results the work must
be completed before the pit begins to harden.
The careful observer will notice that a

peach develops rapidly in size up to this time
of pit-making. Then for a period of four
weeks the size increases very little, if at
all, during which time the pit seems to ap-
propriate for itself all the food that the tree
is able to furnish. It should be noted here
that it is the pit rather than the flesh of the
peach which draws upon the vitality of the
tree.

When the tree has thus begun to form
from two to ten times as many pits as would
be contained in only so many of the fruit
as the tree can develop to perfection, it is
quite evident that the drain on the tree's
feeding power is enormously and unneces-
sarily overtaxed. If the thinning is done
before this devitalizing pit growth has taken
place, the advantage to the remaining fruit
must be, and in fact is, very pronounced.
The fruit can thus make a perfect develop-
ment and yet leave the tree enough food to
make new wood and strong, healthy fruit-
buds for next year's crop.

It is somewhat of a problem, which each
must solve for himself, to know to what
extent thinning should be carried. No abso-
lute rule can be given. The naturally smaller
fruit should be thinned the most, Carmen
more than Champion, and these rather more
than Elberta. Generally speaking, the
peaches should be left fairly well distributed
along the branches, preferably on the upper
side, where they get direct sun. It is not so
all important to have them eight or ten
inches apart, as is sometimes recommended,
so long as each branch does not have more
than it can safely carry. It is a good plan
not to have too many on the end of slender
branches. Rather, have them closer, near
the base of the branch, so that they are not
whipped by the wind. Of course, no two
peaches should touch.

A very satisfactory and rapid method, and
the one which is used in my own orchards,
is to use a light, smooth stick eighteen inches
long. With quick, sharp strokes along the
under side of the branches, remove prac-
tically all of the fruit which grows down-
ward. This usually leaves plenty of it along
the sides and on top of the branches. These
should then be reduced by hand to the de-
sired number.

Direct Sunlight Necessary for Best Color

It may be necessary to remove ninety per
cent. of the crop or only one half, as the case
may be. The temptation is to leave rather
more than is necessary, where the tree has
set an enormous crop. But there is no good
reason for doing so. In fact, this is the kind
of tree above all others that should be sub-
jected to the most thorough thinning, in
order to insure fine quality and size.

To the uninitiated, at thinning-time six
or eight inches between peaches looks like
quite a space, but a second inspection four
weeks later will convince the most skeptical
that the fruit is quite close enough, seeing
the branches bend down almost to the break-
ing-point.

One reason for sparing the peaches on the
upper side of the branches is to have them
exposed to the direct sun, because without
direct sun there can be no fine color, no
matter what else the treatment has been;
also, if spraying is needed, the fruit can
more readily be coated.

In many cases it is advisable to thin a
second time, in fact there is very little dan-
ger of overdoing it. E. O. MUESER.

Bob-White

SO MUCH can be said about the value of
this little quail to the farmer! Bob-
white has an esthetic as well as pecuniary
value to the farmer. Of the latter, his
services to the husbandman run well up
into several dollars per bird per year. We
might say that each quail earns a dollar a
week throughout the year for the farmer.
All they ask in return is to be protected.

Does it not make you feel glad in body
and mind whenever you hear, loud and clear,
"bob-bob-white"?

Have you ever thought of the valuable
service bob-white renders you for the priv-
ilege of your land for his home? Bob-
whites destroy bushels and bushels of
noxious insects of various kinds all summer.
They feed on chinch-bugs, grasshoppers, cot-
ton boll-weevils, beetles, potato-bugs, locusts,
and a long list of other insects. During the
late fall, winter and early spring they feed
upon waste grain and weed-seeds such as
they find upon the fields. Here, too, then,
they save the farmer much labor.

H. W. WEISGERBER.



Crops and Soils

Field-Peas and Prosperity

FIELD-PEAS growing in quarter, half and whole section fields for fattening hogs and sheep is a new one to most people. Let me tell you about it. Within ten years the field-pea has become one of Colorado's agricultural assets, particularly in the higher parts, and more especially in the San Luis Valley, a plateau as large as the State of Connecticut, the bed of an old sea, at a height of 7,500 to 8,000 feet, in southern Colorado.

About ten years ago a farmer living in the valley planted field-peas to replenish the soil, which had been sapped by repeated crops of grain. The peas, which he intended to plow under while green, grew so large that he let them mature. The vines were covered with ripe peas, and to get rid of them he turned in a bunch of sheep, only to find that they fattened in prime shape for market in an incredibly short time. From this accidental discovery the field-pea industry sprang, and each year sees an increasing number of hogs and sheep turned off for market on peas.

It Is Frost-Resisting

The peas grown in the San Luis are of native or Mexican stock. It is a true pea, a small, hard, round one, similar to the garden-pea and not at all like the Clay, Whippoorwill or cow-pea raised in the warmer sections. The field-pea cannot stand

product. Pea-fed bacon ranks with the best English product, and the Denver packers offer a premium of one dollar per hundred-weight over the top of the market for corn-fed stuff for a uniform supply of pea-fed bacon-hogs. Pea-fed lambs always top the market. Pea-fed beef is a delight to epicures.

A bushel of peas is said to put on as much pork as a bushel and a third of corn, and it is easier to raise peas than corn. The Colorado Agricultural college puts the average cost of seeding and irrigating an acre of field-peas at \$1.50 to \$2.50. The harvesting is done by the stock. There is no cost of cultivation.

Peas Make the "Streak of Lean"

A third of a million head of fat lambs are shipped from the San Luis pea-fields every year. These lambs are brought in from the ranges in the fall when they weigh about sixty pounds and are put on peas. They pick up the cured vines and eat them as hay and pick up the peas as grain. The result is they fatten evenly and very rapidly, finishing in shape for market sooner than the alfalfa and pulp and corn fed lambs.

Hogs are more profitable on peas than are lambs. The field-pea is even more concentrated food than corn, one bushel being computed to make from one third to one half more gain in weight on a hog than a bushel of corn. But peas have a further advantage over corn in that they are nitrogenous rather than starchy. Corn makes lard, while peas make the red meat which is the essential "streak of lean" in the best bacon. As bacon retails for more than lard, pea-fed hogs are more valuable.

Prof. H. M. Cottrell, one of the most eminent authorities in the world on feeding

so vigorous a growth that it was fit to cut the same season. But, just before we cut it, it began to turn yellow. By this time I had made more of a study of alfalfa and knew that this yellow color was a pretty sure sign of lack of inoculation. We had considered the matter of inoculation before, but had not attempted it because of the great distance between us and a successful field where soil for inoculation could be had. So after mowing we let the field stand until the following season, hoping that it might inoculate itself.

In the spring, however, portions of the field proved to be badly winter-killed. The remainder made a most uneven growth, and in August we plowed up the whole field, applied lime at the rate of three tons to the acre and inoculated the seed with an artificially prepared culture. An inordinate drought caused the seed to lie in the ground with no sign of germination for about a month. Then came rain and a very nice catch of the seed.

The alfalfa wintered nicely and showed an encouraging growth in the spring. Still, as the season advanced, the uneven growth of the plants showed that only a small portion of the soil had become thoroughly inoculated, and also a rank growth of dog-grass had fairly choked out nearly one fourth of the field. So in August we again plowed up the field, hoping that by this means we might spread the inoculation, and reseeded it. We did spread inoculation, but unfortunately also dog-grass. We also plowed up a small area immediately alongside, gave it a heavy coat of lime, treated the seed with the prepared culture and laid it down at the same time. This was in August of last year.

The Dog-Grass Under Control

The seed took well on both places, and the result this year was an excellent stand of alfalfa on the new piece and also on the old one wherever the dog-grass had not got in its work. The repeated plowings, however, have so spread the dog-grass roots that it now occupies about half of the ground. It would be useless under these circumstances to again plow the field; so we shall allow it to stand as it is.

The encouraging part of the whole experiment is the smaller piece of ground which was sowed for the first time last year. On this the alfalfa stands thick, even and strong, and the dog-grass, which we have now learned is its great enemy, has not obtained



Field-peas grown under the best of conditions

warm weather at all. It can withstand quite severe frosts. The San Luis is high and has a climate that is always cool, so field-peas are grown there as nowhere else in the world. From thirty to fifty bushels of peas and three to five tons of pea-hay per acre is the average yield. The amount of feed to the acre is surprising. The climate is cool, dry and sunny. The molds and mildews which destroy the pea crop in the East are driven away by the constant sunshine. The few peas that fall to the ground remain there dry and hard, while the rest of the crop ripens. The vines, instead of turning black or rotting, cure into a sweet hay. With an open, dry fall and no snow in the winter, the farmer is not compelled to harvest the crop. Cattle, sheep and hogs are turned into the field, pick up the peas and crunch them down, eat the vines for hay and turn into fat beef, pork or mutton faster than on any other feed known.

Beneficial Effect on the Soil

Again, the peas enrich the soil. Every year that a crop of peas is raised on a piece of land it becomes richer and more fertile. This is because the pea is one of the plants which can draw nitrogen from the air and store it in the roots. The field-pea requires little care. It is planted by broadcasting and plowing under, or by drilling into stubble-fields without plowing, in the spring. It is given no cultivation, but is irrigated until the vines cover the ground. In a moist, warm, cloudy climate like the East the vines would simply rot on the ground. But in the cool atmosphere and perpetual sunshine of the Valley the vines grow and set blossoms, and the blossoms make pods, and the pods fill with peas; and the vines grow and set more blossoms and more pods and more peas until frost comes in the fall. Crops of fifty bushels the acre have been thrashed, and after the crop had been gathered the ground was almost covered with peas that had shelled off and fallen off.

But very few are harvested save for seed. The stock are turned in and pick up every pea. The result is many more pounds of beef, mutton or pork per acre than from an acre of corn and with one fifth the labor.

Pea-fed pork, mutton or beef is a fancy

live stock, after making an exhaustive examination of the pea-fields, said: "I have lived in six States, and seen and studied stock-growing in thirty States and two foreign countries, and I have never seen better conditions for producing cheap feed and high quality of meat in feeding cattle, hogs and sheep." WARREN F. WILCOX.

EDITOR'S NOTE—In this interesting and enthusiastic description of the field-pea industry of Colorado is a lesson for every humid-region farmer who can grow Canadian field-peas, cow-peas, velvet-beans, soy-beans or peanuts—and that means all of us. The growing of these crops for the live stock to harvest is perfectly practicable in the East. Where harvesting can be turned over to the stock, profits are increased.

Alfalfa Under Difficulties

IN TELLING the readers of FARM AND FIRESIDE our experience with alfalfa, I think I should first go back a little and refer to the purchase and character of the land on which we started it.

My two sons and I bought, about six years ago, a tract of low-lying, nearly level land on Prudence Island in Narragansett Bay. The surface of this land to the depth of from one to two feet is a good, fairly heavy loam; beneath it is a pure gravel subsoil extending downward indefinitely. As the land is nowhere more than fifteen feet above sea-level, water can be had anywhere at a depth of twelve feet, and in many parts of the tract at a depth of five or six feet. The tract, therefore, may be said to be sub-irrigated. As many attempts to start alfalfa have been made in different parts of Rhode Island and none of them attended with success, we had not thought of trying it; but meeting Mr. Quick one day in New York and telling him the character of our soil, he urgently recommended our making the attempt, which we accordingly did.

We began by making a small tract exceedingly fertile by applying and plowing in an immense quantity of stable manure. We then prepared the ground nicely and sowed the alfalfa—but did not use lime or soil inoculation. The alfalfa came up splendidly (it was sown in the spring) and made

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a foothold. In all our future sowings of alfalfa we shall endeavor to avoid repeated plowings, as these, more than any other one thing, tend to the spreading of dog-grass.

The Method Recommended

I should add that on the newly taken up tract we applied a greater quantity of lime—probably three and one-half or four tons to the acre—and we certainly gave it none too much. Concerning the use of the artificial cultures for treating the seed, I do not feel at all convinced that it is the equal of soil-inoculation by the means of the soil from a field where there is a well-established stand of alfalfa, but I do believe it a help. To illustrate: it seems very clear to us that the inoculation in the piece of ground that we first sowed has been due to the inoculation in occasional spots which came of its own accord and was subsequently spread through the whole field by the repeated plowings. But in the second piece the inoculation seems to have taken place, evenly, the first season; and this would appear to be due to the treatment of the seed by the prepared culture. Thus in our experience the commercial culture has been successful once out of twice. I am rather doubtful whether as high an average of success could be counted upon as a general rule; but of this I confess myself uncertain. Inoculation by means of soil from a well-established field certainly seems the most natural way and is, in my opinion, the best.

And now, as I am writing mainly for the benefit of others who may be situated as I am, let me add a few words concerning dog-grass, which, wherever it exists, is an awful enemy to alfalfa. This grass is known in different localities as "dog," "twitch" or "quack" grass, and may very possibly have other names that I do not know of. It propagates itself mainly by means of its roots, which fill the whole ground with a perfect network. Any little piece of root, broken off and placed somewhere else, will grow. Therefore, it will be seen that the more ground containing dog-grass is plowed, the more the abominable pest will spread. If let alone however, a patch of dog-grass will be a long time in spreading very much.

It is, therefore, very unwise for a man whose land contains dog-grass to attempt to establish his alfalfa by repeated plowings and seedings. I believe that the best method in such cases is as follows: First make the land reasonably but not excessively rich by applying stable manure in the spring and letting it lie until about the first of August. Then plow it in, and upon the plowed ground apply lime at the rate of at least three tons to the acre. Harrow this well in, inoculate your soil from a well-established field, and sow your seed. If all these details have been faithfully attended to and the land is calculated for the crop, the chances of success should be very good indeed.

DAVID BUFFUM.

The note you sign is not as cheering as the one you sing.

Good plans sometimes miscarry because the carrier goes wrong.

Asking the Soil Questions

DO THE experiment-station reports fail to interest or instruct you, Mr. Practical Farmer? If so, please let me tell of some work done by a practical farmer like yourself in finding out the thing that pays, by the simple method of trying it out in the fields.

We read in all the agricultural papers of the experimental work being done by the stations and the Agricultural Department, and no doubt some farmers doubt the utility of such work, as far as tangible results to the working farmer are concerned. It has frequently been stated, in relation to such experimental work, that being the results obtained in one location only it could not be taken as a guide by the farmers all over the country. Certainly not! The experiments of the stations and the Department are "headlights" only, and merely point the way to farmers by which they can take them up and apply them to their own peculiar circumstances of soil and climate. If the working farmer were to take the results of the experiments of the stations and the Department as applying to his own particular case, their work would be worse than useless, it would be misleading; it is when the farmer gets down to his own experiments along these lines that their value is shown.

Each farmer should know the particular problem which requires to be worked out on his farm. In the central valleys of Pennsylvania where the land has been in cultivation for more than a century and a quarter the one vital question for which the farmers have been seeking a solution has been that of cover crops and the restoration of humus and fertility to the soil. That the farmers in this section are alive to the question is evidenced by the work of Mr. A. B. Ross, of Schellsburg, Pennsylvania, one of the most up-to-date working farmers in Pennsylvania, who, in giving an account of his practical experiments along the lines mentioned above, says: "For several years I have been working with various kinds of cover crops, seeded

in the corn at the time of the last cultivation. This work has included the use of cow-peas, soy-beans, vetch and crimson clover, as well as rape and rye.

"The first four named crops have the advantage of being nitrogen-gatherers, where the seed is inoculated, and the bacteria are established on the roots. Rape and rye do not gather nitrogen; they simply collect the plant-food already in the soil and make it available as humus-making material for future crops.

"Crimson clover failed with us about half the time. Vetch has winter-killed, in part, in a few cases last year (1911); though it generally pulls through the winter in good shape. The first real frost kills the cow-peas, but the soy-beans keep on growing until actual freezing weather sets in. Vetch, rape and rye all keep green until covered by snow.

"In side-by-side tests we found that following vetch we could plow readily to full depth, and the ground broke up well with one thorough harrowing; the rye ground was hard below a depth of about three inches, plowed up cloddy and required a good deal of work in fitting. The mechanical effect of the vetch was also noticed in the second year, that part of the field plowing better than any other. In this field vetch, rye, crimson and common clover were given a side-by-side test. Vetch proved far more valuable than any of the others."

Relative Merits of Soy-Beans and Vetch

"As between soy-beans and vetch, there are several points to consider. Vetch undoubtedly has a better mechanical effect on the ground; that is, it fills it better with fine, hair-like roots, makes plowing easy and makes a splendid seed-bed for the crop following, with little work in preparing. On the other hand, the soy-bean roots deeper, and the whole plant decays more quickly than vetch, making the humus and nitrogen it supplies more quickly available than in the case of vetch. Repeatedly I have noticed the immediate benefit of soy-beans on the crop following, whether the beans were cut for feed, hogged down or turned under. The effect of vetch is apparently not so immediate, but extended over a longer period of the rotation. And the last distinction between vetch and soy-beans is in the rotation and the matter of cost. Soy-beans for an acre of cover crop costs about \$1.25, while vetch for an acre costs \$3.50.

"Inoculated legumes, vetch, clover, cow-peas and soy-beans give more to the corn crop than they take from it. Some of the nitrogen they draw from the air becomes available for the corn as the bacteria slough off and decay; and this is particularly true during the hot weather of August, when the bacteria fastened on the shallower roots die and decay, and bacterial activity moves deeper into the soil and subsoil. This condition is not true of rape or rye; the latter, particularly, coming into direct competition for plant-food with the shallower roots of the corn. On some of our thin soils this competition might seriously interfere with the making of a good crop of corn. With inoculated legumes the corn is actually helped, and the cover crop a net gain for whatever purpose it is used."

A Farmer's Experimental Report

"The cow-pea is revolutionizing farming in some parts of the South. It is used in much the same way as we use the soy-bean to build up land while growing a corn crop, and the cotton crop following is much heavier than without using the cow-pea.

"After we cut our corn in September, we allow the soy-beans to stand for turning under, or the hogs or cattle can be turned in on them, or they can be cut and fed to dairy cattle.

"Vetch can be pastured later in the fall and again in the spring, and this gives it a decided advantage over the soy-beans. But in view of the present cost of seed, of the fact that the humus from the soy-beans is so promptly available and that the seeding of the soy-beans so readily conforms to our present system of cultivating corn I believe that the soy-bean should be selected as the plant with which to do the cover-crop work, at least for the present."

It reads like an experiment station report, doesn't it? And yet it is merely the conclusion of a practical farmer who has worked out his own problems. Note the definiteness of some of his conclusions—to him the conclusions conclude:

Crimson clover fails about half the time. The first real frost kills the cow-peas. Following vetch we could plow readily to full depth. The rye-ground was hard, plowed up cloddy and required a good deal of work. The soy-bean showed superiority over rape. The benefit of soy-beans on the following crop is immediate. Inoculated legumes give more to the corn crop than they take from it. Rape and rye come into direct competition with the roots of the corn for plant-food. The soy-bean is the plant which should be selected as the cover crop for the present.

It is work like this, by the working farmer, which will cause the most permanent advance of agriculture. S. A. HAMILTON.

Poultry-Raising

Scratch for Scratching Litter

HOW many, at this time of year, stop to think how necessary it is to provide a supply of scratching material for the hens during the winter months. How few take advantage of the opportunities that are presented, before snow comes, for harvesting a supply.

There are, in every community, meadows and runs that can be cut for the asking or for a small sum. The hay, though it may be too poor to feed stock, is ideal for scratching purposes. It can be cut any time before the heavy frosts come in the fall, cured and hauled to the poultry-house, where it can be stacked up until ready for use. It costs barely nothing except the time and labor expended in harvesting it, yet how few avail themselves of this chance of supplying one of the most important necessities to the successful poultry-plant.

Buckwheat is an easy crop to raise. It requires very little fertilizer—a thin coating of wood-ashes will answer—and it grows and thrives upon land newly broken up. The crop ripens in a few months and can be harvested and stored away with or without thrashing. As litter, it wears well, and the fowls find much pleasure in picking off the kernels of grain.

Oat-straw is a more expensive litter, for it is valuable as a food for stock and commands a good price per ton in the market. Likewise barley, wheat and rye straw are also valuable, and are not often used in the scratching-pen.

Corn-fodder, leaves, stalks and husks make a litter that is durable and is not easily reduced to a powder. The butts may be removed after a time, for they will not readily work up into desirable litter.

Pine-needles, which can be procured by the cart-load in the pine-forests, make a good

not been impaired while they were small they will suffer no bad effect from eating corn or wheat, unless the grain is unripe. Oats are more or less dangerous on account of the husk. Rye is not good for any kind of poultry; that is, the grain. A patch of green rye will provide good pasture for poultry in winter and spring. Green food is necessary for all kinds of poultry, and if they cannot get it a substitute should be provided. Cabbage is an excellent substitute for grass. When cabbage is scarce, raw apples, turnips, potatoes, beets, etc., may be used. We chop all the runty apples and potatoes (raw) for the poultry in winter. We feed no cooked mash to laying hens. Soft mixtures will cause "scours." For several years we have used the whole-grain ration for hens, with the very best results. Here it is: whole corn every morning during fall and winter, wheat in the sheaf about two o'clock in the afternoon, with something green or some refuse from the kitchen "between meals." Don't forget to store some wheat in the sheaf.

Eggs in Proportion to Hen Comforts

Some of the neighbors complained last winter about not getting eggs. It would have been very strange if the hens had laid any eggs. One neighbor has no chicken-house at all. Some of the hens roost about the barn, while others sit on trees. Another neighbor has a hen-house that has probably never been cleaned since it was built several years ago. The window is never used for ventilation. The doors are never closed in winter, and the hens go in or out at will. Needless to say, they usually stay outside in summer. The perches are never cleaned, no grit is ever given, not even ashes. Of course, the fowls are covered with lice.

If there are any lice on the premises, young poultry will sometimes get lousy, in spite of all efforts to prevent. In such cases it is necessary to use something that will destroy the vermin in short order. Castor-oil or olive-oil will do the work and will not injure any young fowl, if it is properly used. Vaseline is also good for the purpose. Never use lard or kerosene. The



"The first two years were marked largely by failure"

material, especially for young pullets just commencing to scratch. They soon are reduced to a powder and need often to be replenished.

Leaves are also desirable and can be secured in autumn and stored for winter. They, too, are soon reduced in the scratching-pen, and a large quantity is required to keep up the desired supply.

Whatever is used for scratching material, let us see to it that we harvest the supply in season. Look about your neighborhood and find some run or meadow that no one is to cut, and get permission to cut it. It will pay you in the end. A good supply of litter is the best investment a poultryman can have if he expects eggs from his flock during the winter months.

A. G. SYMONDS.

EDITOR'S NOTE—These pieces of advice will apply to every keeper of poultry. They may be a little tardy in some sections, but in others they can be followed in this year's work.

Some Poultry Experiences

PROVIDE plenty of grit and charcoal for the poultry, young and old. Some people say: "Give the chicks fine sand or gravel." Don't do it. Give chicks and all other young fowls coarse, sharp sand, also chick grit, if a good brand can be had. Smooth gravel and fine sand are of no value at all. And don't forget the hens. We lost a fine Leghorn hen last winter from an attack of indigestion, caused by lack of grit. As a rule, we buy oyster-shell by the one hundred pounds, but once last winter the supply became exhausted. The Leghorns seem to eat more grit than other hens. They were without it for only a few days, but one hen died and some others came near dying. They had other grit, but it didn't quite "fill the bill."

Charcoal is very beneficial to poultry, but will not take the place of grit. It will help to keep away disease. We have cured mild cases of indigestion and liver trouble in young turkeys by feeding pulverized charcoal. It is difficult to keep young turkeys out of grain-fields, but if their digestion has

latter is too severe, and even animal grease is more irritating than vegetable oil. Neither is a preventive for lice. The oil must come in contact with the vermin to be effective.

Where to Look for Lice

Find the lice, then apply the oil. A little is enough. Lice are usually found under the wings, also among the wing-feathers on the outside, just under the short feathers that cover the large quills. Raise the short feathers and spread the wing. Then apply the oil. If the lice are very numerous, be generous with the oil. It will not injure the bird. Examine other parts, such as the head and around the tail and vent; also on the back of chicks, turkeys and guineas. A few years ago the writer lost a fine flock of turkeys because we could not locate the lice. Every place was examined except the right one. After it was too late, we found lice by the hundred under the short feathers on the "shoulder," or outside of the wing. If ducklings or goslings have lice, they will always be found on the back. After using the oil, be careful to keep young poultry out of the direct rays of the sun. Provide some sort of shade. Last year a neighbor of ours lost nearly a hundred young chicks after they had been treated for lice. Either oil or grease was used to kill lice, but it killed the chicks, also. The remedy was applied rather freely, then they were turned out in a little yard with no shade except a brooder. Although the thermometer was registering close to ninety in the shade, those poor little chicks were forgotten. In a few hours they were nearly all dead.

Mistakes for Others to Profit By

The writer had a similar experience a few years ago which resulted only a little less disastrously for the chicks. We had a fine lot of Leghorn chicks about four weeks old. They seemed to be thriving wonderfully until they began to show symptoms of lice. We used lard very freely, especially on their wings. They had free range and were out in the sun most of the time. Their wings hung down and dried like parchment! Only a few survived, and they were badly stunted. A well-cared-for flock of hens will give

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"Last spring I had an attack of fever that left me in a very weak condition. I had to quit work; had no appetite, was nervous and discouraged.

"A friend advised me to eat Grape-Nuts, but I paid no attention to him and kept getting worse as time went by.

"I took many kinds of medicine but none of them seemed to help me. My system was completely run down, my blood got out of order from want of proper food, and several very large boils broke out on my neck. I was so weak I could hardly walk.

"One day mother ordered some Grape-Nuts and induced me to eat some. I felt better and that night rested fine. As I continued to use the food every day, I grew stronger steadily and now have regained my former good health. I would not be without Grape-Nuts as I believe it is the most health-giving food in the world." Name given by Postum Co., Battle Creek, Mich.

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as good returns for the feed consumed as any other live stock on the place. We know by long experience. The work is easy if it is done regularly, even the keeping of the houses clean and free of lice.

If there is no running water within easy reach, be sure to keep the vessels well filled. Poultry need plenty of good clean water. Don't expect chickens and ducks to drink out of the same vessel, and don't hollow out a place in the ground (as some people do) for ducks to puddle in. Use troughs or vessels that can be cleaned often. If they can be arranged so as to keep the fowls from paddling or sitting in the water, so much the better. Be sure that they get enough water to drink. And don't forget to provide some shade, if trees are scarce.

Cut Bone is Good Though Not Essential

Green cut bone is one of the best and cheapest egg-producers known to poultry-keepers. If you live near a meat-market or butcher-shop, it will pay you to buy a bone-cutter. But if you cannot have green cut bone for your hens in winter, don't get discouraged. You can get plenty of eggs all winter without it. We used to believe that cut bone was absolutely necessary for egg-production in winter. We fed it regularly as long as it could be had, and, of course, the hens laid all winter, and the bone got the credit. We have fed no cut bone or meat, except a few table-scrap and refuse from butchering, for a number of years, and the hens lay all winter just the same. Skim-milk or buttermilk was found to be a good substitute for green bone. We use it for the hens all winter. But remember, it is a food and will not take the place of water. While animal food is an important factor in the production of eggs, there are other elements equally important. We find that a comfortable house in winter has a great deal to do with the egg-supply. Regular feeding is one thing that should be emphasized. We always feed and water the poultry at regular intervals, and other details are not forgotten. There was no falling off in the egg-supply last winter when the thermometer registered ten below zero, nor even when it went to sixteen below.

If there are lice or mites in the brooder houses or brood-coops in the fall, they should be thoroughly cleaned before winter. Lice will sometimes stay under coops all winter if they are not molested. Litter from floors of lice-infested coops or houses should be burnt. If there is any sign of roup or tuberculosis among the poultry, all badly affected fowls should be killed and burnt. Houses and coops that have been occupied by the affected fowls should be cleaned and disin-

fect or destroyed. Both tuberculosis and roup are contagious and should be guarded against. Dampness and foul quarters are said to be the cause of both. Therefore, these diseases are both easier to prevent than to cure.

If you live where winters are severe, don't imagine that it is necessary to have a curtain front or any similar kind of a poultry-house in order to give the hens fresh air. A roof ventilator is all that is necessary besides windows and doors. The latter may be fitted with fine-mesh poultry-netting, so that the fowls can have some protection in summer, when all doors and windows are left open at night. If a house cannot be kept clean and well ventilated all summer, the hens should be forced to roost in the trees.

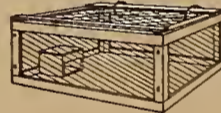
A time-worn theory that still exists is that a sandy soil is ideal for the poultry business. While sand is essential for young poultry, it is not such an important element in the soil that its absence would mean disaster to the poultry business. Any person who possesses ordinary intelligence or what is called "common sense" can raise poultry on any soil that is suitable for agricultural purposes, provided other conditions are favorable. Raising the poultry is of first importance, of course. Next in order comes the question of disposing of poultry products. Success depends more or less upon local markets, shipping facilities, convenience to supplies, etc. Business ability is of far more importance than the character of the soil. If the soil is poor, keeping poultry is a very good way to build it up. Save all the manure, and use it on the soil as a fertilizer. Poultry-raising can be made more profitable by combining with fruit-growing and gardening. If one is close to a good market, it should be an easy matter to build up a profitable trade. ANNA WADE GALLIGHER.

Chick-Nursery

TO PROTECT young chicks against hawks and prowlers, I constructed during the winter months wire frames of two-by-one-inch strips and poultry-netting. The frames were all five feet long, which was found to be a convenient size. The side panels, or frames, were made two feet high and the tops five feet square.

The sides were held together by large screws, and the tops were kept in place sufficiently well by fastening one side loosely with wire. This side served as a hinge when the top was raised.

Poultry wire of one-inch mesh was used for the sides, and a two-inch mesh served for the top. The wire, when firmly stapled on the strips, made the frames rigid, and no braces were required.



A single chick-nursery five feet square is large enough for twenty-five chicks, but the sections may be arranged to make a single large runway if desired. Boxes were placed inside of the enclosure for protection against rain and wind. The particular advantage of this form of chick nursery lies in its light construction, which makes it portable. The chicks are given fresh scratching ground every day, yet are protected against prowlers and kept out of the garden as well. They can't get lost or be stepped on by stock, and can be fed without the intrusion of larger fowls. D. S. BURCH.

A lively farmer's club is a powerful big stick in the community.

Before buying land examine every foot of it, vertically as well as horizontally.

The pessimist is always thinking about the winter after summer; the optimist of the spring which follows winter.

A Variety of Green Food

IT IS only in the winter, when the food is dry and the hens confined, that the difficulty of affording a variety of green food is met. Variety in green food is better than one kind. The term "green food" does not apply to grass or cabbages only, but includes any kind of bulky, succulent food, such as clover, corn-fodder leaves, cabbage, beets, ensilage, potatoes, turnips, carrots, etc. The object is to give bulk in order to dilute (if it can be so expressed) the concentrated grains. These foods are the cheapest that can be used, and lessen the cost of production of eggs, not only by promoting the health of the fowls, but also because such foods assist in the digestion of the more costly kinds.

In feeding green food, variety may be attained by giving cabbage one day, beets the next, potatoes the next, and so on. The object should be to lay in a supply of such articles and have them ready for use when winter comes. Grass is the cheapest of all foods for poultry in summer, and the farmer who feeds grain at that season is not only increasing the cost of eggs, but taking the risk of causing indigestion. On a range the birds get seeds, insects and a variety of grasses, including young weeds. Ducks and geese are gross feeders, and can easily secure more than they require, while turkeys and guineas are the best insect-destroyers. A. E. VANDERVORT.

Profitable Goose-Culture

GOOSE-RAISING is not so extensively engaged in as duck-raising, the conditions under which geese are raised being almost entirely different from those necessary for raising ducks. The duck, being smaller, can be raised in a more limited space than the goose, which needs free range and water, while the former has been found to do well without water. There are many waste places on a farm that are worthless for cultivation that can be used with excellent results for raising geese for market. Fields or pastures having streams or large brooks, ponds or rivers on them can be used by geese and cattle. Our cattle and geese run peacefully together. Many farmers are profiting by this opportunity and adding to their income without loss of time or detriment to their pastures or fields. However, overpasturing with geese is bad practice, since the geese soil the grass and make it unpalatable for horses and cattle.

Simple Shelter is Sufficient

The care in raising geese and the attention needed to successfully raise them are small when compared with the cost of raising other fowls for market. A goose on free range will gather the largest portion of its food, consisting of grasses, insects and other animal and vegetable matter to be found in fields and streams. The simplest form of shelter is used, where the birds are not crowded. An old shed is suitable if one has nothing better.

Geese live long, but it is not wise to keep ganders over four years old. They then become quarrelsome and ugly, and the younger ones are more active and prolific and insure greater fertility of the eggs than old ones. The goose retains her laying and hatching qualities through life. The feathers are another source of profit, and you can always get a ready sale for them.

Almost all varieties of geese make good mothers, and if left to themselves will make their nests much as the wild goose does and hatch a large percentage of their eggs. It is wise to use hens to hatch the eggs, or incubators, letting the goose have the last clutch of the season; the goose then will lay a larger number of eggs than if she is allowed to sit at first.

Geese have been bred for table use at least since the days of ancient Egypt. They are now common all over the world, but perhaps are the most abundant in Germany, where their flesh is relished in various forms. For table purposes they should never be over three years old. Their flesh becomes tough and loses its agreeable flavor when older than that.

The Principal Breeds

There are seven principal varieties, as follows: Toulouse, African, Canadian Wild, Egyptian, Brown China, White China and Embden. Of these breeds I prefer either Toulouse or Embden for the farmer to raise for market purposes. But for those who are partial to crosses I suggest an Embden gander and Toulouse goose, Embden gander and African goose and Embden gander and White China goose. These crosses will give good growth, and the young birds will dress well for market. Crosses should only be made for market purposes, and always from pure-bred stock. Embdens are my favorites because of their snowy whiteness. They are nice-looking, of large size, tall and erect carriage and snow-white plumage.

Mate two to four females to one male, and in winter feed equal parts of bran, corn-meal and middlings, with a small amount of beef-scrap. Feed once a day with this; in the morning and at night feed cracked corn. Also give green foods, like steamed clover and cooked vegetables.

Every county should have a poultry association, and in it should be found every poultryman who has poultry, dressed or alive, or eggs, fancy or market, for sale at any time of the year. Each association should employ a man of experience and honor and place him in the nearest market center for the purpose of marketing the produce. It would be his duty to make contracts with the restaurants, grills, hotels and confectioners for supplying them with guaranteed fresh eggs and poultry that is not kept in cold storage for weeks and months. Do you see where this would place the poultryman in relation to the profits? As it is now the cost of grain and other feed for poultry is so great that the wholesale price of poultry products is far below a living price, not to say anything about a realization of profit. By having a man in charge of the marketing, the poultryman would obtain the retail price for his produce. DR. L. K. HIRSHBERG.



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Farm Notes

Wintering the Bees

NEXT season's honey crop depends on the proper fall manipulation of the bees. Successful wintering is accomplished only when the basic principles underlying the correct hive conditions are found in the colony before cold weather commences. Perfect wintering insures a strong colony for the beginning of the season.

Bees should be inspected, and all hives having less than thirty pounds of stores should have the number of pounds lacking marked on the hive. The hives should be strong in bees, and have a queen. Small colonies cannot be wintered successfully; two or more of these small colonies should be shaken together. Put a board in front of an empty hive, and shake alternately the combs from the hives to be united. The



Bees in their winter quarters

heaviest combs from the hives shaken are put into the empty hive. If it lacks necessary stores for winter, it is marked for feeding. No attention need be given to the queens; one will be retained—others killed. Queenless colonies should be united with a queen; right the colony by simply shaking the bees in front.

All colonies lacking in stores should now be fed. The feeder is put in the super, where it is handy to fill, and where the heat of the hive makes it possible for bees to remove syrup during cold days or nights. Home-made feeders can be used. A pan set on frames in a super which is set on top of brood-frames will answer the purpose. Grass or excelsior should be put into pans to keep bees from drowning.

Formula for the Syrup

The syrup should be made of the best grade of granulated sugar, with the proportion of two pounds of sugar to one of water. This is boiled without burning until well dissolved, when one-fourth pound of tartaric acid is added to every one hundred pounds of sugar. This is to prevent the granulation of the syrup in the combs. When feeding is done late, the syrup should be fed warm in the evening. Bees evaporate this syrup, and cause a loss in weight of fifteen per cent. This should be supplied when feeding.

As soon as feeding is done, bees should be prepared for winter, if they are to be wintered out-of-doors. Bees to be wintered in the cellar should be put in just before cold weather commences. Hives to be wintered out-of-doors should, in cold climates, be packed in October if possible. Later packing in warmer climates is satisfactory. The winter packing-cases should allow three or four inches for packing material on all sides of the hive. A piece of carpet or similar material is put over the frames. Packing material is placed on top in super, and cover is put on. The packing case should allow bees easy and free passage to outside.

The best packing materials, in their order, are ground cork, planer shavings, sawdust, chaff, chopped straw and autumn leaves. Entrance should be contracted to three-eighths inch by six to ten inches, according to size of colony. A good slanting roof should be provided. It is desirable that hives, even when well packed, be in a sheltered location. A board should be leaned against hives, to keep sun from shining into entrance during weather which is too cold for bees to fly—58°.

If bees are to be wintered in cellar, put several pieces of carpet or similar material over brood-frames. No cover is needed. Light should be excluded from cellar. Damp cellars can be kept dry by aid of lime. Temperature should be kept between 38° and 45°. An oil-lamp will provide heat if needed, and a window or door opened in the evening will supply ventilation, to reduce a high temperature.

N. F. GUTE.

"Soldier's Delight"

WHEN we bought "Soldier's Delight," it had been corned to death until weeds would hardly grow on some fields. Plowed three inches deep, never fertilized and no rotation had exhausted the humus, until it was said that anyone who wanted to make a living on that farm had to get clear off it and work by day's work. The soil was largely slate, with a mixture of clay and just dirt. The outbuildings were of old logs, unhewn, covered with clapboards held on by thirty-pound rocks. A huge chimney filled half one end of the house, and to pass from bedroom to kitchen one must go out in the yard and enter the other door. All

the farm stands on edge; that is, it is exceedingly hilly, sloping to the north and west.

The first thing was to sow rye, then manure it with clover-seed sown among it in March. This clover was turned under the second year for corn, which was followed by fall rye, with clover sown in the spring, to turn under again. Every scrap of ashes, hen and horse manure were scattered between the rows of corn, even when in tassel. Brush-piles were burned on the land, weeds mown and put in the furrows to be plowed under, and a good grade of fertilizer rich in potash used. The old chimney was torn down and a door cut through to the kitchen. Instead of growing corn and the grains steadily, sugar-corn, potatoes, Lima beans, string-beans, cabbage, etc., were grown successfully. Under the old style of farming corn bread and poverty was the rule. Under the improved methods better food and a fair degree of prosperity became assured, and on the very fields that once hardly bore weeds, last year the farmer grew rye that made twenty-four bushels from thirty-seven dozen ordinary-sized sheaves, the rye weighing fifty-eight pounds to the bushel. This year half the place is set in common redtop clover, thick as it can stand, some of it at this writing hip-high. Good roofs replaced old shingles and new buildings the tumble-down shacks. Once started on the line of improvement, it was wonderful how the apparently dead soil responded to intelligent rotation, nursing and feeding.

CLIFFORD E. DAVIS, Maryland.

The best gardeners are now studying their seed-catalogues and planning their gardens for next year, before they forget the experiences and mistakes of the past season.

Poultry have very poor brains. Success in the hen business, therefore, depends on the brains of the manager.

GARDENING

BY T. GREINER

Staked Tomatoes are Pleasing

I AM more than ever pleased with my staked tomatoes, or rather with my particular way of staking them. The size of plants (they are over seven feet high at this writing) and of the tomatoes themselves, as gathered in the common one-third-bushel, or peach basket, is well shown in the photo. The picture was taken late in the season, and after most of the fruit on the lower part of vines, where they hung in big clusters, had already been taken off. These fruits were all of good and even size, clean, free from blemishes, solid and evenly colored, without cracks and without disease. The big foliage on top not only brings out the best quality of the tomato, the best flavor, but also seems to act as a protection against the first light frosts of the season. It is now October, but the outlook is for another spell of good weather and for a continuation of a full supply of fine ripe tomatoes until killing frost. This year I handled about 150 plants in this manner. But I like the trellis style so well that I am going to have more toma-



Staked tomato-plants seven feet high

to-plants on stakes next year. The variety is of the Early Jewel type, one of my own selection, as any grower can make his own selection and call it his "Early Ideal."

Sowing Onion-Seed

An Indiana reader asks me what I think of the plan of sowing onion-seed in the fall to be ready for starting in spring. Not much do I think of it for our northern sections. It may work all right sometimes, but will usually fail. It is true that much depends on an early start. But better plow the land in late fall, laying it off in ridges to be worked down, or replowed in early spring, and sow the seed into the freshly prepared soil. You will have a better chance to fight the weeds, and this is important.

A Good New Thing

One of the few really good novelties of the season is the Mammoth Crookneck summer squash. It is much larger and apparently more productive than the old variety. We had immense specimens that were soft and tender and fit for culinary uses when as large as the fully matured old Crookneck squash. Of course, it is otherwise the same old squash, so far as quality is concerned. We usually eat a few messes of it when they first reach usable size, mostly sliced and fried. After that we have so many other good things that the summer squash is given the cold shoulder. Many families, however, are fonder of this vegetable than we are. A hill or two would be all we require.

About Growing Bush-Fruits

A Massachusetts reader has started a patch of raspberries, also some strawberries, and intends to have also currants and other small fruits. He would like to have a book that tells all about the cultivation of these things, from start to finish. There is a book that treats quite fully and especially on small-fruit growing, entitled "Bush Fruits," published by the MacMillan Company of New York and costing one dollar and fifty cents or two dollars. Raspberries, blackberries, currants and gooseberries are grown with comparative ease. Try to secure good plants from some reliable grower or nurseryman, and plant them, preferably in early spring, in well-prepared, fairly good farm soil, at proper distances apart, and keep the soil stirred about them sufficiently to keep all weeds down. The old wood of raspberries and blackberries must be removed every year after the fruiting season, and the new canes, if too rampant, shortened in. Currants and gooseberries usually need considerable trimming, or cutting out some of the old canes, every year, also. With strawberries more pains must be taken. The soil should be highly manured and full of humus, but free from grubs. The plants are set in early spring and usually allowed to make matted rows. They need constant attention to keep the weeds out, and runners cut off if too many are produced. A raspberry or blackberry plantation is good for a number of years. So also are gooseberries and currants if otherwise well taken care of. But the strawberry-patch has to be renewed every spring, although in some cases we carry a bed over for a second year's fruiting.

Look After the Remnants

At this time of the year we always find a lot of stuff in the garden that is looked upon as waste and worthless rubbish. There are a lot of cabbage-heads too loose to be used for cooking or for human consumption generally. There are overgrown kohlrabi, table beets, immature squashes and pumpkins, or some perhaps that were somewhat frost-bitten, undersized turnips, etc., mostly things that are not hurt much by the earlier frosts. They have considerable feeding value, either for cattle or for poultry. Why let them go to waste? I gather up all such stuff and store it under shelter, out of the reach of severe freezing, and gradually feed it out. The immature or undersized squashes, pumpkins, etc., as also small potatoes, sweet potato wastes, etc., may be boiled or steamed, then mashed with corn or other meals, and will do first rate as a fattening ration for all sorts of fowls. I do not believe (to judge from my own actual experience) that we can fatten turkeys, geese, ducks and chickens much faster and better, in the ordinary ways of fattening—that is, without cramming—than by giving them all they will eat of such cooked vegetables mixed to a stiff dough or crumbly mass, with corn and pea meals, say half and half, or two parts corn-meal and one part pea-meal, besides a reasonable amount of whole clear corn for variation.

The overgrown beets and turnips or kohlrabi worthless for human eating are stored in the root-cellar or pit for feeding raw to cows or fowls. If for the latter, I usually shred these roots and mix them with meal or shredded-wheat waste. The garden furnishes me a lot of good materials for these purposes, even in the wastes. All fowls will like to pick at the waste cabbages later on when they cannot get green picking in the pasture or on the range.

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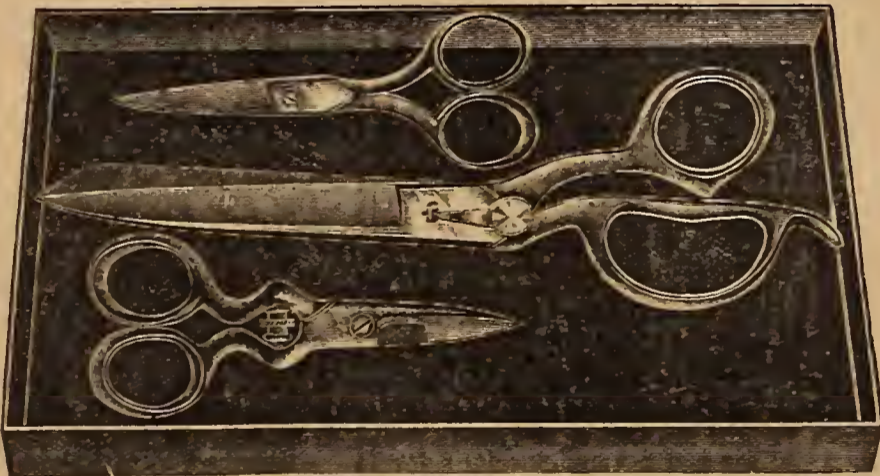
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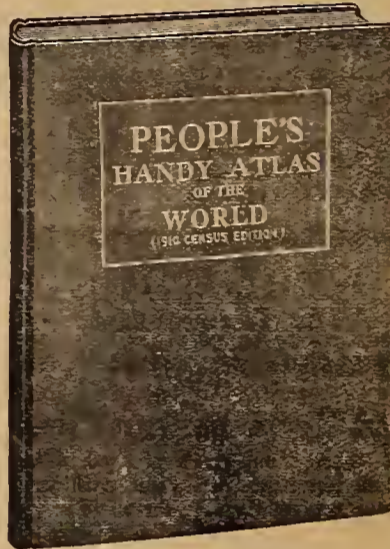
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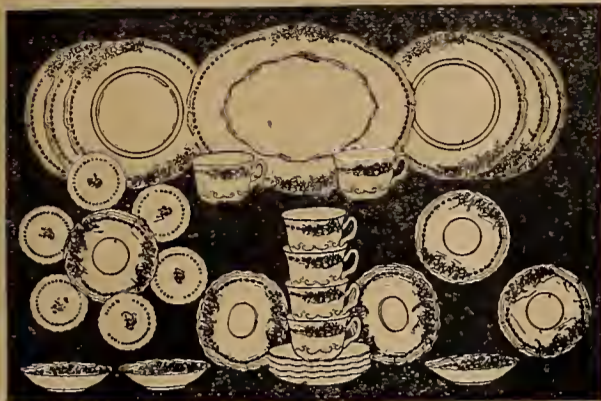
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Here is something in hatpins that will surely appeal to our lady club-raisers. We feel particularly elated over getting such a splendid hatpin bargain. These hatpins are made in five different styles, as shown in the illustration. They represent the very latest novelty in jewelry, and the selection we are offering you is the most beautiful and attractive that can be obtained. The heads of the hatpins are of glass—reproductions of amethyst, emerald, turquoise and onyx—upon which the various designs are encrusted in pure silver by an absolutely new electrical process. No. 786 is onyx, No. 787 amethyst, No. 788 turquoise, No. 789 emerald, No. 790 sapphire.

Our Free Offer

Any one of these hatpins will be given free for a club of two yearly subscriptions to Farm and Fireside at 40 cents each, OR

One of these hatpins will be sent to anyone ordering a one-year subscription to Farm and Fireside accompanied by a total remittance of 60 cents.

Famous Weeden Toy Engine

This is a real steam-engine for the boy, and will be a source of entertainment and instruction to him. This toy engine contains all the fundamental principles involved in a large size engine. It is perfectly simple and harmless in operation. To the youngster of mechanical turn of mind, this Weeden steam-engine will be the grandest present that he could possibly receive. This is without doubt the best toy engine on the market. It has all the parts of a regular steam-engine, a fly-wheel, cylinder, boiler, piston, whistle, etc. Every engine is tested before it leaves the factory and is in good running order. Duplicate parts can always be obtained in case of accident or breakage. Every real live boy wants one of these engines. You cannot afford to overlook this opportunity of getting one of these practical and instructive toys for one of your boys. It will be mighty interesting for the boy to have a real engine that he can start and stop and run himself. It will give him a lesson in mechanics that will be worth a great many times more than this premium will cost you. It will really take you only a little while to get the necessary number of subscriptions.



Premium No. 772

Our Free Offer

This Weeden steam-engine will be given free for a club of five yearly subscriptions to Farm and Fireside at 40 cents each, OR

This Weeden steam-engine will be sent to anyone ordering a one-year subscription to Farm and Fireside accompanied by a total remittance of \$1.15.

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Beautiful Talking Doll

Every little girl wants a doll, and this lovely talking doll is a dream. At least the child will think it is too good to be true. This doll says "Papa" and "Mama," and cries just like a real baby. She opens and closes her eyes and goes to sleep, and with her pretty face and beautiful hair is just the ideal doll that every little girl will want. Her dress and hat are tastefully and prettily trimmed. This doll is manufactured abroad, in the country where all the good dolls are made. We ordered a special import shipment of these dolls for the benefit of Farm and Fireside girls. We know this doll will give immense pleasure to every little girl in the Farm and Fireside family. We are offering this doll on wonderfully reasonable terms.

Our Free Offer

This beautiful doll will be given free for a club of five yearly subscriptions to Farm and Fireside at 40 cents each, OR

This doll will be sent to anyone ordering a one-year subscription to Farm and Fireside accompanied by a total remittance of \$1.25.

Be sure to order as Premium No. 781.



Premium No. 781

Boy's Scout Knife

Worth Its Weight in Gold to Every Farmer's Boy

This is the handiest and best knife ever made. Both blades are of the finest tempered steel, finely ground and polished. You have paid from \$1.00 to \$1.50 for a knife not half as good as this one. This knife contains one large blade 3 inches long, on which is engraved "Scout." It also has a combination blade used for a can and bottle opener. It has a screw-driver on one end of the handle and a chain-ring on the other. Every boy scout wants this knife because it is a most valuable friend whether in camp or on the trail. It is not clumsy or awkward to carry, in fact quite the reverse. This boy scout knife is a marvel of mechanical ingenuity embodying every essential element; viz., simplicity, convenience, durability, smoothness and strength.

Our Free Offer

This scout knife will be given free for a club of three yearly subscriptions to Farm and Fireside at 40 cents each, OR

This scout knife will be sent to anyone ordering a one-year subscription to Farm and Fireside and sending a total remittance of 75 cents.

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Farm Notes

Callouses'

By G. Henry



FARMERS have callouses on their hands! The exclamation-point at the end of the above sentence has a right there, too. And it's a mighty good thing that we have millions of men in the country who wear callouses—and acquire them—without shame. The farmer is not drumming this corner and that district for someone's vote to send him to the State legislature or to Congress, perhaps to MIS-represent those who vote for him.

The average farmer is attending strictly to business—if he is worthy the name of farmer.

The farmer's callouses are on his hands, where they belong. The callouses are the result of good, honest hard labor, labor, . . . labor upon which the whole country and its every man, woman and child depends.

It matters not whether 'tis a millionaire who is trying to get richer, the son of a millionaire who is bent on spending his father's money, the daughter of a millionaire who is determined to annex a useless count or duke, or the wife of a millionaire who is trying to learn to speak a few words of French preparatory to breaking into high society—they are all dependent upon the farmer, although some of them do not realize it.

So whilst the farmer callouses his hands tilling God's soil, those who lean heavily upon him callous their tongues, some of them; callous their hearts, some of them; callous their consciences, some of them; callous their morals, some of them.

But the farmer goes steadily on doing the good work of a good citizen, leaning closer and closer as the days go by toward other men and women who do honest labor, until some day not so far in the future all of the working people in the country, whether they labor on the farms, on the railroads, in the factories, or in offices bent over desks, will unite and see to it that those who earn honorable callouses shall profit by the labor which callouses cost.

A simple statement, based on callouses, but most far-reaching, come to think over it.

An Engine for Pumping

"WHAT satisfaction and durability could I expect from a one-and-one-half-horsepower gasolene-engine for pumping water?" asks an Indiana reader. "My pump works too hard to pump much by hand. Could it be depended on also for running a bone-cutter and possibly a small feed-grinder? Would a kerosene-engine cost less to run, or get, in the first place? I am offered an engine for \$37.50."

In the first place, a gasolene-engine, like anything else, has its value indicated by

the price asked. If it is a cheap price compared to other engines of similar horsepower, then the engine itself is not as good as other engines.

Gasolene-engine construction has reached a point where practically all engines on the market will run and develop the power they are supposed to develop. That is, they will do this when they are new. The difference between a cheap engine and a high-priced one is largely the difference between a short and a long life in the engine. The low-priced engine is made of cheaper material and poorer workmanship, both of which mean shorter life in the engine. Sometimes part of the cost of expensive engines is due to their closer regulation of speed. If an engine is otherwise well made, it does not have to have close regulation in speed for pumping.

With the above explanation in mind, I would say that your engine would probably do all the pumping that any one-and-one-half-horsepower engine would do, but it might not have quite as long life as some. I believe I would prefer the gasolene-engine to the oil-engine. I think it would be more satisfactory, even though the price were in favor of the oil-engine. At that, I do not think you can get any oil-engine cheaper than the price you give in your letter as being asked for the gasolene-engine. Thirty-seven dollars and fifty cents is a low price for a one-and-one-half-horsepower engine. You could not expect an engine for less price to do much work. In fact any oil-engine of similar size would probably cost you more money.

If you will use a small cylinder in the well and a slow stroke of the pump, a one-and-one-half-horsepower engine will pump water slowly from a fairly deep well. If your well is very deep and you want to pump water rapidly, you would need a larger engine. In fact, for anything but a shallow well I would not recommend any engine under three horse power.

You could not expect to do cutting and grinding with a one-and-one-half-horsepower engine. Grinding, especially, takes considerable power, and even a three-horsepower engine will not grind very fast, although it would run a small grinder, grinding small grain and shelled corn.

N. M. NYE.

Use for Broken Posts

FENCE-POSTS which have been broken off or have rotted at the end may be used to advantage for reinforcing a hog-fence as illustrated. Trim off the ends of the old posts to make them four or five feet in length, and set two of them



between the larger posts, care being taken to make the post-holes full depth. Staple the woven wire to the new posts securely, and before filling in the post-holes drive the new posts a few inches more, causing the entire fence to set closely to the ground.

D. S. BURCH.

The Scythe Does the Work

A FARMER who has ever had to haul corn-fodder when the shocks were frozen to the ground knows it to be a difficult task. We used to use a spade to loosen the fodder, but have discarded it for what is more efficient, a heavy brush-scythe.

We start around a shock, thrusting the blade in to its full depth and severing the stalks near the ground. This operation is repeated around the entire shock, and the stalks thus loosened are then loaded. This intermittent cutting and loading is continued until the shock is loaded. The scythe allows one to stand more erect, is not so laborious and greatly accelerates the task.

A strong scythe is necessary, as heavy pulling will be required. We never loosen the band around the shock until we have cut once around, otherwise the cutting tends to pull the stalks apart and make difficult the loading.

P. C. GROSE.

A Dry Fire-Extinguisher

IN MERCK'S report, July, 1911, the following formulas are given for dry extinguishers:

1. Sodium chloride..... 8 parts
Sodium bicarbonate 8 "
Sodium sulphate 2 "
Calcium chloride..... 2 "
Sodium silicate..... 2 "
2. Sodium chloride 60 "
Ammonium chloride..... 60 "
Sodium bicarbonate.....100 "
3. Ammonium chloride.....100 "
Sodium sulphate..... 60 "
Sodium bicarbonate..... 40 "

There is no mention made of the relative efficiency of these. In my opinion the most effective dry salt is bicarbonate of soda, then ammonium chloride and, next, common salt. If these really work in prepared mixtures, there is no reason why they might not be mixed at home and work with equal efficiency.

GEO. W. CAVANAUGH.

Another Visit at Mr. Jolly's

AS SOME months have elapsed since my previous visit at the home of Mr. Jolly, of Pleasantville, my mind was drawn that way strongly when, as though in answer to my thoughts, there came an invitation to call at my old friend's once more.

Accordingly I set out post-haste, and arrived just as the bell was being rung for dinner. To my astonishment, an old gray mare was ringing the bell with her teeth. A small boy led the mare with a halter, and as often as she tugged at the bell-rope fed her a lump of sugar. Naturally the ringing was somewhat intermittent. My host explained that in order to save time he had hit upon this expedient. Old Dolly being superannuated (so to speak) was pressed into this service. In reply to my query, Mr. Jolly admitted that the boy could have rung the bell twenty times while inducing the old mare to do it once, but he insisted that once was a plenty. This was indeed undeniable, but I could not repress a smile at the reasoning of my good friend, for it reminded me of the old farmer who, when shown that he could so care for his pigs as to hasten by some weeks their maturity, assented, but argued contentedly, "What's time to a hog?" Mr. Jolly is hoping that another of the farm-horses will soon wear out, for then he will hang an additional bell, and by feeding the two horses sugar alternately he expects to have the bells rung correspondingly, so as to produce the effect of one alone. In fact, he anticipates the animals' learning to ring the dinner-bells without waiting for their sugar, thus producing the effect of chimes. On one occasion old Dolly got loose in the middle of the forenoon, and rang for sugar of her own accord. The girls in the kitchen had to get four meals that day.

Mr. Jolly's interest in nature, and especially his constant efforts to utilize hitherto neglected forces, makes him a practical Luther Burbank. A striking illustration of this is the case of the electric eels. As is well known, there is a variety of eel that possesses the property of giving slight electric shocks. Mr. Jolly constructed a pond back of the barn, and stocked it heavily with these animals. He erected a system of wires to convey the electricity to the milk-house, where it was designed to run the churn by the new power. The enterprise unexpectedly resulted in failure. The cause seems to be this: There are (as we all know) two kinds of electricity, positive and negative. To be effective, both must be present. In this case one or the other (nobody could determine which) was absent, and naturally failure came. Dorothy Darling (Mr. Jolly's niece) suggested that, as the results were negative, the electricity must have been similar, but this was only a pun on her part and is not entitled to serious consideration.

But the most wonderful thing my friend has discovered is a system of perpetual motion. It is very simple. A large initial supply of ice is the first requirement. This is stored on the second floor of a building. It is used there for the manufacture of ice-cream. The water of the melted ice runs down to the second floor with force sufficient to move the wheels of a small factory. This factory turns out artificial ice fast enough to replace that consumed above. The idea is patented, and Mr. Jolly proposes putting it into operation this winter, laying in at that time the first and essential supply of ice. In this way he can manufacture ice-cream at half the present cost and benefit sweltering humanity. He has invited me to be present on the opening day, and I think I shall go.

W. JAY SPILLBOY.

An Inexpensive Ice-House

AMONG the comforts of the modern farmstead the ice-house holds an important position, especially during the summer season. An efficient type of storage house can be inexpensively constructed by home laborers when they have a little spare time, and the building will more than pay for itself in the first season of its active use. There is



a Middle Western farmer who has been using the same ice-house for the last twenty years, and the building is still in fine, serviceable shape. It is of simple construction, and cost little in time, labor or money. Any other countryman with a few odd moments, several pounds of nails, a hammer and a saw can duplicate it.

This storage house for ice is twelve feet square and rests on a five-foot brick wall that is eight inches thick. It is essential to provide either a stone, concrete or brick wall for the building, as otherwise the house will rot out in a few years. A five-foot wall eight inches thick, such as described above, will cost approximately \$50, while a solid concrete wall of similar construction can be built for about \$25. It is preferable to lay three feet of the wall below grade line, and the rest above the surface of the ground.

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3-12

The fundamental principle of this house was to prevent the circulation of air amid the ice when the house was filled. With this in view, the structure was sheeted up on the inside, while the exterior was covered with drop-siding. Two-by-ten studding spaced at two-foot intervals was used, so that a ten-inch dead-air space resulted throughout the walls of the building. The ice was packed five inches from all four walls of the structure, this space being filled in with pine sawdust. A layer of sawdust a couple of inches in thickness was also spread over each layer of ice, the cakes being placed in on end, as they do not melt so readily in this position as when laid flatwise, while, in addition, they are easier to get out of the house. All the crannies and cracks between the tiers of ice were also filled in, so that, as far as possible, a solid wall was formed and all the air circulation was shut off. Then, when the house was full, an eight-inch layer of sawdust was packed over the top of the ice, and care was exercised to replace this covering after each cake of ice was removed from the building.

Thirty Tons Sufficient for Large Household

In this particular house the door was two feet eight inches by six feet eight inches in size, and it was so provided with a couple of cleats placed at either edge of the door-jamb so that a series of boards could be laid against these cleats and the intervening space filled with sawdust. In this way the house when full could be made absolutely air-tight when the door was closed. As the ice was removed from the structure, these door-boards could be taken down and replaced at the will of the owner. The house was situated in the shade of a large oak-tree in such a way that it was further sheltered from the penetrating heat of the sun.

Of course, one of the prime essentials of an up-to-date storage house of this character is thorough under-drainage. In the building under consideration this was secured by laying a short system of tiles with an adequate fall and a good outlet, and then by filling the floor of the house to a depth of several inches with coarse cinders (in case cinders are not available, coarse gravel will serve the purpose). Then on top of the cinders sawdust was laid to a depth of twelve inches. The house is annually filled to the eaves, and in this condition it accommodates about thirty tons of ice, sufficient to supply a family of a dozen people with ice for six months in the year. In removing the ice from the storage, it is essential to prevent the sawdust from accumulating to a depth of over eight inches above the remaining ice, as otherwise this protecting layer is liable to heat and melt the ice.

Cost of Construction

The cost of constructing such a building will depend largely on the quality of the material used and the amount of labor that is hired to perform the work. Where the farmer does all the work himself, such an ice-house provided with a concrete wall may be built for approximately \$150, while in case a brick wall is installed the cost will be increased about \$25 or \$30. The roof of such a structure would consist of roof-boards covered with shingles. Approximately a saving of one half in the cost of the roof can be made where good roofing-paper is used instead of shingles. With these prepared roofings a better quality of roof-boards must be used, and they must be placed closer together.

In filling the ice-house the only tools needed are ice-tongs, a cross-cut saw or regular ice-saw, a carpenter's straight-edge and an ax. With the straight-edge mark out the cakes to be cut; where the ice is eight or ten inches deep, a cake sixteen by twenty inches in surface dimension is quite satisfactory. Then by means of the ax hew out a starting place for the saw, cut the cakes, load them on the wagon, and haul them to the ice-house where they can be stored away for summer use.

G. H. DACY.

Wages for Farm Help

FARM AND FIRESIDE of August 17th contains an article, entitled "Higher Wages—Better Help." This is a subject of interest to all farmers, and the article no doubt contains some good suggestions, but we must take exception to the statement that "Back as far as 1870 farmers were paying about as much for hired men as they are now." It is barely possible that this may be the case in a few places, but I will venture to say that in the Middle West, at least, the neighborhoods where it is true are very rare. Take the counties of northern Illinois in the corn belt and much of the State of Iowa, a common price for a married man now is about \$40 per month with house and garden provided, also shedding and feed for a cow and horse. It is safe to assert that in the majority of prosperous districts throughout the North and West and Middle West much the same wages prevail. We know of one or two cases recently where a man of this kind got only \$30 per month, and of another who got as high as \$65, but those are unusual instances, about \$40 per month being the common pay. A first-class single man will get, besides board and lodgings and the keep of a horse, at least \$30 per month. These wages were not paid farm laborers

in 1870. Twenty-five years ago \$23 per month was high pay for a single man, \$25 or \$30 the highest for the married man. There are many careful farmers who will tell you that their help have an excellent opportunity to save if so disposed. Most especially is this true of the young man who gets room and board and \$30 per month. More than one farm-owner, broken down from age or ill health and no longer able to work, will tell you that it hardly pays him to run his farm at the wages given help, that the hired men have the profits and not he.

As for the farm laborer's finding it difficult to save enough to buy a farm, it is true the undertaking is a big one. At the present price of good land a laborer in any trade would find it hard to save enough for it. For any laborer to buy a farm means a good many years of toil and economy, even though he be blessed with the good-managing, industrious wife.

There are thoughtful, experienced men in the occupation, both farm-owners and hired men, who will tell you that the single man with his \$30 per month and free board and lodgings, or the married man with his \$40 per month and free house and garden and potato-patch, his chickens and the keep of his horse and cow, stands a better chance of saving the first payment on a good farm than the average worker in other lines.

EMILY BOYLE.

Save Time in Ditching

WHEN beginning a ditch, a great deal of time and labor can often be saved by using an ordinary breaking-plow and throwing out a furrow over the course the ditch is to follow.

Of course, if the ditch makes many abrupt or sharp turns, the difficulty will be somewhat increased.

The course of the ditch should first be determined. Directly over this the plow should pass, throwing a furrow-slice to one side. When the end of the course is reached, the plow should be turned and the course followed back to the starting-point, this time throwing the furrow-slice to the opposite side. The plow should cut as deep as possible. This gives a wide, deep furrow, which in a very few minutes has accomplished the largest part of what would be represented by the first spading.

If the ditch is to serve for surface drainage only and thus be only one or two spadings deep, no great width is required at the top. Often a single furrow is sufficient.

P. C. GROSE.

Hardy W. Campbell, the "Dry-Farming" Missionary

[CONTINUED FROM PAGE 4]

These answers for a time satisfied the desire in Australia for information. But then crossed the sea more tidings of dry-farming successes; and finally Senator McColl, of the Federal Congress of Australia, came to America to look into the matter. He attended the third dry-farming congress at Cheyenne, traveled in the dry-farming regions and made a report to his government. He noted the fact that the land men were booming the new method, and the range stockmen opposing it; that there were many honest doubters, many honest believers and many interested, if not dishonest, partisans on both sides. He noted that the Washington experts and those connected with state experiment farms were in a position of hostility to Campbell, as having no professional standing.

The Farmers Believe in Him

After noting all these things and studying Mr. Campbell and his work, Senator McColl says of him: "His statements have been challenged and his work belittled, but there is one fact that I had in several places to become aware of, that wherever he has gone and taught the people how to farm, the result has been a greatly increased yield from the improved methods he has proclaimed. . . . I must say he impressed me, and when heckled by the Washington professionals he answered with dignity and composure. That the farmers believed in him was shown by the reception he got and the cheering his remarks called forth."

It is only fair to say that Secretary Wilson's opposition to the Campbell system of summer tillage is based on the very cogent reason that its tendency must be to deplete the land of its fertility, and especially of its humus. Campbell insists that the Secretary is not quite fair to the system, in that he assumes that it involves an endless alternation of summer tillage and cropping, year and year about. "We stand," says Mr. Campbell in a letter to the writer, "for first preparing the ground and putting it in perfect physical condition, then cropping it as often as conditions will permit, whether every year, or every other year, or two years in three." As to depleting the soil of humus, Mr. Campbell asserts that the Secretary's opposition is theoretical, and not based on any observations. "because," says he, "this kind of work has never been tested on any of the experimental farms of the United States Department of Agriculture."

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The Market Outlook

Slight Reaction in Hog-Market

HERE seems to be a limit to the price the public will pay for pork. When the price of hogs had gradually worked upward, because of scarcity, to close to the \$9.50 mark in Chicago, the buying public balked and failed to buy pork at the figure the \$9.50 price on the hoof made.

The man who gets to market early is more likely to get higher prices than the one who feeds longer and goes with the rest during winter's heavy receipts

Prices at Chicago had also become too high in comparison with prices in eastern cities to make order-buying profitable, so the shipping demand was correspondingly curtailed.

Probably an Up-and-Down Market Till Midwinter

With these two bear factors operating, the market dropped day by day until a decline of seventy-five cents had been registered. Then consumers' and shippers' demands returned, and the market started back. Prices had gotten out of balance between supply and demand and dropped till a balance was gained and a new start was made on this basis. It seems that a nine-cent average market is all that present supply and demand will support.

Along in midwinter when the winter run makes its appearance prices can be expected to decline, but as a large run is not expected the decline will be small. Until then, the present up-and-down market can be expected to continue.

The demand for lard is increasing with the coming of cold weather, and the supply in the hands of the packers is not large. This has brought about a change in quotations, and heavy hogs now command top prices. With the present bumper supply of corn on hand, this high price for heavy hogs should urge growers to feed to a heavy weight, and those who do will be doubly paid, for large numbers of pigs from cholera-stricken districts are being daily marketed, thus cutting down the future supply of heavy hogs. Present low prices of wheat and flax make the purchase of shorts or oil-meal a profitable investment for balancing the corn ration. These will make the hogs gain faster, and the sooner they are heavy enough for market, the better, for if they can be sold before midwinter they will bring a higher price than if sold after the run is on.

L. K. BROWN, South Dakota.

Mutton and Wool Markets Show Vitality

A MARKED improvement in the sheep and lamb trade became apparent about the middle of October. This was caused partly by the great falling off in western shipments and partly by the improved demand. Packers bought freely, eastern markets woke up from the lethargy from which they had for some time been suffering, and the demand for feeders became the cause of considerable excitement at the stock-yards. Western lambs for this purpose sold up to \$6.50, and sheep from \$4.50 to \$4.75. The following report from the Chicago *Drovers' Journal* for the last week of October gives the range of prices for the same week since 1910:

	SHEEP	LAMBS
This week	\$4.00@4.50	\$6.75@7.25
Four weeks ago	3.65@ 4.35	6.60@ 7.25
1911	3.25@ 3.75	5.25@ 5.75
1910	3.75@ 4.25	6.25@ 6.90

A study of this report shows a steady though not a sensational advance, especially in lambs, with no great falling-off except in 1911, when the markets were flooded with thousands of unfinished sheep and lambs, for the slaughter of which those who yielded to the panic will now have to pay in the prices asked for feeders and breeding ewes.

Up to the third week in October the receipts at the six leading western markets amounted to nearly ten and a half millions of sheep and lambs, being only about 90,000 less than those of last year. A comparison of prices with last year shows very clearly the present strength and vitality of the sheep-market, as well as its freedom from any violent fluctuations below paying prices.

To make up for the falling-off in western shipments, a great increase in the receipts of natives is noticeable, and that, to some extent, has steadied what threatened to be an undesirable temporary boom.

Higher Wool Prices Expected

The wool-market remains firm, showing also more activity. Manufacturers are being crowded with orders. This, together with the strength shown in the recent London auction sales, and the general belief that the world's wool-supply is short, is causing dealers to hold on stoutly, in the expectation of still higher prices. Ohio

washed wools have been selling at thirty-one cents, unwashed at twenty-four cents; Michigan one-fourth blood at thirty cents.

Mutton Now Exceeds Wool in Importance

This expectancy of increasing prices seems to be common to the trade all the world over.

These facts, then, showing the present condition and the future prospects of sheep culture, seem to make the indifference or the prejudice of so many of our farmers in sheep matters difficult to understand. Years ago, when sheep were kept almost entirely for their wool, the tinkering with the tariff dealt a deadly blow to that culture; but now, when the demand for mutton and our increased knowledge of how to produce it make wool a secondary, though still a very important consideration, it seems reasonable to expect that the farm without at least its little flock of ewes and lambs will soon be regarded as lacking one great element of success.

There is a great and growing tendency to break up old pastures under the impression that more money can be made by converting them into a part of a system of crop rotation. If cattle and sheep are to be bred and reared, this should never be done, since a certain acreage of permanent pasture is necessary to their well-being. When pastures are known to produce valuable perennial grasses and clovers, every effort should be made to preserve and increase their fertility. Experiments have been carried on for many years, and the best methods of doing this are believed to be understood.

JOHN PICKERING ROSS, Illinois.

A Marketing Aid

ARE your commission shipments satisfactory? Remember that FARM AND FIRESIDE stands ready to supply its subscribers with the names of the best commission concerns in every city and large town in the United States and Canada.

California Dairy Progress

SOME recent California developments in dairying should be noted by eastern stockmen. The first is the entrance of California cows into the thousand-pound class as butter-producers.

A record of 910.18 pounds of butter-fat in 28,065.9 pounds of milk in one year was recently made by Aralia De Kol, a Holstein cow of A. W. Morris & Sons, Woodland, California. This cow was twelve years old at the beginning of the test. During it she was exhibited at the State fair in September, 1911, and won the butter contest with a 3¼-pound margin over her nearest competitor. The year's record was finished about two months ago, and in the same period of lactation she entered the five-day butter contest at the California State Fair, September 16 to 20, 1912, and made fourth in the aged-cow class, with 11,669 pounds of fat to her credit.

Riverside Sadie De Kol Burke, another cow in the same herd, gave 18,275.8 pounds



Jerseys are popular on the Pacific Coast

of milk in the first six months of a yearly test. Owing to a rather small fat content, her butter production will probably not surpass that of Aralia De Kol by a very large amount. In a single day she produced 134.7 pounds of milk, next to the world's record. Before this is published the official report of the same will have been issued in the Holstein-Friesian Record.

At the State fair referred to above Prof. W. C. Carlisle, of the University of Idaho, publicly announced that the aged Holstein cows exhibited were one of the finest lots of cattle ever gathered in a show-ring anywhere in the world and it would probably be long before the quality of the cows present was equalled again. The cow referred to above, Riverside Sadie De Kol Burke, took first and was also grand champion, being closely pressed by Stafford Mercedes Aaggie Tuebie, a University of Nevada cow, an almost ideal animal. The grand champion of 1911 and Aralia De Kol were both out of the money, owing to the class of animals competing. The fact, though, of Riverside Sadie winning shows that showing type and production go hand in hand.

The winner in the milking contest was Sadie De Kol Acme, a Morris cow, with 12,436 pounds of fat in five days; the second, a Jersey, Wanda of Venadera, with 12,426 pounds; the third cow, a Holstein, had 12,251 pounds, and Californians are asking Eastern milking contests to average up like that under State fair handicaps. The winner in the three to four year old class produced 11,194 pounds, and the winning two-year-old, 9,692. The latter came from the University of Nevada.

The fair was the best on record in entries, attendance and interest. Guernseys have not as yet reached their eastern popu-

larity here, but Holsteins and Jerseys made a remarkable showing. It is interesting to state that the grand champion Jersey bull, a two-year-old, was purchased from an eastern breeder by mail on the basis of butter production of dam and relatives and the assurance that he was close to type.

California cows make a better growth than those in the East and have no ex-



Winter dairying in California offers few climatic difficulties

tremes of temperature to set them back. They will be heard from with big records soon.

DUDLEY J. WHITNEY, California.

Disadvantages of a Small Working Capital

ONE of the greatest drawbacks to successful farming is a lack of working capital. I am not writing of the men who simply raise grain and sell it, as this class requires little capital to start with and seldom have any to finish with, nor am I writing of the men who acquired their land years ago for next to nothing and have raised a goodly family to do the labor. This class, now fast passing, retire to town and pose as successful farmers.

I write of the man who buys land now at from \$100 to \$200 an acre and has to make it pay. The great mistake this man makes is putting nearly all his capital into land and leaving little or nothing to run it with, because on this high-priced land the basis of his success must be live stock and leguminous crops, and, as these do not give the quick returns grain-raising does, he must have more capital, and hence must buy less land. There is not a farmer in the State of Iowa owning one hundred and sixty acres of land who would not be better off in every way if he sold forty acres and used the proceeds to build up the remaining one hundred and twenty acres.

Many Farmers Are "Land-Poor"

I often sit on a hill on my farm and feel sick at the awful waste as I realize what could be and how slowly I am doing it, and as I sit there and see the whole farm before me; with my pencil and notebook, I can figure out that three hundred acres are netting me \$20 an acre and two hundred acres only \$8 an acre. What's the trouble? Too much land. I'm not getting out of the land what is in it. I keep and feed hundreds of cattle, sheep and hogs, and yet I can see that my income would be increased if I sold two hundred acres, built more siloes, kept more live stock and raised heavier crops from the extra manure.

Perhaps some of you have tried it, but, if you haven't, let me tell you it takes some manure to cover forty acres, and this same forty acres will readily take another dose three years later and still not increase greatly in fertility, as you are using up a large part with every crop raised. The least profitable part of my farming is the small grain.

Every crop of oats raised, if thrashed out, I consider a loss, and for that reason I don't thrash it. Perhaps I am wrong, but here are the figures. This year eighty acres of oats, if thrashed, would probably have yielded 3,200 bushels worth, with thrashing expenses deducted, about \$730. That is \$9 an acre. By feeding the sheaf-oats to cattle as a part of a ration, I will probably get more than \$9 an acre from this land, but even with that the fact remains that the land put in oats is a poorly paying proposition. It would pay me much better as a good pasture, and that is what I am now working on. That brings me back to the start of my letter. More working capital is needed to get surer and better, though slower, returns.

W. S. A. SMITH, Iowa.

Diagnosis of Fruit Situation

DESPITE a dry spring, the fruit crops have been very large, though the sizes have been rather small as a rule. Prices for all fruits and some field crops have been quite low, although only wine and raisin grapes have been so low as to be demoralizing to the grower. The trouble with the latter product is due entirely to the difficulty of selling properly through packers under the present system. Otherwise prices have been fairly satisfactory, considering the big crops secured.

About the only crops bringing exceptionally good prices are dairy products and alfalfa. Butter-production is greater than ever before; alfalfa-hay is in fairly good supply in spite of scant spring rains. Other hay is short and prices high.

Early fall rains have been excellent for the stockman and give hopes of a good season in most lines in 1913.

The coming orange crop is rather short.

DUDLEY J. WHITNEY, California.



The FARMERS' LOBBY.

How a Poor Jew Boy Outstripped the Czar of Russia and Convinced a King

By Judson C. Welliver

something else that needed to be done, and he found that California wheat wasn't a paying crop. Good wheat country, lots of people in the world needed wheat, but somehow, by the time the California article got to market, there was nothing left for the grower worth while, to pay him for his production of it.

Here Lubin got an entirely new notion. He bought land and raised a crop of wheat. When time came to sell it, he went to the grain mart and got the prices.

"We can give you so much per bushel," they said.

"But I can't raise wheat and sell it for that figure without losing money."

The brokers shrugged their shoulders. That was no concern of theirs.

"We can't pay you any more," they said with finality. And then again David Lubin's inevitable, "Why?"

They couldn't tell. Their quotations came from Chicago; maybe the Chicago Board of Trade would tell him "why."

He got on the train and went to Chicago. No, Chicago didn't make the price; it got its quotations from New York. He might ask the Produce Exchange there.

So he went to New York and the Produce Exchange. Its officers explained that they based prices on the current knowledge of the world's yields, stocks on hand and crop prospects. The United States Government gathered information for this country, private agencies gathered more, and as for the rest of the world, they got their quotations—which represented a digest of the world's crop information and prospects—from Liverpool.

So Lubin went to Liverpool and found vast mystery about it all. But in the end he learned that Liverpool was the real world's wheat-market. It was that, because a group of great brokers and factors there had a system of gathering crop advices from all the grain-producing areas of the world; having this information, they made prices which were sent out to all the primary and secondary markets. How they got their information was their business; profitable business they made it, too. Having the information to themselves, they could suppress, shade, color it to suit their needs. If they wanted grain to go up, they issued upish crop reports, and vice versa. The world had, in the end, to accept the prices they made because it didn't know enough about the facts to do any better.

David Lubin thought it over a long time. Wheat, as he conceived, was grown to feed people, not, primarily, to be speculated in. He didn't believe any group of men ought to be able, because they were in private control of exclusive information, to profit by the needs of the whole people. He observed that these insiders were wont to pay the producer less than his wheat was worth at times, and to charge the consumer more than it was worth at others.

Organizing International Crop Reports

SO THE idea worked itself out in Lubin's mind, that there ought to be a world system of complete and accurate crop reports, covering all the international staples. To have its fairness assured, it should be a governmental service, entirely beyond the reach of speculative interests. Nay, more; that would not do, because the nation getting the information together might have a national interest. Great Britain, a great wheat-buying nation, would want wheat cheap as possible; the United States, being a seller, would want it dear. The thing must be bigger than merely national; it must represent the whole world's interest in a square deal all around.

Lubin carried this big idea to the British Board of Trade, which is a government department. They were interested, but advised him to go somewhere else because of the suspicion that would lodge against British initiation by reason of its position as a buyer. He tried France, and France was interested but too busy with other things to initiate anything. Then he went to Rome.

After much effort, he got audience of the Italian historian, Guglielmo Ferrero. It was the luckiest accident that ever happened to Lubin. Have you read Ferrero's story of the decline of Roman power? Of how Rome managed to rule the world so long as she could feed herself, but began to decline from

the time when she became dependent on Egypt for grain?

It's a great story; and Ferrero proved just the man of power, knowledge and imagination to understand the big thing Lubin proposed to do. He wrote a wonderful article about Lubin's plan, brought it to the attention of the cabinet of King Humbert, arranged interviews with men in authority, and at length, as a direct result, an appointment was made for the Polish Jew boy to talk it over for ten minutes with the King of Italy!

When Lubin, scared to death, got into the audience-chamber, he couldn't talk at all through the interpreter. The king dismissed interpreter and attendants, and in the best of English said with a smile: "Go ahead, Mr. Lubin; you and I will talk this over by ourselves."

Lubin's eloquence came back; and I can guess how the king listened, for Mr. Lubin has kept me up half a night telling me that same story. He started at the bottom, and developed his theory and his plan.

The result was that the King of Italy became the first fighting convert. He issued invitations in his capacity as a sovereign—a capacity which made such invitations commands—to all the nations to send delegates to Rome to consider plans and effect an organization of a great international exchange and clearing-house for crop information.

The first international congress on this subject was held in Rome in 1905. The king provided a palace for the gathering, building it out of his private fortune: the Palace of the International Institute of Agriculture. That building is now the headquarters of the permanent organization which fifty nations, including all the important ones, maintain there.

The first great task before the practical administrators of the project was to unify and standardize crop-reporting methods of the various countries. The United States and Canada had by far the best systems, and other countries are being led as fast as possible to model their systems on these. Many, of course, had never heard of such systems; they had to begin with the most rudimentary things. But the appeal which the International Institute made to them for cooperation and support was so telling that it captured them.

The organization consists, in the first place, of a general assembly, in which the adhering nations are represented by delegates named by the governments. This assembly meets in Rome, discusses general policies and programs, keeps the Institute in touch with the home governments, and generally serves as a sort of parliamentary body. When it adjourns, it leaves in charge of administration a permanent committee, in Rome, consisting of a representative of every nation. This is a sort of executive committee, and most appropriately President Roosevelt made David Lubin the representative of the United States, and has also made him a delegate to each of the biennial parliamentary meetings.

Here is a list of the headings into which the last biennial assembly divided its discussions. It is given because it presents such an excellent idea of the scope the work has taken; a work, be it remembered, that is carried on for the benefit of the whole world:

Review of the past work of the Institute; administrative matters.

Status and development of the agricultural, statistical and crop-reporting work of the Institute.

The future work of the Institute, with regard to the statistics of visible and invisible stocks, exports, imports and prices.

Diseases of plants.

Protection of birds.

Dry farming.

Agricultural meteorology.

Insurance against damage by hail.

Statistics of agricultural cooperation.

Finance.

Miscellaneous.

Now for a suggestion of some of the practical results of this work. I am assured that, since the work of the Institute has been so far developed and understood by the business community as to give its statistical reports a hearing and acceptance among the business agencies of the world, there has been a distinctly observable decrease in the measure of fluctuations in the prices of food-stuffs. The law of supply and demand has

been more nearly represented in the outworking of price-making forces throughout the world. It is not difficult to understand why this should be so.

Take the present year. For several months past there has been a general understanding in market and commercial circles that this year 1912 was proving an unusually good crop season throughout the world. Most people didn't know just why they had that impression. There has been rather more information about influences working abroad, affecting yields and prices there, and consequently here.

A Banking Experiment Worth Watching

WHY? Largely because of the work of the International Institute. Just the other day a bulletin of the Institute gave out the percentages of estimated yield of various crops, for the entire world. Assuming that the yield in 1911 was to be represented by 100, then the yields of 1912 were: Wheat, 106.7; rye, 117.7; barley, 105.7; oats, 117.8; maize, 117.0.

If those figures are approximately accurate—and the utmost effort is addressed to making them so, and making them better every year—then they mean a great deal to the commercial world.

At present the Institute is helping many nations perfect their reporting and statistical systems, and every season may be expected to see the statistics given in more detail and with more accuracy. It is interesting to know that China and Russia are two countries which are giving enthusiastic adhesion to the work; Australia and the Argentine Republic, of course, are doing so, as would be expected. Indeed, Europe is said to have taken much more serious interest in the project as a whole than has the United States.

It is a curious fact that nothing like satisfactory statistics of world commerce in general have ever been scraped together. The Bureau of Statistics of the United States did some excellent work of this kind, but was handicapped by lack of guarantees of cooperation by the various governments. So the International Institute is taking up this matter, also, with purpose of publishing complete and accurate statistics of international commerce, not only in food-stuffs, but in all sorts of things. The first bulletin on this subject has recently been issued, and others, rapidly increasing in scope and detail, will follow.

Mr. Lubin has given his time and means without return, to this great work. It should have been mentioned that he is to-day a man of ample means to do this, being a member of a great firm of merchants in Sacramento and San Francisco, from which, however, he has long since withdrawn active participation. Latterly, among his other interests, he has been devoting himself to study of the agricultural credit systems of European countries, concerning which the Lobby has had something to say at different times, and which has now been taken up by President Taft in an effort to interest the state governments. Mr. Lubin believes that this system will be of immense value to the agriculture of this country, and it is evident that he is winning more distinguished converts.

Just the other day it was announced that James J. Hill, the northwestern railroad magnate, was going to try out this scheme of giving the farmer money at lower rates of interest. He had acquired control of a big bank in St. Paul and is going to arrange, through this bank, to lend money to farmers in the territory of his railroads, at much lower interest rates than they have been charged in the past. The thing is no philanthropy on Mr. Hill's part; just business. He figures that if he can consolidate the credit of the farmers along his railroads, and make it possible for them to borrow cheaper money, the result will be a big increase of production, which will mean more business for his railroads and more dividends for their shareholders.

The work of David Lubin has already outgrown his original dreams of it. It has been placed on a sure permanent basis. It will be bigger and bigger as the years pass, more and more a tie to bind the nations together in peace, amity and prosperity. It is one of the finest pieces of practical altruism that any man ever conceived and, under the most discouraging conditions, carried to success. The man who has made all this possible is one of the most modest you could imagine. He will not talk of himself, will not permit a photograph to be made if he can help it. It isn't fame or recognition he seeks, but the opportunity to serve his fellow men.

Y

OU can't tell much about where a man belongs in this world, by observing the rank or station to which he was born into it.

I was thinking about the Czar of all the Russias and a Jew boy who was born sixty-three years ago in Poland. Mind you, a Jew, representative of the race and religion especially despised by the rulers of Russia; in Poland, hated and down-trodden by Russia for generations. There couldn't well be imagined a wider divergence of opportunities and stations than between these twain. The Czar was born a grand duke, destined to be czar; and in due time he succeeded to the czarring business, not because he was necessarily interested in it, but because he couldn't help himself.

The other boy was brought from Poland to America when very young, and got his first notions of this world in the Ghetto of New York. He sold papers on the streets; carried a pack; helped his widowed mother raise a family of children; knew all that poverty and privation, the streets and the tenements, can teach of human misery and sorrow.

Each of those boys grew up with notions about doing something for mankind. Yes, Czar Nicholas has those ideas; in a vague way he wants to be of use to his fellow men. He got a really great idea, and got the nations interested in it: the idea of The Hague Congress and arbitration tribunal. He would put an end to war by getting the nations to sit down together and reason things out instead of fighting over them.

About the same time the Jew boy, whose name was David Lubin, conceived a notion of starting a world parliament, too. He would get all the nations into it, and would make it a means to alleviate poverty and promote the fraternity of man everywhere.

Pretty large orders, both of them. You would think that the Czar of Russia would surely have the better chance to make his scheme work. What chance could an unknown Jewish shopkeeper have to compete in so ambitious a scheme with the ruler of the biggest country of earth?

Well, the Jew boy has made his project a success. He has brought the world together. He has shown real results.

The Czar brought them together in his peace parliament—and they have been fighting rather more than usual ever since! The Czar failed where the Jew boy succeeded, and that's why there is a story to be written about this really wonderful man, David Lubin.

While yet a boy he drifted to the Pacific Coast, worked about the mines, at length landed in Sacramento and started a little store. It didn't prosper at first, and Lubin almost starved for a time. But at length the impression got abroad among the people that he was square, that what he sold was worth the money, and generally worth more than it would be if bought somewhere else. Then prosperity came, and Lubin did well.

But it wasn't money that he wanted. It was opportunity to be of use to the world, to other people. He had an imagination; he wondered about the why of things that people about him just amiably accepted as inevitable.

For instance, he noticed that although they raised the most wonderful fruit he had ever seen in California, nobody could make any money out of it. It rotted on the trees or the ground, and when he asked his everlasting "Why?" they told him there was no market. Lubin knew better. He knew that when he was a Ghetto boy he wanted that fruit and couldn't get it. He knew there were more children there than ever, still wanting it.

He went to Collis P. Huntington, who then was the Southern Pacific Railroad, and told him it was all wrong. Huntington scoffed at first, but Lubin interested him, showed that it meant money for the S. P. and Huntington, and convinced him. The result was the organization of the great California cooperative fruit-growers' scheme for marketing their fruits. They established marts all over the country, pooled their produce, shipped in great quantities, guaranteed vast tonnages that made it possible to command reasonable rates—and made California the great fruit region of America.

Lubin didn't do it because he wanted to make money out of it. As soon as the scheme was established, he cast about for



The ADVENTURES of a BENEFICIARY

by *W. J. Nichols*
Illustrated by *W. C. Nims*

Chapter I.—Uncle Nathan's Remembrance

MR. DODD settled himself in his swivel chair, caught a knee in the angle made by the drawers of his desk and the top, and began to swing himself to and fro, slowly and through a short arc. The young man on the other side of the desk was interested. A woman, he reflected, might have sought relief from troubling nerves by rocking, but Mr. Dodd had found a way to turn the plane of soothing motion through an angle of ninety degrees. However, there had been no suggestion of femininity about Mr. Dodd, or of worry; his expression, in fact, portraying certainty in the views he had been expressing. The young man envied him this certainty. Personally, he found so many things in life that might be looked at in more ways than one that finality of opinion roused his admiration.

"It is all very well, Mr. Wright, to say that the situation is unusual," Mr. Dodd remarked, "but you cannot but admit your own action is a factor. You were under no obligations to accept this bequest by your uncle.



"'Goin' away.' The old fellow spoke quietly, but with no . . . vagueness of intention"

You elected to do so, and, in effect, you bound the bargain by drawing upon us with promptness and—"

"Ferocity, I should have called it," the young man amended. "Five hundred real dollars! What would you have, Mr. Dodd? A season of soul-searching? That would have been no way to treat something that beckoned like an affinity you embrace first and get introduced to afterward. No sir, I drew the money, and thanked the hand that bestowed it."

"And proceeded to expend it, possibly?"

"It had wings, and it flew," Wright admitted shamelessly. Indeed he seemed to enjoy the confession. Mr. Dodd nodded. An extra line or two showed about the corners of his mouth, and he lowered his eyelids a trifle.

"That, in itself, would hardly create an unusual situation," said he. "Suppose we count it merely an incident. The question now is, what are you ready to do?"

The young man, who had been lounging in his chair, sat up. "I'm ready to carry out that bargain to which, as you very justly remarked, I've bound myself," he said quickly. "Only I have to confess I don't yet get the whys and wherefores and whats as clearly as I ought to have them. There is a quarry, as I learn, and that's where the five hundred came from—bless its memory!

Then there's a ferry, as you tell me, and that and the quarry fall to me bound with indivisible bonds. Now, quarries let on good, long leases are all right. They appeal to my sense of the proprieties. But ferries! I say, Mr. Dodd, that's another story. I never cared much for ferries. Somehow they don't rouse enthusiasm. Couldn't this one be turned over to somebody? I'd be reasonable; I know I should."

"There can be no lease," quoth Mr. Dodd. "You don't get your Uncle Nathan's point of view, I fear. This ferry has been in the family for generations. He carried it on himself, and he desired a Wright to carry it on after he was gone. And when your uncle made up his mind to anything, he was not the man to change. By the way, were you aware that he always wore boots, Mr. Wright?"

"Never heard of that," the young man said, adding apologetically: "You see, I didn't know Uncle Nathan very well. In fact, I'm not sure I ever saw him. I've fancied my father and he were not especially congenial."

Mr. Dodd coughed, and thus avoided the pitfall of the likings of the previous generation. "I mention the peculiarity to illustrate the—ah—ah—permanence of your uncle's views. A man who wore fine calfskin boots of the style of 1865 in the first decade of the twentieth century could never be accused of vacillation. His boots, Mr. Wright, came to be quite a matter of local celebrity."

"I can understand that better than the ferry."

"Well, the ferry story is longer," Mr. Dodd explained. "It goes back to colonial days, as a matter of fact. In order to assure proper accommodations for travelers desiring to cross the larger streams, the custom rose of establishing ferries. They were put a reasonable distance apart—usually three miles—and to give the ferryman fair returns were made monopolies. That is, the authorities, having fixed what were regarded as reasonable charges, forbade competition. Some of these ferries became very valuable, and were handed down from father to son as regularly as the home farm. The ferry in which you are interested passed into the possession of your family at the time of the Revolution. It had belonged to a Tory who fled to Halifax and whose property was confiscated. There was a marked segregation of the—ah—the sheep and the goats at the time, Mr. Wright; and, I may add, of the goats and their valuables."

"The story is understandable so far," the young man observed sagely.

"Ever since then a Wright has been in charge of that ferry. It came to your uncle in his turn, and he has passed it to you. In his will he left the franchise coupled with the quarry. If you accepted the bequest—of both, mind you—we were empowered to make payment to you at once from accumulated rentals of the quarry. This has been done, Mr. Wright, and now it is incumbent on you to keep the bargain in all its details."

"Taking charge of the ferry personally?"

"In the present situation that hardly can be avoided."

The young man sat silent for a moment. Then he said thoughtfully, "That involves residence, I should imagine."

"The inference is correct. A house is part of the ferry property."

"Oh!" The exclamation lacked joyfulness. "And where may this ancestral heirloom happen to be?"

"About eight miles below the city." "Oh!" Wright repeated. "I think I caught an idea of the region from the car-window, coming up the valley."

"You may have done so," Mr. Dodd admitted. "I think no stops are made by express-trains in the neighborhood," he added casually.

"That would be my idea, if I were running them," Wright assured him with a touch of grimness. Then he smiled, and by the smile added considerably to the picture of unhappiness he presented. "Honestly now, Mr. Dodd," he said with feeling, "as man to man, I'd like to ask you a question: As a disinterested observer, wouldn't you say I'd swallowed bait, hook and sinker, and that dear old Uncle Nathan had landed me for fair?"

Mr. Dodd permitted himself a single chuckle. "Your uncle was a remarkable man for knowing just what he wanted; I don't feel at liberty to say more—I drew the will."

"That's all right; I appreciate your position," Wright said. "After all, one has got to be in the charmed circle itself to catch the full flavor of one of these good old family rows."

Mr. Dodd suffered this dictum to go unchallenged.

"Barring a bolt," Wright said, after a weighty pause, "I don't see what I

can do except take my medicine. One thing or the other, isn't it? Frankly, I'm more or less accustomed to the society of my species. I've been used to rubbing elbows. Down there now"—he nodded toward the south—"there won't be much steady company, I take it, except the boat-crew."

"Eh?" Mr. Dodd spoke as one not quite comprehending that which was heard.

"The boat-crew!" Wright repeated a bit testily. "If there's a ferry, there's a boat, isn't there?"

"Certainly, certainly!" Mr. Dodd hastened to agree. "There'll be two boats at least."

The young man caught a little encouragement. "Glad to hear that," said he. "Now I'm in for this thing, I'm going to see it through. I'm not going to run away, though I'd amazingly like to. By the way, though, we've talked about a bargain, but all I've heard is my end of it. Who is the party of the second part to keep me up to the mark?"

Mr. Dodd's countenance assumed solemnity of expression. "The State of New Hampshire, Mr. Wright," he said almost sepulchraly.

"The State?" Wright repeated, incredulously. "What in the world has New Hampshire to do with me and this precious ferry?"

"A lot!" quoth Mr. Dodd. "The State, as the successor of the province, assumed its contracts. One of them was this ferry franchise, and as the State grants certain privileges to the holder of the franchise, so it requires that he shall perform certain duties. It is all very clearly set forth in the statutes. When you have leisure, you should study them, but meantime you will be safe in taking my advice, and regarding yourself as very thoroughly bound to carry out the terms of the contract. And that contract, I may add, is not to be abrogated save by the consent of both parties, of which the State is one."

"And I'm the other," Wright said ruefully. "And all against my will. I must say it impresses an alien and a stranger to your grand old commonwealth as a mighty curious arrangement. I trust you won't mind my saying so, Mr. Dodd, but there ought to be some form of current warning to the wayfarer that he is likely to find himself involved in entangling alliances with a sovereign State. This thing of discovering I'm one of the high contracting parties is a good deal of a



"'Aren't you in somewhat of a hurry, friend?' Wright inquired solicitously. 'What's the matter?'"

jolt to a modest man who'd rather lead the simple life. It's a bolt from the blue. Me and the People—that's a partnership idea it'll take time to get used to."

"Doubtless," Mr. Dodd observed rather kindly. "You see, it results from the provisions of the will. It is no common thing, I beg you to understand, to inherit so ancient a—ah—ah—distinction."

"I'm with you there!" the young man said feelingly. "I dare say there'll not be many more of us hereditary ferrymen?"

Mr. Dodd's eyelids drooped. "It happens you are the only one left in all New Hampshire," said he.

"Distinctions crowd upon me!" Wright exclaimed. "But the titles now? There ought to be some with the job. I ought to be at least a commodore."

But Mr. Dodd nipped such hope in the bud. "Our state history is silent on the subject," said he, "and your uncle was content to pass as a plain mister. And I might suggest that he was not a gentleman to waive anything he had reason to believe justly his."

The uncle's nephew sat thoughtful for a little. "I suppose it's what you might call a steady job," he said at last. "Involves a good deal of supervision, that is? You said something about a house, I believe."

Mr. Dodd's eyes were almost closed now. "Well, for a time, I'm afraid you'll have to keep a close watch on the ferry," said he. "Still, there'll be a season of ah—ah—leisure. Our river generally freezes in December, Mr. Wright, and sometimes the ice doesn't go out till March. That ought to give you a chance for an—ah—ah—outing. Your uncle of late spent his in town."

"Oh!" Wright observed non-committally. He rose from his chair, meditated for a moment, and added: "Perhaps I might as well move in and take possession. Somebody can be found to carry me to the ferry, I hope."

"I'll telephone for a conveyance," Mr. Dodd said readily. "And, by the way, Mr. Wright, I trust you'll not take it amiss if I add to your equipment a few trifles you may find useful. It's my wife's idea, to tell the truth, and she said she didn't believe you'd find things in any too good order, with nobody really in charge since your uncle's death. You know how the ladies are, bless 'em, about such things, and Mrs. Dodd is as sensible as they make 'em, if I do say it myself."

"I shall bless her charming thoughtfulness a thousand times!" the young man said warmly, and Mr. Dodd appeared pleased by the little speech.

"Well, she is thoughtful, and she is charming," he said with conviction. "She'll be glad to hear that you've tackled the job with good courage. Keep a stiff upper lip. There'll be things you're not accustomed to, but—well, I'll leave you to find them out for yourself and deal with them in your own way. Besides, there are some summer folks moving into that district, I hear, and you'll see more or less of them. There's one family in particular that I hear well spoken of. Lansing is the name—I don't know much about them personally."

"It's just a chance of course, but it happens I know a family of that name," the young man remarked. Mr. Dodd was of opinion that he might have said more, but the door opened, and in limped a tall, thin, old man, sharp-featured and gray of hair and beard. Mr. Dodd wheeled to the newcomer.

"Why, this is good luck, Mr. Plummer," he said. "You're just in time to meet Nathan's nephew, Mr. Emery Wright of New York. I have been talking over matters with him, and he is going down to the ferry to-day." Then he turned to the young man. "Mr. Wright," he said, "this is Mr. Matthew Plummer. You would, of course, have met him in a few days, for he is the executor under the will, but it is all the better you two should get acquainted now."

Mr. Plummer scrutinized the heir with great deliberation before he extended a cold and bony hand.

"So you're Emery, eh?" he said. "Well, I wouldn't have picked you out of a crowd, but then I don't know as I ever laid claim to second sight."

"Then I'm afraid I very little resemble my uncle," Wright returned, not wholly, it must be confessed, as if the fear were a burden upon his soul.

"Didn't say that," Mr. Plummer objected. "Now I look at you again, there is a resemblance—in a way, that is. If I stick my thumb into a lump of putty, I get an impression of the thumb, don't I? And that's a sort of resemblance, ain't it? Well, that's the way you resemble Nathan. Where he stuck out, you stick in. Mighty fine man, Nathan was; eh, Dodd?"

"Yes," said the gentleman addressed. "Goin' right down to the ferry, eh?" Mr. Plummer continued. "Made up your mind to take holt, I reckon."

"Yes, I am going to the ferry," Wright said calmly. "You see, I can't well help

myself. I drew some money, and it's all gone, and I can't repay it, and that appears to settle the question."

"Shucks!" said Mr. Plummer contemptuously. "If you don't want to go, why do ye? What you'll get from the quarry ain't so much nohow. Might run away, mightn't ye?"

"Yes, I might," Wright said dryly.

Mr. Plummer studied him for an interval. "Dodd's told you what's what, I reckon," he said, when moved to speech. "That's what he's paid for. Well, I'd rather pay him than any other lawyer I know, but that's not sayin' it's much of a trade where a man makes a livin' for a big body by workin' his tongue. Still, he likes to talk, and I don't. I dunno as I've got anything more to say, unless you want to ask me something. Say, though, there's one thing maybe Dodd didn't think of. Your Uncle Nathan wore boots. Didn't know that, did ye?"

"Yes; I have been informed." Mr. Plummer gave the statement scant heed. "Nathan was mighty sot in his ways, young man," he said impressively. "He wore boots—I don't want you to forget that. He wore boots, and he wore 'em till he died!"

Chapter II.—Welcome to the Ferry

THE plump brown horse had traveled the greater part of the road leading from the town to the ferry, but he had taken his time and given the passenger who sat beside the driver opportunity to regain something of his normal spirits. Truth to tell, young Wright's courage was hardly as good as Mr. Dodd, for instance, might have supposed it to be when he quit the lawyer's presence; but the hour's drive and the sunshine and the breeze had served as arguments that this world, after all, was a pretty good one. Incidentally, he was beginning to acquire a healthy curiosity as to the spot to which he had contrived to consign himself for an indefinite time to come. Now and then he had a glimpse of the river, on whose bosom he might infer swam the ancestral fleet. Once or twice from the farther bank came the shriek of a locomotive whistle, and when he looked for the plume of steam, he saw, too, the embankment along which rolled the trains. It seemed a very high embankment, an impression helped no doubt by the low hills in the background, bordering the broad valley.

On his own side of the river he noticed a terraced effect, as if the stream once upon a time must have been vastly greater, and then must have left, as it shrank, sharply defined slopes to mark various stages in its subsidence. To his urban eye the land was languidly tilled, though it was well cleared and fenced. The houses disappointed him. As a rule, they were large and substantial, but they lacked the trimness and order of the suburban cottages, which in his limited experience had stood for the "country." Most of the folks he met nodded to his driver, and the driver nodded in return, saving his speech as if it were golden. Wright liked conversation, and now he was ready to exchange ideas with his companion. He considered various promising topics, and finally hit upon the safest. That is, he asked the distance still remaining to the ferry.

"Two mile," the driver said, and relapsed into silence.

Wright emulated his reserve for a little. Then said he: "This country's all new to me. I suppose it's a good deal alike all along the valley. Still, I'm rather curious to see the ferry."

The driver heard the statement unmoved.

"You see, I'm going to—er—er—live there," Wright explained with a confidential air. This time his companion was stirred.

"Well, somebody's got to," he said tersely.

"Quite so," Wright responded. His expression grew thoughtful. "You do not appear to regard it as an especially desirable place of residence; yet you say there are always people there."

"So there is in jail."

"Why, that's true," Wright said genially. "Do meet people in all sorts of places, don't you?"

The driver cast him a suspicious glance. Then he spat over the wheel and remarked with emphasis: "All I know about either of 'em is from the outside; but give me my choice, if I had to stay at one or t'other, I'd pick jail every time."

Wright's manner betokened interest. "I'm a bit sorry to hear that," said he. "I've got to try the ferry—at least first."

Jehu shifted his position the better to inspect his passenger.

"Ain't much like your uncle," he said judiciously. "He stood it all right."

"And you don't think I can?"

"Well, he always wore boots," he said with an air of effectually disposing of the subject.

At this point conversation lagged and was not resumed, even when the plump nag ambled into a side road and headed

toward the river. It was not a very good road even for a branch from the main highway, and Wright could infer from its combination of grass patches and ruts that it was neither much used nor considered worthy of repair. A third of a mile away, perhaps, a group of buildings showed against the fringe of trees along the bank of the stream, and as he drew nearer he made out a house, weather-beaten and apparently very old; a barn guiltless of paint and probably a contemporary of the house; a small structure of slightly more modern type, and a shed or two. The house stood close to the road, from which its worn stone steps were separated by hardly a dozen feet of scraggly turf. The door above the steps was paneled, and above it was a protecting ledge too narrow to be of practical value. On either side of the door were windows of many small panes, curtainless, grimy, with cobwebs in every corner. At one side of the entrance a vine had taken root nobody could tell how many years before, and, being preserved alive beyond all reasonable expectations, now presented the spectacle of a thick and twisted stem and a thin and feeble set of creepers, which found uncertain support against the old clapboards.

There seemed to be nobody about when the wagon drew up at the door, but as the driver alighted a grizzled ancient in shirt-sleeves came around the corner of the house.

"Be you Nathan's nephew?" the old man demanded. His tone was gruff, but, for all that, there was a trace of eagerness in it.

"I am Emery Wright," the owner of the name admitted, not at all eagerly.

"And you've come?"

"Undeniably."

The old man turned sharply and strode out of sight.

"That's Bill Nettles," said the driver. "Worked for your uncle; been sorter caretaker since he died."

"Oh!" Wright said. He reluctantly descended and walked to the rear of the wagon, whence the driver was removing his effects. A small trunk came first, then two or three flat packages, of whose safety Wright took pains to inform himself, then a valise and then a large covered basket and a pasteboard box.

"All present or accounted for?" the driver asked.

"All."

The driver climbed into the wagon and picked up the reins. "By, then!" he said over his shoulder. The creak of the wheel against the wagon-body roused Wright to understanding of the situation. "Look here!" he called. "Aren't you going to help me carry this stuff into the house?"

"Hadn't thought of it," quoth the departing one. As if by intuition, Wright knew that the man had meditated proffering this aid, but finally had decided not to do so; and the knowledge had a stiffening effect upon his moral and physical backbone.

"You go to thunder!" he shouted. The driver grinned widely.

"What you frettin' about?" was his farewell shot. "Said you'd rather be here than in jail, didn't you?"

To show his contempt for such repartee, Wright turned his back upon the speaker, and thus was just in time to observe Mr. Nettles's reappearance. The old man was still in his shirt-sleeves, but in one hand he bore a carpetbag, while a coat thrown over his arm helped to confirm the impression that he was on the point of departure. He saw Wright of course, for the young man stood almost in his path; but by no word did he acknowledge his presence, and he marched along as indifferently as if the newcomer had been a post. Had he that comparison in mind, however, it would have been his business to amend it to a semaphore post, for an arm shot out and halted his progress.

"Aren't you in somewhat of a hurry, friend?" Wright inquired solicitously. "What's the matter? What are you doing?"

"Goin' away." The old fellow spoke quietly, but with no hint of vagueness of intention.

"But why this haste? You're the man in charge. You must have some things to tell me."

"I hain't!" Nettles assured him.

"Come now!" Wright said with signs of exasperation. "If I'm to take over your job, you've got to show me that you hand over the establishment in good order. You've been running the ferry and handling the receipts, and I don't imagine you go to the trouble of banking 'em every day. Where's the money? Where are the keys of the house? Where are the account books? Where shall I find the crew of the boat or the boats? You can't cut and run like this! I've got to know about things!"

"Key's under the mat; money's in the in box on the shelf. [CONTINUED ON PAGE 31]

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The Risk of Chance Acquaintance

By William Hamilton Osborne

Illustrated by J. Lawrence Stone

LOUIS, waiter No. 3 at Raphael's, deftly shunted from the pile of dishes that he carried two small saucers, one in front of Tillie Northrup, and the other in front of Amy Ford, her friend. Upon each saucer was an infinitesimal block of red jelly. Tillie Northrup wrinkled up her nose in disappointment.

"Amy," she exclaimed, "have you ever noticed—I wonder why it is—you'd think cranberries were worth their weight in gold. There isn't a restaurant in New York that isn't stingy about cranberry sauce. More turkey than you can eat, and lots of stuffing, but when it comes to what you want—what you're looking for—cranberry sauce—there's nothing doing, Amy, I can tell you that. Why, home—"

Tillie stopped. Her chin quivered. She blinked her eyes. This solid, disgusting little block of cranberry had brought home very suddenly and very violently back to her memory.

"Amy," she went on, "some day, when I've made good, I'll take you home some Thanksgiving, and show you what cranberry sauce really is."

Amy sighed. She was clearly puzzled. "Can't understand," she returned, disposing of her cube of sauce at one mouthful, "why you didn't go home for Thanksgiving. If I'd had a home, I'd have gone in a jiffy—and haven't you made good?"

"Nope," responded Tillie, "you don't call eight dollars a week 'making good,' do you? I'm throwing a bluff to the people home, Amy. They worked themselves to death to put me through, and when I go back, well, I've got to go back—big. Besides, I wanted to blow you to a turkey dinner. I owe you a good deal."

She looked at the clock. "Get a move on, Amy," she pleaded; "it's nearly two, and I've got a couple of tickets for Clara Burdette in 'The Mouse'."

Amy's eyes glistened. "You're a dear," she exclaimed rapturously; "you're always springing something unexpected."

"Louis," exclaimed Tillie, as that functionary glided past them, "bring us four more portions of cranberry sauce, and be about it, please."

"Oui, madame," said Louis. Amy leaned across the table, and laid a hand upon Tillie's wrist.

"Just look who's here," she said. Tillie looked, wondering. "Not *that* way, dear," whispered Amy Ford; "just next door to you on the right."

Next door to Tillie on the right, at another small table, there sat three people, two old ones and one young one. One of the old ones was a man, and one a woman. The young one was a man—very young, very fresh as to complexion, very bright as to eye and very well dressed. He was leaning over the table, engaged in conversation with his elderly companions. Judging by the glow in their faces, he was the apple of their respective eyes.

"Funny thing," he remarked in a strong, pleasant voice, "that you can never get enough cranberry sauce anywhere in Manhattan. I've eaten turkey everywhere I think, and so have you, but they draw the line at cranberry sauce."

Amy Ford giggled soberly. "He's saying just what you said, Tillie," she whispered.

"He couldn't have heard me say it," whispered back Tillie; "I never talk as loud as that."

"Louis," cried the impatient young man, "cranberry sauce. Bring us all you've got, you understand."

He stopped. For the first time he looked at Tillie Northrup. He stared at her for an instant, and the color slowly crept up above his collar. Then Tillie looked at him, wide-eyed, wondering. He held her glance for one heartbreaking instant. Then, his face flooded with crimson, he dropped his eyes to his plate.

Louis stood at attention. "Oui, monsieur," said Louis.

The young man did not respond. He merely ate with rapidity, swallowing his food with jerks.

"Oui, monsieur," persisted the impatient Louis.

The young man looked up at Louis in mild surprise. "Well, what do you want, Louis?" he demanded. "What the dickens are you after, Louis?"

The old lady opposite raised her fork slightly. "You were asking for cranberry sauce, Stuart," she reminded him.

"So I was," said he absently and without enthusiasm. "Cranberry sauce, Louis," growled the old gentleman. "Bring a pailful of it, do you understand?"

"A pailful," nodded the complacent Louis; "oui, monsieur."

Amy Ford looked the three people over calmly. "His name is Stuart," she confided to Tillie.

"I know it," responded Tillie, her eyes on her plate.

Amy looked at her, astonished. "Tillie Northrup," she cried in surprise, "what's the matter with you?"

"With me?" demanded Tillie.

"With you," repeated Amy; "your face is as red as fire."

Tillie thought for an instant. "I nearly choked," she said.

Over at the table on the right the old gentleman kept up his pleasant growl. "You were hungry as a bear, Stuart, when you came in," he said, "and now—"

"I'm hungry, all right," responded Stuart, making a vigorous attack upon his plate. "You wait and see."

The old gentleman waited, and he saw—he saw Stuart cast his glance once, twice, thrice, to the southwest—always in the same direction—and noted his distraught manner. The old gentleman turned to the southwest, and looked at Tillie Northrup.

"H'm," he acknowledged to himself, "pretty girl."

Tillie counted the times that she met the eyes of the man called Stuart—five times in all, no more than that.

It was Amy's turn to look at the clock. "Don't forget 'The Mouse,' my dear," she said. When she looked at Tillie again, Tillie's eyes were full of tears.

"What's the matter, dear?" queried Amy.

Tillie shivered. "I don't know," she answered soberly, "something came over me. I ought to have gone home. I don't know what it is that ails me—something." She rose and drew on her long coat. "Come on," she exclaimed.

As they left Raphael's, a strange thing happened. The exit at Raphael's was not visible from where they had been sitting, nor was it visible from the table on the right. They had been dining in the wing. But as they left it so happened that Amy Ford slipped first through the revolving door. Tillie was about to follow her, and at that instant someone's hand was laid upon her arm. Tillie turned in surprise. The hand belonged to the young man of the name of Stuart. He was flushing painfully. A startled, feverish glow was in his eyes.

"I beg your pardon," exclaimed Tillie, frightened unaccountably.

He tried to speak, but could not. But instead of speaking he merely thrust one hand into hers, and left in hers a flimsy piece of paper. Then without a word he turned and left her. Tillie darted through the revolving door and joined Amy. The whole thing had taken but an instant of time. Amy had seen nothing of it, had never known.

Tillie Northrup looked at the bit of flimsy paper for the first time, in the solitude of her little room at six o'clock that night. It was a bit torn from the margin of a newspaper. On it, in a careless scrawl, appeared these words: "Please be at Raphael's Saturday at half-past two. Utmost importance. S. H."

Tillie was at Raphael's on Saturday at half-past two. Never for one instant had she hesitated, not once had it occurred to her not to go. She went directly to the same table. She did not look about her, only she felt that the wing was well-nigh deserted. She seated herself, her heart beating like a trip-hammer, keeping her eyes upon the bill of fare.

"Oui, madame," said Louis.

But Louis was in some mysterious manner brushed aside, and in some mysterious manner he immediately disappeared. In his place stood another man. This man seated himself on the other side of the table, facing Tillie. For an instant there was silence. Tillie raised her eyes to his, was conscious that both he and she were painfully embarrassed. Then she smiled. This broke the ice.

"I'm glad you came," began the man eagerly, "I— I didn't know where to find you again, and I couldn't lose you. I had to act at once. My name is S. Hungerford."

"Stuart," she corrected in a low voice.

"Stuart Hungerford," he assented. "I've never seen you but once in my life, but that once was enough." He paused. It was apparent that he was painfully embarrassed.

"Listen," he went on desperately, "do—do you believe in—love at first sight?"

Tillie raised her eyes to his and let him have the full glory of them. "Yes," she faltered, "but only—only since the—the other day."

This was the first of many meetings—and a *ll* clandestine. Clandestine on Tillie's part, because she didn't tell Amy Ford. Amy never could have understood. Clandestine on the part of S. Hungerford, because he didn't tell his elderly companions. They never could have understood.

"I'm a sort of—of a kid," he confessed to Tillie. "My uncle and my aunt—well, they're mighty careful of me. Some day they're going to pick out a girl for me. They've got it fixed."

"Have they—picked out the girl?" asked Tillie, worried.

He shook his head. "They can't find one good enough," he said.

Tillie turned upon him with a new expression in her eyes. "They must never find one," she exclaimed fiercely, jealously; "there must never be anybody for you but me."

His heart leaped within him. "Do you mean that?" he exclaimed.

"Mean it?" she echoed. "Don't you know—"

He clutched her tightly for an instant. Then he held her at arm's length. This was only a short month after their first meeting face to face. "You'll—come—with—me—now?" he exclaimed.

She closed her eyes. "Yes," she whispered in response.

Together, hand in hand, they sauntered forth. Together they stopped at a small, dingy jewelry-shop while he bought a plain gold ring. Together they slipped into a side street and ascended the steps of a dingy house next door to a dingy little church. Together they faced the rector of the church. "Go back over it all,"

hoarsely exclaimed Hungerford, as they left side by side, "and tell me—sweetheart—tell me—could it have been different than this—it had to be, didn't it—it had to come to this."

"We just couldn't help it, Stuart," she whispered back; "it had to be."

A few days later, in the cool gray dawn of retrospection, they began to reason. Not to regret; there was no such word in their vocabulary, so it seemed. But it was necessary to plan, and to plan carefully. Tillie broke the news to Amy Ford. Amy listened in wide-eyed disapproval.

"What do you know about him, Tillie?" she cried. "I thought you had more of a head than that."

"I couldn't help it, Amy," protested Tillie.

"You don't know a thing about the man," said Amy. "I—I know everything about him," returned Tillie.

"What, for instance?" queried Amy.

"Everything," repeated Tillie.

She did know something about him, it is true. She knew that he was, just as he had said, a sort of a kid. She knew that his elderly companions were the Symingtons, that they were rich, that Stuart Hungerford was the apple of their eyes, and she knew, and felt, quite as strongly as did Stuart, that it was impossible, as yet, to tell them that he had married her. There is nothing in the world so strong as domestic fear. Stuart felt it. He simply couldn't tell these people about Tillie. And Tillie, in the circumstances, didn't want him to.

"Never mind, dear," she told him; "something will turn up, some opportunity; let it take its course."

They picked out a cozy little apartment in the eighties, a place easy of access, and spent hours there together, this young, reckless husband and wife. But Tillie kept on earning her eight dollars a week. Once she clutched Stuart fiercely by the arm.

"Home," she cried hysterically. "I never thought of home. How can I tell them? We're in the same boat, Stuart."

It wasn't that the people home wouldn't approve of Stuart; but the shocking thing was that she had not confided in them beforehand. Stuart and she had simply shut out the rest of the world in their reckless matrimonial escapade. There was no room in their ecstasy for anybody else.

"We'll have a devil of a time straightening things out one of these days," groaned Stuart whimsically. "You don't know what I'm up against. You don't know the Symingtons. I'd rather be a martyr at the stake than—"

"Don't tell them," she pleaded, feeling for him. "Let us dream in peace for a while longer."

They dreamed. There was a rude awakening. The Symingtons made up their mind to go abroad—with Stuart. Stuart had been restless of late—had been growing thin. It was for him, and him alone, they were making the trip. [CONCLUDED ON PAGE 31]



"Stuart," she cried, "is it you? Let me feel of you."



Sunday Reading

What is Thanksgiving to You?

By Alice V. Burrell

WHENEVER I feel at all discontented or unhappy, I make myself repeat over and over that little couplet from one of Robert Louis Stevenson's books:

The world is so full of a number of things,
I am sure we should all be as happy as kings,

and pouf! almost before I know it, my low spirits have been blown away. It's a good antidote for blues, that whimsical little rhyme.

But I am not going to talk to you about unhappiness or downheartedness, because there should be no room for such moaning Banshees at this, the Thanksgiving, season. The world is indeed so full of a great number of very good things that we should all be as thankful as it is in our power to be.

I believe that we have grown so accustomed to thinking of Thanksgiving as the one day out of the year especially appointed by our President on which to give thanks that we almost forget that there are three hundred and sixty-four days left when it is quite as fitting that we be thankful. It seems a pity that the thought of this one general Thanksgiving day should blot out the giving of thanks for the rest of the year. And yet, is it not so? The day before Thanksgiving, the day after, do we arise with the same exalted feeling of doing honor to the Father "with praises of thanksgiving" that seem to lift us far above the workaday world on the day of Thanksgiving itself? No, I am sure we do not, and it is all because we lay such stress on the custom that was instituted by our Puritan forefathers, of piling up our thanks and waiting until the one day out of the three hundred and sixty-five has come, to tell our Lord that we are grateful and thankful for all the blessings He has bestowed upon us during the year.

To be sure, this is not meant to be a criticism of our ancestors of the Mayflower. In setting apart a day to give thanks for the success of their crops and their safe deliverance from the attacks of Indians, they could not know that this would establish a precedent for their descendants to feast on turkey and cranberries and pumpkin pies, served with and without the sauce of thankfulness. For, woe be it, the spirit of thanksgiving is often merely a word at these heavy-laden boards of ours. The children, perhaps, are thankful for the turkey and the goodies, but the "grown-ups"—are they properly thankful for all their blessings, for their homes, children, love, happiness and all that the world holds dear? Yes, sometimes!

People are not as a rule knowingly ungrateful or unthankful. They simply do not realize how many good things there are in life that we may all enjoy.

This wonderful, crisp November day, when the dawn came touched with a silver mystery of frost, the clear blue of the sky and the brilliance of the sun over that stretch of woodland yonder! Are you grateful for it? Do you realize that it is yours, if you claim it? And then that crop of golden grain stored safely away in your barn! Are you thankful for the warm summer days and the sunshine and rains that made it sprout and grow and ripen for you to harvest?

The world is indeed so full of "a number of things" to be thankful for that we should all go about with thanksgiving everlastingly in our hearts. The glories of a late autumn sunset—what are the masterpieces of the world of art compared with this masterpiece of Nature? Even though you have never seen a Turner, or a Hobbema, or a Ruysdael, or a Corot, and have seen that marvel, a perfect sunset, you are rich in experience. True, this is something that all men can share alike, but they do not all share it alike, because they cannot all see it with the same eyes. And the glorious pageant of the autumn of the year; the slow giving over of the forest and the woods and fields and streams to the sleep of winter. Are you thankful for all this wonderful beauty, when Nature seems to outdo herself in painting the forest with a brush dipped in magic colors? There never is a season of the year when the world is not beauti-

ful, and beauty is a very good thing to be thankful for. Even though our personal share of the world's wealth is not great, we still have much to be thankful for in the panorama that nature spreads out for us from day to day.

I am sure that the richest man in the world does not behold the beauty of an icicle-encrusted "king of the forest" with greater joy than I, and in that experience I am as rich as he. I know that the most noble princes in all the world could not feel keener happiness than I at the note of a thrush at early dawn. Are not these things to be truly thankful for? Ah, it is not always the material things that count for happiness and thankfulness.

Your house may not be so large as Bill Jones's, nor your farm so big as Jack Smith's, but that need not make you less thankful than they. For all you know, Bill Jones and Jack Smith may be wishing they could change places with you and get a little of your cheerfulness.

Unless one is careful, however, giving thanks becomes a matter of pure selfish-

about the palace with a dull, spiritless countenance. At last the king called in the chief magician of the court and asked his help. The magician said: "Certainly I can bring your son, the prince, happiness and thankfulness, but it will cost a great price." The king agreed to pay the price, and the magician took the boy to another room of the palace. Then he wrote something with a white substance on a piece of paper. This he gave to the young prince, together with a candle. He told the boy to light the candle and hold it under the paper. The lad did as he was bade, and suddenly these words appeared on the sheet as if by magic:

Wouldst thou happy be and gay?
Do some kindness every day.

The young prince made good use of the secret and became the happiest, as well as the most thankful, boy in the kingdom, and his people thankful they were to have such a ruler.

So the happiness and thankfulness that the young prince had in his heart shed a

Every human life was intended to accomplish some good in the world. God at the first sent the soul from His hand and formed for it a body to dwell in. Then day by day He gives light to the eyes, understanding to the mind, food and drink to the body and the invitation to be brave and pure and noble to the conscience and soul. Both soul and body are deemed by the Almighty Maker sacred and of infinite value.

And yet here was one who had been so created and nourished, and urged to make something of himself, who, as he hurled himself beneath the churning paddle-wheel and the dark water, declared that the result of God's creation and his own use of the best gifts was absolutely zero! "Here goes nothing!"

A mother somewhere agonized to bring into the world this self-destroyer, and then she endured for him the sleepless nights and the worries and cares that his babyhood and youth demanded. A father greeted the child as his son and doubtless hoped that he would grow up to be a credit and comfort to his parents and of some benefit and use to his generation. But the outcome of all this pain and anxiety and hope, and of whatever efforts and struggles the man himself put forth (and perhaps they did amount to a little before he let himself drift to the final tragedy), was, if his own declaration was to be accepted, nothing at all! Is it too much to say, then, that this last cry of the suicide was even more awful than what is commonly called profanity and blasphemy?

The saying of St. Paul is beyond all question true, that "We brought nothing into this world, and it is certain we can carry nothing out." But he is referring to money and worldly possessions, all of which even the richest man must leave behind him when he dies. But the man who leaped from the ferry-boat could not plead as an excuse that the Bible said the end of life was zero. Far from it. St. Paul, though poor in worldly goods when the Roman sword made him a martyr, was rich in that treasure which thieves do not "break through and steal." He redeemed a great mistake of his early life by later years of untiring service to Christ and His Church, and when he was slain, a great company on earth lamented him and a yet greater throng welcomed him to heaven. Only contrast such a death with that of the pitiful suicide who cried, "Here goes nothing!"

How wonderfully worth while it makes our own lives seem, to realize the depth and height of the opportunities they offer! With the terrible possibility of waste on the one hand, shown by the self-destroyer of whom we write, and the glorious possibility of service of Christ and our fellow men on the other, we may well gird up our strength and determination to fresh endeavor to prove ourselves not unworthy of the trust God reposed in us when He first bestowed on us a body, a mind and a soul and bade us "Work while it is day, for the night cometh in which no man can work."

If to-day's cup of bitterness be emptied of the trouble borrowed of to-morrow and the regrets carried over from yesterday, a very small cup will suffice to contain what is left. RAMSEY BENSON.

To find if a man has knowledge, talk with him; to find if he has manners, dine with him; to find if he has a sense of humor, joke with him; but to find if he has religion, live with him. W. J. B.

Just Weather

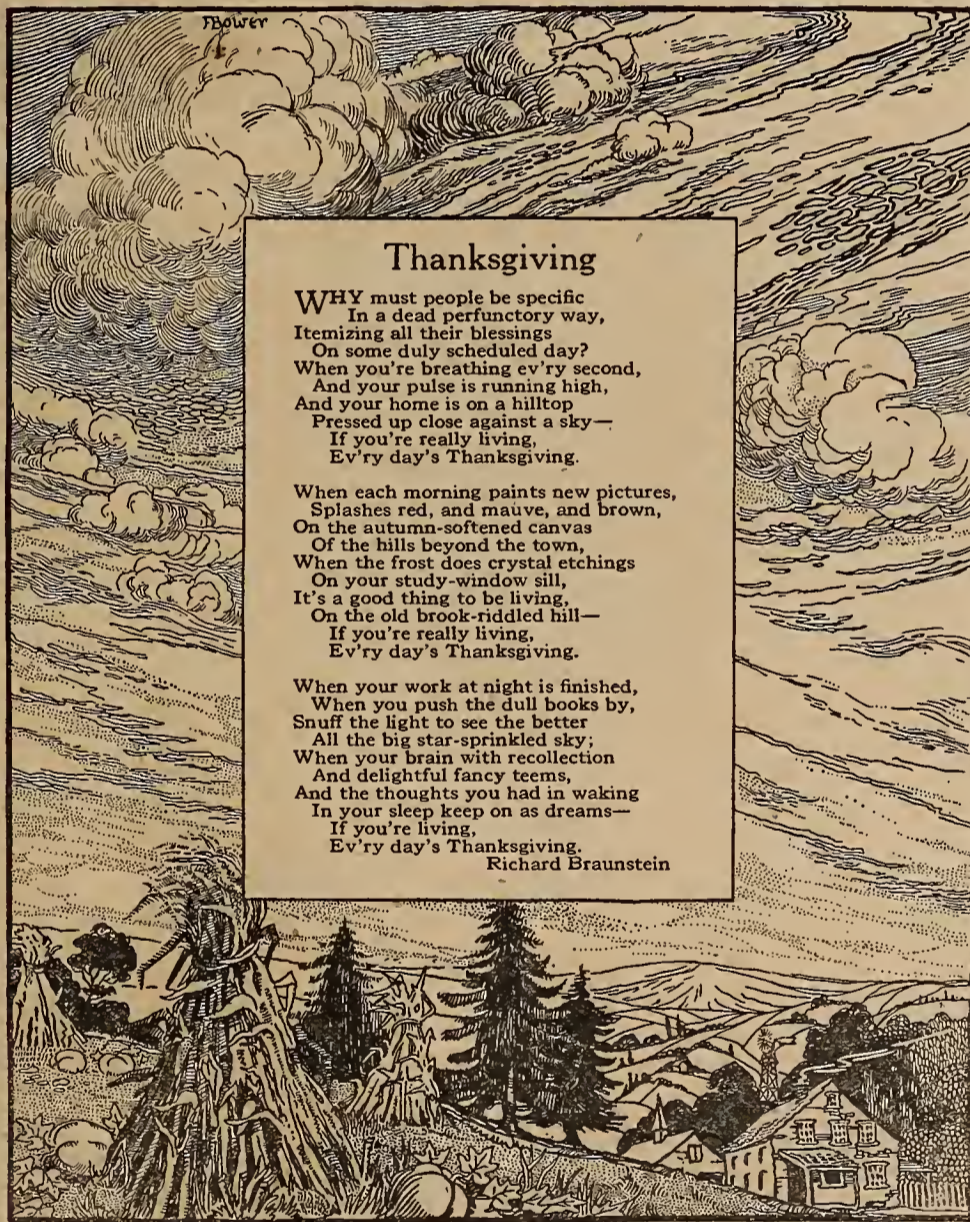
By G. Henry

FANS are out of style,
Coal is all the rage;
Ice-cream's disappeared,
Furs at ev'ry stage.

Snow is droppin' down,
Autumn's slunk away;
Birds are flyin' south,
Frost has come to stay.

Hurry up, old summer,
Come again a while;
Don't get lost in transit,
Come an' make us smile.

Cows an' sheep, pigs an' goats
Long to see your face;
Grass and grain beseech you
Not to fall from grace.



Thanksgiving

WHY must people be specific
In a dead perfunctory way,
Itemizing all their blessings
On some duly scheduled day?
When you're breathing ev'ry second,
And your pulse is running high,
And your home is on a hilltop
Pressed up close against a sky—
If you're really living,
Ev'ry day's Thanksgiving.

When each morning paints new pictures,
Splashes red, and mauve, and brown,
On the autumn-softened canvas
Of the hills beyond the town,
When the frost does crystal etchings
On your study-window sill,
It's a good thing to be living,
On the old brook-riddled hill—
If you're really living,
Ev'ry day's Thanksgiving.

When your work at night is finished,
When you push the dull books by,
Snuff the light to see the better
All the big star-sprinkled sky;
When your brain with recollection
And delightful fancy teems,
And the thoughts you had in waking
In your sleep keep on as dreams—
If you're living,
Ev'ry day's Thanksgiving.

Richard Braunstein

ness. We are thankful for the good that has been bestowed upon us. Is there no room in our hearts for thanksgiving over the happiness of our friends and neighbors? If someone we know has been a little more fortunate than we, let us not put away all thought of thanksgiving, but, instead of being thankful for ourselves, let us try at least to be thankful for our friend. Do you know that is the surest way to kill jealousy? It may sound a bit quixotic, but it is possible of achievement, if one will but try hard enough.

I remember a story I heard a long while ago. It made such a deep impression on my mind then that I have never forgotten it. Once upon a time, there lived a king who had an only son. The boy was given everything a child's heart could wish for: a beautiful playroom heaped up with all the most wonderful toys that the art of the toymakers of the kingdom could produce, a lovely garden in which he could roam at will, with an entrancing little lake right in the middle of the garden. Small craft of all kind floated on this mirror-smooth lake, and there were servants and servants and servants, all ready and eager to do the bidding of the young prince, but he was not happy nor thankful, in spite of the fact that he possessed everything in the world to make him so. He took no interest in his playthings and wandered

warm glow over his whole life, and it was reflected back upon him and the people of his kingdom.

"Here Goes Nothing!"

By Eliot White

THE passengers on a ferry-boat crossing one of the rivers to New York City one day were horrified to see a well-dressed man on board suddenly climb to the rail and, shouting three words as his last message, throw himself headlong into the water. The paddle-wheel of the boat probably struck him, and he was drowned.

This swift plunge to death, before a staying hand could be laid upon the suicide, was terrible enough in itself, but the words that he cried as he leaped were more awful still. They were these: "Here goes nothing!"

The more one thinks of this last utterance, the more appalling it seems. Even profanity and blasphemy as a parting comment on life and the world and a mis-spent opportunity in it, could not have rung with more revolting significance than this. Indeed, was not the cry really profane and blasphemous, both, even though none of the usual oaths were in it? "Here goes nothing!" Yes, it contained the essence of profanity, which is to "use in vain" that which ought to be kept pure.

Some New and Useful Christmas Gifts

That May be Bought for Less Than \$2 Each

Arranged by Evaline Holbrook

EDITOR'S NOTE—Here are some interesting Christmas gifts. They're not expensive, and they're useful as well as pretty. The selection of these gifts has cost much sincere effort. They had to be novel and they had to be the sort of things that we could recommend to our readers. We think they're all of that. You will see a pretty waist and a useful coat for children, as well as simply pretty things. So many folks like to give useful things. So, if you want to purchase any or all of these gifts, send a stamped, self-addressed envelope to the Gift Editor, care of Farm and Fireside, Springfield, Ohio, and a list of the stores selling these attractive gifts will be forwarded at once.



Silk waist for \$1.98



Vanity bag for 25 cents



Back view of waist



Corduroy coat for boy or girl, \$1.98

THIS silk waist is beautiful, and a bargain. It's made of black and white, dark blue and white, or brown and white striped messaline, trimmed with all-over lace yoke and undersleeves. The oddly-shaped rever is of black messaline. At \$1.98 you'll wonder how they can be made up for the price. The vanity bag of brocade-like material, furnished with a mirror at the bottom and a small powder-puff, costs 25 cents. The corduroy coat, for a boy or girl two to six years of age, may be ordered in dark blue, brown or cardinal. It costs \$1.98. The fancy buttons and the stylish collar make this very effective.

THE clasps and chain for baby's bib are made of white metal. They do away with needless strings to tie about his chubby neck. They cost 25 cents. The new necklace idea of a gilt chain and an enameled plaque is a style that has come to us from France. Plaque and chain cost 50 cents. The silver braid band for the hair, decorated with imitation rhinestones, costs 50 cents. The pink ostrich-feather fan with white bone sticks in only 50 cents. The white chiffon-like evening scarf decorated with pink wild roses is 49 cents. Both ends are hemstitched. Are not these wonderfully nice gifts for very small sums?



Bib-holder for baby, 25 cents



Novel necklace for 50 cents



Band of silver braid for the hair, 50 cents



Evening scarf, 49 cents



Pink ostrich-feather fan, 50 cents

OUR YOUNG FOLKS' DEPARTMENT

CONDUCTED BY COUSIN SALLY

Frank Weldon's Fur Gloves

By Aubrey Fullerton



HERE is a farmer's boy in northern Minnesota who is wearing this winter a comfortable pair of fur gloves, as a result of his own skill. For that reason he is proud of them. It came about through the overboldness of two young raccoons who wandered beyond the limits of their forest home and ventured into the forbidden ground of a farmyard. They were in search of food, for coons are hungry little creatures, and when their appetites are sharpened by the scent of a favorite delicacy, or by long abstinence, they will face considerable risk for the sake of coveted food. And so, one night, these two young members of a coon family whose home was in the birch woods strayed off down the hill on a foraging expedition of their own, gloriously expectant of some rich adventure.

There was an additional motive besides their appetites which prompted this party of two to go a-hunting. It was their first year of independence. Last winter they had stayed at home and had their food brought to them by their parents, but now they were old enough and big enough to look out for themselves. They had not as yet wandered beyond the woods, but of late their confidence had been growing, and their great ambition was to visit some of the farmyards that they had often seen from the edge of the woods. It was time they proved their courage.

With these mixed motives, they one night boldly crossed what had hitherto been the boundary line between their home territory and the world beyond. It was in the week of the full moon, and the witchery of the clear bright October night stirred the fiery blood in the two coon adventurers. They stopped a moment just across the first fence, sniffed the air with an appreciative sense of freedom, and then made off across lots in the direction whence came a delicious scent. It was the scent of the farmyard, where there were barns and sleeping things.

Slacking their speed as they approached the buildings, the coons again drew in the flavored air, and this time they detected in it a new scent. If before they had hesitated for a moment to take this last plunge into a new experience, something now impelled them on with fresh eagerness and cunning. For it was a scent they knew; their father had brought them something last winter that had had that same good smell, and although there had been none since, they remembered it well. And here it was again. If they had planned it all themselves, they could have found nothing that would have pleased them a bit better.

The good smell evidently came from one of the buildings now in front of them, and their first business was therefore to examine the premises. With so keen a scent it was not a difficult matter for them to locate its source. In five minutes' time they had their pointed noses right against a lot of it, and it was good, the very thing they had wanted and had not known it.

But it was still beyond their reach. To smell it was only aggravating, so long as they could not lay hold upon it. A long hard wall lay between it and them, and around and around this they went, sniffing hungrily, and each moment growing more eager.

At last one of them, with an ingenuity born of desperation, reasoned it out that there must be a way of getting inside that wall, and that the long row of sticks stretching up to the top had something to do with it. It was a ladder, and the discerning coon mounted the lower rounds, followed by his brother, and then, encouraged by the smell still ahead of them, they both climbed to the top. The puzzle was solved now. It was a big, hollow place, open at the top, and inside, some ten or twelve feet below them, was a great mass from which came out that elusive smell. Down they dropped, and with a hurried exchange of congratulations upon their good luck they set themselves to feasting.

That was the beginning of it. The results of their first night's adventure

back to the sweet-filled hollow, whose goodness never failed them. They were badly scared one morning when, having stayed beyond their usual time, they heard a man come into the yard, and the next night they remained at home; but usually their visits were undisturbed.

That is how two Minnesota coons found the biggest fun of their lives.

But there is another side to the story. The cows that were fed the silage were the special care of Farmer Weldon's young son Frank, who took as much pride in the affairs under his charge as a model housekeeper in the management of her home. When feeding the cows their daily portion of corn-silage, it had of late seemed to him that the quantity in the silo was decreasing faster than it should. He could in no way account for it, until one morning his suspicions were aroused in a direction he had not thought of before. Opening a door of the silo, he was surprised to see two short fat animals dash up the wall, down the ladder and out of the yard before he realized what was going on. He recognized them, however; they were coons, and remembering that coons were said to be particularly fond of corn-silage, he at once connected them with the disappearance of his stock of feed. That was the morning the two young coons were so badly frightened, and from that time they had in Frank a determined enemy. Usually he was a friend of the woodsfolk, whose ways he had studied and whose young he had always protected, but these were thieves and must be treated as such.

Frank was well enough acquainted with the ways of the woodsfolk to surmise that the coons would not return for a day or two; meanwhile he laid his plans, and very early on the third morning he took with him his younger brother Jack, to whom he gave careful instructions.

Arming himself with a short, stout stick, he quietly climbed the ladder, and at the top signaled to Jack to enter the silo from below and startle the animals, should they be there, as he suspected they were. The ruse succeeded admirably. The coons were there, and one came rushing to the top, and then the other, where each was met by a blow from Frank's deftly wielded stick, which sent them tumbling to the bottom of the silo. Then Frank himself descended and found as his prize two

fine coons, which had met a quick but well-deserved thieves' death. Very neat, plump little bodies they were, these two young coons whose midnight forages were now at an end.

Cunning as they were, they had been outwitted, and through wandering into forbidden ground had met their fate. For it is as true according to the unwritten book of animal laws as it is of men that the way of the transgressor is hard.

And that is how two adventurous little coons were made to stop their midnight suppers. Also, that is how a farmer's boy in northern Minnesota got a pair of warm fur gloves, which he wears with pride.



"He quietly climbed the ladder"

were eminently satisfactory, and when they climbed out of their new-found treasure-place an hour or two afterward and hurried away home to the woods, it was with the mutual agreement that they would come again.

And they did come again. For three weeks they missed scarcely a night, and it grew to be one of their settled habits to run down to the farmyard about midnight, climb up the ladder and feast themselves upon the good things inside the big hollow. True, they soon learned their way to other parts of the yard, and to other buildings, where they found various tempting morsels; but they always came

Mountaineer's Puzzle

THIS is just the time of year for a trip to the mountains. Can you find the ones mentioned in this trip planned by a happy little "mountaineer"?

- A "mountaineer," one summer's day,
- A journey planned—for far away.
- The sky was (1), the grass was (2),
- On every side (3) clouds were seen.
- His (4) he buckled on,
- A staff of (5)—he's almost gone.
- A great (6) he carried, too,
- To come in handy, if he blew.
- The trees he passed were of the (7).
- The waters fell in (8) fine.
- He journeyed on a (9) road.
- He wished the (10) had showed,
- When, lo! before him rose the (11),
- Whose color's fifth in Iris' bridge. (12)
- And farther on as he did roam—
- Behold! arose the great (13).
- (14), in (15) outline dim,
- Revealed (16) beyond the rim.
- When needing food, he'd fish and shoot
- And dig and find some (17).

His (18) must needs be (19),
Or else he'll have to dance a jig.
His mountain trip quite mixed does seem,
But why? 'Twas just a summer's dream.

The Pilgrim's Thanksgiving

HERE is a list of the dishes for the feast mentioned on Our Page in the last issue: Oysters, fish, turkey, ducks, geese, venison, barley loaf, Indian meal cakes, turnips, squash, pumpkin, beans, dried plums, cabbage

Bird's Free-Lunch Counter

SOME time ago I read in FARM AND FIRESIDE about a birds' free-lunch counter, so I at once made one for myself, about six feet above the ground. It contains wheat, corn and cracked walnuts. I now have four redbirds, ever so many other birds and a gray squirrel that come every day for their lunch. I hope every boy will make a birds' free-lunch counter. It is the greatest thing in the world.
CARL W. SCHABLE, Age 12 Years, Ohio.

Looked Like Ed

EDGAR and William were twins, aged three years. They looked so much alike that members of their family often mistook one for the other, or felt doubtful as to which was which.

The little boys had never seemed to notice their likeness to each other, until one day, while passing a mirror, William exclaimed in surprise.

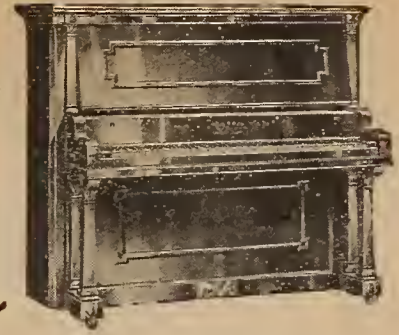
"There's Ed!"
"No," said Aunt Elizabeth, who happened to be in the room at the time; "that is not Edgar; that is you."

"Well," replied William very earnestly, and as though not fully convinced, "it looks like Ed."

MRS. JOHN H. REYNOLDS.

A Word from Cousin Sally

DON'T bother sending me the answers to a "Mountaineer's Puzzle." They will be published in the near future. The numbers in the poem are to be supplied by the names of mountains.



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Christmas Playthings

Presents Made from Our Patterns



No. 1665—Doll's School Dress and Apron

Cut for dolls 14, 18 and 22 inches high. Material for 18-inch doll, three fourths of a yard of thirty-six-inch material, one fourth of a yard of contrasting material for apron, and one yard of thirty-six-inch material for dress. Pattern, ten cents



No. 1667—Rag Doll and Middy Suit

Cut for dolls 14, 18 and 22 inches high. Material for rag doll 18 inches tall, three fourths of a yard of thirty-six-inch material. For middy suit, one yard of thirty-six-inch material, one fourth of a yard of contrasting material. Pattern, ten cents



No. 1913—Rag Doll and Russian Dress

Cut for dolls 14, 18 and 22 inches high. Material for rag doll eighteen inches high, three fourths of a yard of thirty-six-inch material; for dress, one-half yard of thirty-six-inch material, with one eighth of a yard of contrasting material for trimming. The price of this pattern is only ten cents



No. 1915—Doll's Play Dress and Apron

Cut for dolls 14, 18 and 22 inches high. Material required for doll eighteen inches high: for the dress, one-half yard of thirty-six-inch material; for the apron, three eighths of a yard of twenty-seven-inch material, preferably fine white lawn. The price of this pattern is only ten cents



No. 840—Boy Doll's Outfit—Suit and Overalls

Cut in one size, for doll 22 inches high. Material for the sailor suit, one-half yard of twenty-seven-inch material, one-fourth yard of contrasting material. Material for the jumper, one-half yard of twenty-seven-inch material. Material for the overalls, one-half yard of twenty-seven-inch material. Price of this pattern, ten cents



No. 1049—Doll's Kimono and Dressing-Sacque

Cut in one size, for doll 22 inches high. Material for long kimono, three-fourths yard of thirty-six-inch material; for short kimono, one-half yard of thirty-six-inch material. Material for dressing-sacque, one-half yard of twenty-seven-inch material, and ribbon for belt. The price of this set of patterns is only ten cents



No. 1917—Stuffed Dog

Cut in one size. Material required, three eighths of a yard of thirty-six-inch material, small piece of pink velvet for inside of ears, buttons for eyes, and brown embroidery-silk for nose. The price of this stuffed dog pattern is only ten cents



No. 1652—Br'er Rabbit

Pattern cut in one size. Material required, one fourth of a yard of white cotton plush, thirty-six inches wide, and one fourth of a yard of brown plush, with two buttons for eyes. The price of pattern is ten cents

No. 1653—Gray Squirrel

Pattern cut in one size. Material required, one-half yard of thirty-six-inch gray plush, a small piece of white plush or flannel for the under body, and buttons for eyes. The price of this squirrel pattern is ten cents



No. 1648—Red Fox

Cut in one size only. Quantity of material required, three eighths of a yard of thirty-six-inch dark material, and one fourth of a yard of white material, with buttons for eyes, and black embroidery-silk for nose. The price of this pattern is only ten cents



No. 1244—Jointed Elephant

Cut in one size, for elephant 9 inches high. Material required, one-half yard of thirty-six-inch material, a small piece of chamois or light tan felt for the tusks, and two buttons for the eyes. This pattern, ten cents



No. 1918—Woolly Lamb

Cut in one size. Material required, one fourth of a yard of twenty-two-inch material, small piece of white kid for legs and head, and buttons for eyes. The price of this woolly lamb pattern is ten cents



No. 1438—African Lion

Cut in one size, for lion 9 inches high. Material required, three fourths of a yard of twenty-two-inch material, one fourth of a yard of yellow cotton plush, two shoe-buttons for eyes. Pattern, ten cents



No. 1647—Jointed Pig

Cut in one size. Quantity of material required, one-half yard of thirty-six-inch material, two buttons for eyes, and a piece of pink velvet for snout. Light-pink cotton plush is a good material for this little pig. Pattern, ten cents



No. 1920—Horse with Blanket

Cut in one size. Material required, three eighths of a yard of thirty-six-inch material, small piece of red cloth for blanket, black cloth for the hoofs, and two shoe-buttons for the eyes. The price of this pattern is ten cents



No. 1916—Toy Cow

Cut in one size. Quantity of material required, three eighths of a yard of thirty-six-inch material, and buttons for eyes. Flannel is a good material for this cow, and she may have a collar and bell. Price of pattern, ten cents

EVERY mother likes to make Christmas presents for her own dear children, and it saves money. Dolls are sure to please little girls, and toy animals the small boys, and with the aid of WOMAN'S HOME COMPANION patterns the dolls and animals shown on this page may be easily made. Order patterns from Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio, or Pattern Department, FARM AND FIRESIDE, 203 McClintock Building, Denver, Colorado. Price of all patterns, ten cents.

Christmas Presents

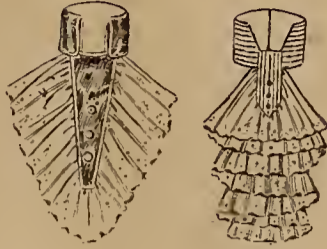
To be Made from Patterns

Designs by Miss Gould



No. 2165—Breakfast Caps

One size. Material for sunbonnet cap, three fourths of a yard of thirty-six-inch material, three yards of lace, four medallions. For cap with frill: Five eighths of a yard of net, one-half yard of lace for band, and two and three-fourths yards for frills. The price of this breakfast cap pattern is ten cents



No. 2168

An unusually dainty gift for one girl to give another is a pretty breakfast cap which is hand-made. With the aid of a pattern they can be easily put together, and both the cap illustrated above and the one at the opposite side of this page are included in No. 2165. This cap with frill is especially pretty made of net or all-over lace



No. 2034—Misses' One-Piece Corset-Cover: Lapped Shoulders

12 to 18 year sizes. The price of this pattern is ten cents



No. 1661—Sewing Apron with Pocket

Cut in one size. Material required, one and one-half yards of twenty-four-inch material and four and one-half yards of lace. Price of this pattern, ten cents



No. 2171—Corset-Cover with Round Yoke

32 to 44 inch bust. Price of this pattern only ten cents

Either fine embroidery or lace may be used effectively to trim this attractive corset-cover

This dainty corset-cover would make an acceptable Christmas gift for a young girl



No. 2167—Fancy Aprons

Cut in one size. Material required for apron with bib, one and one-fourth yards of thirty-six-inch material. For the panel apron, seven eighths of a yard of eighteen-inch material. The price of this pattern is only ten cents



No. 2169—Set of Dress Accessories

One size. Material required for suspenders and belt, seven eighths of a yard of thirty-inch material. For shoulder-straps and girdle, seven eighths of a yard of thirty-six-inch material. The price of this pattern is ten cents



It is difficult to think of a more useful gift than an apron, and it will surely be acceptable if it is dainty. The apron shown above is included in the pattern No. 2167 which is illustrated at the opposite side of this page



No. 1655—Set of Dress Accessories

Material required for medium size: For the collar-and-cuff set, seven eighths of a yard of twenty-seven-inch material. Material for either girdle, one and three-fourths yards of twenty-seven-inch material.

ance of a professionally made one, but with the added charm of the personal touch.

Thirdly, remember never to piece the silk on the long lengths, though it may well be pieced anywhere on the neck-band. Both edges of such a seam must always turn the same way. This is important; for were the seam opened, the least strain on the tie would let the lining show through between the stitches.

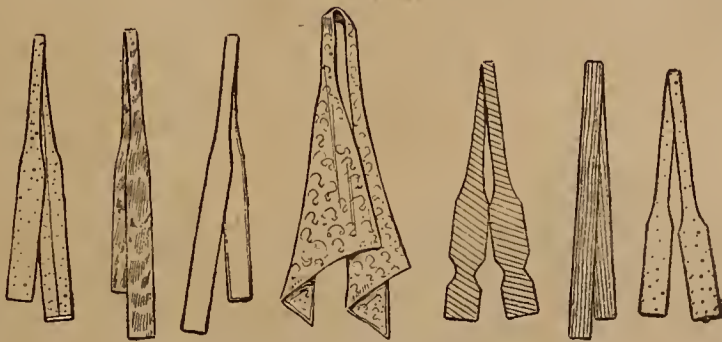
All basting and sewing should be done with very fine needles and silk thread. After the ties are made, remove the bastings, and press under a damp cloth with a warm iron until the cloth is nearly dry.

The width of most ties may vary "to fit the cloth" or to please the individual taste of the wearer, but the length of the neck-band is a measure which must be exact. If it is too long, the knot of the tie will be made up on the ends of the neck-band, and will look stringy. If too short, the knot will come on the wide part of the tie, and be bunched. This measurement is often the only fault of home-made ties, the average girl not realizing that ties come in neck-lengths just as do collars and shirts. In the following patterns the neck-length has been kept at a measure of sixteen inches. It may be lengthened or shortened.

No. 2172—Set of Men's Neckties

One size only. Pattern, ten cents.

Order all patterns from Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado



Illustrated above are the different bow ties and scarves which can be made from pattern No. 2172

No. 2168—Set of Collars and Jabots

Cut in one size. Material required for Robespierre collar, three eighths of a yard of eighteen-inch material and two yards of lace five inches wide. For the collar with tab, one eighth of a yard of eighteen-inch material, with two and one-half yards of net or lace, four and one-half inches wide, for jabot. The price of this set of patterns is ten cents

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Our Educational Thanksgiving Dinner

How We Gave a Menu With a Moral

By Georgiana Curtis



WHEN we heard that the wealthy Mr. and Mrs. Worthington Romney Sanderson of New York and Newport were coming to have their Thanksgiving dinner on our farm, we were very much excited and just a bit worried about it. There were a number of reasons for our worry. First of all, the Sandersons are Grace's parents-in-law, who have conscientiously snubbed their youngest son, Grace's husband, for leaving a law practice in order to raise hogs. Of course, we wanted to make them comfortable and happy, being guests; but, at the same time, we were anxious to show them that living in the country has its compensations, too. At least we think so.

We planned lots and lots of things to amuse them and entertain them, and, it must be confessed, to surprise them, too.

I said, "Now, Grace, they can get fashionable, foreign dinners in New York whenever they please. Let's try to give them something different. How would a real, old-fashioned, country Thanksgiving dinner be? Don't let's have it too fussy, nor too hard to cook or serve, but let's have it so good they'll be begging to come back next year. What do you think of my plan?"

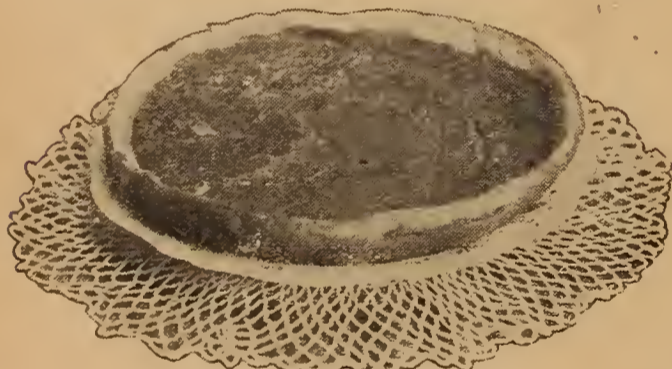
"What do I think of it?" echoed Grace. "I think it's splendid." Grace's one fault consists in believing me quite perfect in my opinions and judgments.

However, acting on my suggestion, we planned a menu that left out all the frills and contained all the good old substantial dishes that have made Thanksgiving dinners famous for two hundred years.

We determined to serve the food in the old-fashioned way, no modern eight-course dinner. We would serve the soup first, then the dinner, removing all dishes for the dessert.

Of course, upon looking over our menu you'll say we had very plain fare for our guests. That is true. The serving of an elaborate dinner for six grown-ups, where there is no kitchen help, demands a simple menu. But everything was delicious of its kind, and everything was provided for by the broad acres surrounding our home, everything, I should say, except the almonds, oysters, raisins, cheese, crackers and vanilla.

We set the table very plainly. There was the beautifully laundered table-cloth, and we had a crocheted doily, some twenty-four inches in diameter, for a centerpiece. It was just such a doily as you will often see in the pages of FARM AND FIRESIDE'S Fancy-Work



Old-fashioned pumpkin pie

Department. It was easily laundered because of the fact that the color-scheme was all in white, so that drops of gravy, or cranberry sauce, or even spilled coffee had no terrors for us. Grace and I always said it seemed so foolish to put things on a table that are not easy to wash. The plates we kept in the warming-oven over the stove, but at each place on the table we placed to the right hand two knives, one a silver knife for spreading butter, and the other a steel knife to be used for the meat. To the left were two forks, one for the dinner course, consisting of the turkey and vegetables, and the other for the salad course. Beside the two forks were a silver soup-spoon and two teaspoons. Just above the forks was a small circular bread-and-butter plate, and to the right of it a water-glass. The neatly folded napkins were placed between the knives on one side, and the forks and spoons on the other.

Such things as the celery, the salad, almonds and the cranberry sauce were placed on the table before the guests sat down. The bowl containing the flowers for the centerpiece was in the exact center of our beautifully laundered doily and was the only piece of pure decoration the table boasted. Everything else was intended for comfort and utility, primarily, and were chiefly beautiful because they were useful and spotlessly clean. The table-cloth had a monogram in the corner. Each napkin had the same monogram in a smaller size. The silver was shining spotlessly, as were the glasses. The low mound of orange and brown leaves and late chrysanthemums, the tiny brown, orange and purple kinds, made up a centerpiece that a city florist would find hard to duplicate. Yet our own garden furnished it, as well as the other bouquets of the same flowers which decorated hall, living-room and sideboard.

Our dining-room is papered in a plain buff paper, and our furniture is dull oak. Remembering our high-school lessons of complementary colors and that blue is the complement of orange, Grace and I determined to wear blue gingham dresses. You see, we planned to dress the part as well as to cook and serve it. And I defy anyone to suggest a more suitable costume than a freshly ironed blue gingham covered by a dainty white apron. Grace had a blue bow in her light hair, and I wore a dull orange chrysanthemum in mine. Altogether we weren't the least bit ashamed of our dresses.

But this is getting away from the dinner, I know. And in order to show you what a very toothsome, wholesome, dyspepsia-forgetting meal it was I'm going to tell you exactly how we made every dish.

The day before Thanksgiving Grace cracked the nuts and removed them from the shells. We had hickory-nuts, black walnuts and hazel-nuts. I made the cranberry sauce. This is the way I did it. I parboiled one quart of cranberries in enough water to cover them, adding one-half teaspoonful of soda. Then I drained the cranberries, added one-half pint of cold water and one pint of sugar, and boiled them for twenty minutes.



The chief dish at the feast

Grace cooked the pumpkin for the pies, running it through a colander to take out all lumps. The pumpkin, when first put on the stove, was nearly covered with water. It was boiled until it was almost dry. Of course, it took a great deal of attention to prevent its burning, but the result is worth the trouble.

MENU

Celery Hearts,	Oyster Soup	Salted Almonds
	Roast Turkey	
	Brown Gravy	
	Bread Stuffing	
Creamed Carrots	Mashed Potatoes	
Mashed Turnips	Candied Sweet Potatoes	
	Cranberry Sauce	
	Cole-Slaw	
	Hot Biscuits	
Pumpkin Pie	Vanilla Ice-Cream	
Coffee	Devil's-Food Cake	Cheese
Nuts	Crackers	Raisins

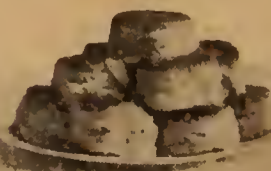
It took some time for us to decide just what kind of a cake we should have. We finally determined it must be a devil's-food cake, as Mr. Sanderson is very fond of chocolate, and I was to make it. Here is a list of the ingredients: one-half cupful of butter, two cupfuls of sugar, yolks of four eggs, one cupful of milk, two and one-third cupfuls of flour, four teaspoonfuls of baking-powder, whites of four eggs, two squares of chocolate and one-half teaspoonful of vanilla. I creamed the butter, adding half the sugar, a little at a time, then beat the yolks of the eggs and added to the other half of the sugar. I put the two mixtures together, adding the milk and the flour, alternately, having sifted the flour and baking-powder together. Next I added the whites of the eggs stiffly beaten, the chocolate melted and last of all the vanilla. It required forty-five minutes to bake. I took the cake out of the oven, and placed it on a cake-board to cool while I made the icing for it. We decided that caramel icing was the suitable icing for a devil's-food cake.

For the icing I used three cupfuls of brown sugar, one-half cupful of cream, one tablespoonful of butter and one-half teaspoonful of vanilla. I boiled the sugar, cream and butter together for four minutes; that is, for four minutes after boiling began. Then I took it off the stove, added the vanilla and beat the mixture until it began to thicken. Then I spread it at once on the cake so it might not harden.

Thanksgiving morning Grace made the pies while I prepared the stuffing for the turkey. For the crusts she took two cupfuls of flour, two tablespoonfuls of lard, one-fourth teaspoonful of salt and enough cold



The creamy oyster soup



The light-as-air biscuits

water to mix. This made two crusts. For the filling she used the following: four eggs well beaten, one-half teaspoonful of salt, four tablespoonfuls of sugar, one tablespoonful of flour. Then she mixed these together, added two cupfuls of the cooked pumpkin, one-half teaspoonful of ground nutmeg, one-half teaspoonful of ground cloves, one teaspoonful of ground cinnamon and two cupfuls of rich milk.

By the time the pies were baked I had the stuffing ready for the turkey. For the stuffing I used one loaf of stale bread, cut into very small pieces. Over this bread I broke two eggs. In a frying-pan I melted one-half cupful of butter, and in this butter I fried one onion, finely chopped, until it was brown. Then I poured the butter and onion over the bread, adding just sufficient water to keep the stuffing from being too dry. Now we had our turkey stuffed and ready for the oven. We had the oven very hot when we put the turkey in, and turned the turkey several times, so that it would be evenly browned. Then we closed the damper and lowered the temperature of the oven, as soon as possible, to the ordinary baking temperature. The searing required about twenty minutes. The turkey had to be basted about every fifteen minutes, and if I were really busy at something, Grace attended to this. Our turkey weighed ten pounds and required three hours for roasting.

Our ice-cream must be made so that we would have time to freeze it. I used one quart of thin cream, one cupful of sugar and one tablespoonful of vanilla-extract. I scalded the cream and sugar in a double boiler and added the vanilla just before freezing.

Meanwhile Grace had been busy making the cole-slaw. She had cut one small head of cabbage into shreds. For the sour-cream dressing she used one-half pint of sour cream, three tablespoonfuls of sugar, four tablespoonfuls of vinegar (we had our own cider vinegar, and it was quite strong), one teaspoonful of salt and two teaspoonfuls of celery-seed. It is better to add the celery-seed to the cabbage instead of in the cream. Then she poured the dressing over the cabbage, and the slaw was ready. All the vegetables we cooked in salt water. I cleaned the celery while Grace began the oyster soup. In making the oyster soup she put a half-pint of water in the kettle and let it boil before adding the milk. This prevents the milk from sticking to the kettle. She used one and one-half quarts of rich milk, seasoning with plenty of butter



Candied sweet potatoes

and salt and pepper. As soon as the milk began to boil, she put in a pint and a half of oysters. When the oysters came to the top of the milk, they were done.

While the milk was heating for the soup Grace mashed the turnips and potatoes and I attended to the sweet potatoes and carrots. As soon as the sweet potatoes were done, I drained the water off them. In a kettle I had melted three tablespoonfuls of butter and one-half cupful of sugar. The sweet potatoes were put into this and turned so that they were all covered with the syrup, and then they were allowed to brown.

I made the coffee in a percolator, using six cupfuls of cold water and seven tablespoonfuls of finely pulverized coffee, and allowed it to boil about fifteen minutes. I mixed the biscuits while Grace was finishing the oyster soup and making the gravy. I used one quart of flour, one tablespoonful of lard, one teaspoonful of salt, four teaspoonfuls of baking-powder and enough milk to mix them. One cupful of milk was sufficient.

After the turkey was removed from the pan, she poured off the liquid and skimmed six tablespoonfuls of the fat from it. This she put in the pan in which the turkey had been roasted, added six tablespoonfuls of flour, browned it, then added four cupfuls of the liquid that was left in the pan. Then she seasoned the gravy and cooked it for about five or ten minutes.

Well! After dinner was over and Mr. Sanderson had eaten his last nut-meat, and after Mrs. Sanderson had folded her napkin and looked rather closely at the embroidery on it, Mr. Sanderson cleared his throat. After glancing out of the window and seeming to draw some sort of courage or inspiration from the landscape, he said, "Well, Georgiana, I've eaten meals all the way around the globe, and I never remember one as satisfactory as this. Its environment was as appropriate as the dinner was substantial. And I never thought blue calico could be so becoming."

Of course, he said a lot more after Grace and I got through blushing at the compliment. But the real dessert came after the dinner was all over, for Mr. and Mrs. Sanderson have hinted that they would like to come down to us for Christmas and have another "real" dinner and backed up their hint by cautiously admitting that farms aren't bad places to live on after all. With which later sentiment Grace and I fully agree.

The Risk of Chance Acquaintance

[CONTINUED FROM PAGE 24]

The Symingtons made preparations, day by day, week by week—piling up their plans as a small boy starts to roll a big snowball, little by little, until it is big enough to crush him.

"I'll tell 'em next week," Stuart faltered. But there were reasons in the next week why he couldn't. And the snowball grew and grew. It reached the top of the hill at last, and Stuart wiped his brow as he realized that it would descend and crush him in the next instant.

"Gad," he exclaimed, "you can't understand, Tillie. These people have been everything to me; everything they do they plan for me. We made an awful mistake. We ought to have gone to them at first."

"Yes," wailed Tillie. "But I can't smash this trip—I can't—I can't," he groaned.

"Don't smash it," agreed Tillie. It was a wrench, but they made up their minds to it. Stuart would go. He would break the news to the Symingtons as soon as possible on the other side, then they would come back.

"We've been weak," he groaned. "Stuart," said Tillie, "let us thank our stars that we've been nothing else. We have nothing to regret, nothing to be ashamed of, have we, dear?"

Before he went, Stuart brought to her all the money he had saved. It was over a thousand dollars, made up of frequent gifts from his aunt and uncle.

"Are you sure this is going to be enough?" he queried.

"Enough?" she exclaimed. "It's more than enough."

"I'm glad of it," he responded, "for I don't know where to get any more. I'm in law school yet, and I don't earn money like you do. But I want to be sure."

"You may be sure," she said. "I'll write you," he told her, "but you'd better not write me."

For answer she placed in his hand a sheaf of letters. "To be taken once a day, Stuart," she whispered to him. "Dear, my heart is in them. My heart is always with you, dear."

Stuart went. But there were things that he had not foreseen and things that Tillie had not foreseen. Tillie had never known what it was to have a thousand dollars. She was a woman. She was Mrs. Stuart Hungerford. Stuart, out of his allowance, had made her dress for the part while he was present; now she dressed for the part in his absence. It took money to keep herself beautiful against his home-coming. And what a home-coming that would be.

Only neither he nor Tillie had foreseen that she was going to be sick—deathly sick. They had not foreseen the fever, the delirium, that Tillie was to pass through. Tillie hardly knew that she was passing through it. Only one morning, a month after he had gone, she knew that she saw him there, sensed that she was talking to him wildly, knew that in one instant. In the next she knew he was not there. Then she felt herself falling through miles of space. They found her there, face down on the floor, mumbling to herself.

"Typhoid," some surgeon said, "and maybe worse."

They took her to a hospital, which hospital the janitor of her apartment did not take the trouble to inquire. He confided to his wife that they were well rid of her. Nice young person she was, but there were things about her he didn't altogether relish, and what had become of that young chap she called her husband, anyhow?

It was months later that she came to herself. She had been down in the valley of death, the nurses told her. Something had brought her back, something small, tiny, quivering, at her side, a little child, Stuart's child and hers.

"Oh," she exclaimed, clasping it fiercely to her, "if he were only here." She looked puzzled. "I don't understand," she faltered. "I was taken sick yesterday and—"

They told her. Months had passed since her entrance into the hospital.

"But you'll get well," they told her. "You'll be out in six weeks from now, at the latest, anyhow."

Before the six weeks were up they talked to her about the bill. She had had a private room. They had her money, all in bills. She was able to pay, of course; and the rules of the hospital were thus and so. She paid.

"Doesn't leave me much," she said with a smile.

"Have you enough to get home?" they asked her.

Yes, she had more than enough. Well, they told her the best thing to do was to go home as fast as she could, to be careful and to rest, not to overdo it. That was the thing. And in a month more she would be strong as ever. Her case had been wonderfully interesting, and Brugerhoff, the most famous gynecologist in the world, had operated. They were sure to remember her there.

"Months," she exclaimed suddenly, looking about her uncertainly, "and—Mr. Hungerford—my husband—hasn't he been here—"

They told her politely, somewhat coldly; that he had not. They didn't discuss husbands or other people with patients.

"Better go home," they said. She did not obey. Instead, she rented two rooms, all she could afford, and for days she did little but take care of little Tillie and think hard. She could not understand that

months had passed. She went carefully over her belongings; some of them were missing. She found only two or three letters from Stuart; they were all opened, and she recalled reading them before the fever had assailed her. What was the matter? She went back to the flat Stuart and she had taken together. There was a new janitor there; the old one had gone to a place or places quite unknown. There had been no letters, so far as the new man knew; he had been on only a month or two. And no one had inquired for any Mrs. Hungerford, not even, he said, with a shrewd glance of understanding, in answer to her questions, for any Miss Tillie Northrup. No, he hadn't heard about anybody having been taken sick.

She left him her address, and he promised faithfully to forward letters. It was late fall now, and Tillie was somewhat thinly clad. She could not go out to any great extent. The days were disagreeable, and she could not subject her little Tillie to the elements. But, in spite of it all, she managed to go back to her former apartment-house at least twice a week. It was useless. No one had been there, no one had inquired.

Tillie counted her money over and over again. She had known nothing of the value of money. Now, she began to realize. "I've simply got to go home," she told herself.

She began to realize that she had not written; of course, she could not during her illness. They would be worried, they would wonder. She had better write. And yet—

She stopped short and turned cold as she thought about it. Little Tillie, what would they think of little Tillie. They knew nothing about Stuart, and she, well, she didn't even have the evidence. Stuart had kept that. No, there was but one thing to do. She must find Stuart or wait until he found her. Meantime she let things take their course so long as her money held out.

But it was the middle of November now. She had but a few bills left, and something must be done.

"Stupid," she finally told herself, "why didn't I think of it before?"

She knew the name of Stuart's uncle, Alexander P. Symington, and she started out to find him; not to face him, but to get his address. He had an address, the Hotel Bleeker on 72d Street. They were hotel-dwellers, the Symingtons. She called up the Bleeker. Mr. Symington was not there. He had given up his suite early in March. They thought he was in Egypt.

"The law school," said Tillie to herself. "I'll call them up." She didn't know the name of the law school, but she called up every one in town without success. But yes, one of them, the Down-town Law School, had had a pupil of that name. He had not returned this year.

Tillie went back to her rooms, put little Tillie to sleep, and then sat down before her mirror, her clenched hands between her knees, and thought hard. She looked the fact squarely in the face.

"Stuart," she said aloud, "I believe in you. I know you'll come. But whether you come or not I'll always believe."

In the midst of it all, she flung up her head defiantly. "I don't care," she said to herself; "I've done nothing I ought not to have done. I know, and Stuart knows that. And if they don't believe, the rest of them," she winced, for she was thinking of her father and mother, "why, the worse for them."

And yet she had come to New York for a purpose, to make a career of some kind; at any rate, to go back in a blaze of glory. And if she went back now, she would go back—how? Discredited, disgraced. No, even if they believed her story, they would write her down a fool; that was the worst of all. At the very least, she was a deserted wife. Tillie was desperate. If she had not been desperate, she might have thought of proofs that escaped her. She might have sought and followed clues that would have led her somewhere. Now she had nothing.

But "Stuart is not here," that was the appalling fact that kept her feverish, muddled, uncertain. She could not find him, she didn't even know the name of the rector, nor his church, nor the number of his house, to whom they had applied that fateful, hysterical night so many months ago.

Tillie was bewildered, beside herself. In the midst of it she caught up little Tillie and devoured her with kisses. The mother love asserted itself.

"For your sake, little one," she said tenderly, "we've got to go home."

Even then she adopted subterfuge. Of course, they had heard nothing of her—from her. They may have searched for her, high and low. But she was determined she would not let them know until the last moment. She waited a few days, then she crept downstairs and wrote a telegram:

Home for Thanksgiving. Meet me on the 4:01 Wednesday. TILLIE.



She gave no address, fearing an answer. When she had crept back into her rooms once more, she lifted up her hands in distress.

"God," she exclaimed in her anguish, "I wish it were over. How I wish they knew." On Wednesday she stepped off the 4:01 and walked into her father's arms.

"I am married," she exclaimed brokenly. "I have been very ill. My name is Mrs. Hungerford. This is little Tillie."

Her father gave no sign. "And your husband?" he inquired. Tillie braced herself. She was not going to tell her father. She would tell her mother the truth.

"He—he couldn't come," she said, "he—he's a very busy man."

They drove home gravely. Her father said nothing about her, save that they had been worried. He talked about the crops and the chance for a snowy winter. His voice seemed worn and thin.

Only when he helped her tenderly from the wagon, however, did his voice break.

"I tell you, Tillie," he exclaimed, "we're thankful to get you back. You look purty as a picture, too, my girl."

He walked by her side up the path, and for some reason stamped loudly on the porch, as though those within had not already seen them coming.

The door opened suddenly, and he went in ahead of Tillie.

"Mother," he cried, "give thanks. Here's Tillie girl."

Her mother did not come forth. Instead, tall, gaunt, with lines in his young face, there stepped forth a man, Stuart Hungerford.

Tillie stared at him an instant. Then she tottered and well-nigh fell. "Stuart," she cried, "is it you? Let me feel of you."

She felt. He was no phantom. He was Stuart Hungerford. He gathered her into his arms, with little Tillie, his slender frame trembling from head to foot.

"God," he cried, "I've got you back. I thought you'd run away. I've looked and looked—"

He could not go on. Tillie glanced at his face for an instant and saw there the lines that that hopeless search had left. He had suffered. Yes, he had been right, he was only a kid, and so was she, but it was glorious to be kids, after all.

"Stuart," she whispered finally, "I want you to forget me. I want you to look at little Tillie. Look."

He looked. They stood there, the two of them, bending over the tiny mite of humanity, as though nothing in the whole world mattered. About them was a halo, a halo of happiness, that shut out everything and everybody else in the whole world.

Finally a voice broke in.

"Tillie," exclaimed a tearful personage. Tillie turned. It was her mother, and Tillie's mother meant everything to Tillie—that is, next to Stuart and— Suddenly Tillie raised her head and stared into the parlor.

"Who—who's there?" she gasped.

"No one," replied Stuart, "only—only my Aunt and Uncle Symington."

His uncle charged into the hall. "Only your aunt and uncle," he growled; "that's a pretty note." He dragged his wife out into the hall.

"Martha," he exclaimed excitedly, "just look at her. Look at this young whippersnapper's wife."

Mrs. Alexander P. Symington looked at her. Then she looked at her husband.

"Well, why didn't you tell me, Stuart," she cried, "that she was a girl like that. If I'd only known that she was a girl like that—that why, she's too good for you—if I'd only known."

"Too good for him, I should think she was. Tillie, my dear," he added, "what do you think of a man like this whippersnapper of a husband of yours being afraid, actually afraid, of a man like me?"

It took hours to explain it all. Stuart had broken down when their trip was half-way through; he couldn't stay away from her; he must get back; his Aunt Martha had wrung her hands; his Uncle had, unexpectedly, only laughed; they had come back, and then the hunt for A Woman Who Had Disappeared.

"It was awful while it lasted," opined Alexander P. Symington, when he could get a word in edgewise next day, "and your young kid of a husband acted like the devil himself."

"Dinner's ready," cried a shrill voice from the kitchen. It was Lizzy Ann's.

"I tell you," said Tillie's father over the thirty-pounder, as he poised his shining blade, "we've got a good deal to be thankful for this year."

"I should think we had," repeated Mrs. Symington, "since Stuart has actually found a girl like Tillie here."

At this juncture Lizzy Ann entered with a two-gallon soup-tureen heaped to the top with a luscious crimson mass. Alexander P. Symington jerked his head toward it.

"What do you call that?" he asked.

"Oh," replied Tillie's father carelessly, "that's cranberry sauce. Don't many of us care about it here."

"Well, you ought to see the bits you get at Raphael's," said Stuart. "You could put it in your eye and never feel it."

"Raphael's isn't so bad," Tillie said, tossing her head. He pinched her arm. "No, you're right. It isn't, after all."

The Adventures of a Beneficiary

[CONTINUED FROM PAGE 23]

Where did you expect to find 'em?" Nettles said impatiently. "I'm goin', and I'm goin' now. That was what Nathan said I was to do—stay till you come—and I done it. And I wouldn't 'a' done it for nobody but Nathan, I tell ye. He had a way with him, Nathan had! Allers wore boots! Know that, did ye?"

Wright withdrew his hand from the other's shoulder and fell back a pace.

"Pass on, friend with the countersign!" he said, and Nettles without delay accepted the permission.

The young man watched him move away, his face growing grim as the clumsy figure grew smaller and smaller. When it was lost to sight at a turn in the road, there was a firmness about his jaw which few of his friends might have recognized, although some of them very likely would have approved it.

The front door bore such tokens of infrequent use that Wright wasted no time in attempting to open it. Instead, he walked around to the side of the house, and there he discovered a door flung wide open and so sagging from its hinges as to suggest difficulty in closing. On the other side of this door was a room, big and low-ceiled, with a wood-burning stove against one wall, a table near by and beyond this a shelf on which rested a battered tin box, presumably the ferry treasury. Half a dozen chairs, old and rickety, were distributed about the room. In a doorless closet a few plates and cups were stacked up, overlooking, as it were, a rusty sink, at one end of which a wooden water-pail found an abiding place. The floor was bare of carpet or rug, and the walls of pictures, their place being imperfectly but generously taken by a coating of dust unmarred by ravages of brush or broom.

Wright studied this bower for several minutes, but did not put foot across the threshold. Then, slowly and thoughtfully, he made the circuit of the house, pausing briefly beside the well and again at the big barn door, beyond which he could see a three-wheeled wagon, a mowing-machine long past its usefulness and a little scrap-heap of discarded farming-utensils. The small and relatively new building in the yard appeared to have been used as a hen-house at some time or other, but no clucking biddy or courageous rooster sallied forth. In fact, there seemed to be no living thing about the place except himself and the flies, which buzzed in swarms indoors and out.

Wright found himself back at his starting-point, little the wiser, but a good deal the sadder. Nevertheless, he turned riverward, and slowly descended the slope to the stream, the wheel-tracks guiding him to the point of which he was in search.

Wright looked at the boats and across at the opposite shore. He viewed again the island with its lines of white water about it, and he wheeled to consider anew the other rapids up-stream. And then he heard the sound that is never without its element of thrill: a twig snapped. Wright whipped about and beheld a half dozen paces away a companion in these wilds.

The newcomer was a boy, half-grown, bare-footed, shock-headed, with a very wide mouth, opened in a grin which revealed the absence of a couple of front teeth. His eyes were protruding, very light and expressionless, save as they helped to convey an impression of general shiftlessness and weak good nature. When Wright nodded, the grin expanded.

"Well, young man, who are you?" Wright asked pleasantly enough.

"I'm a damned fool," came the reply in a voice squeaky but frank.

Wright sprang forward, his hand outstretched.

"Well met!" he cried, but the boy misinterpreted the advance, and shrank back, throwing up his arm as if to ward off a blow.

Wright, too, retreated a pace. "I won't hit you, my boy," he said; "in fact, I'm very glad to see you. All the same, if I were you, I don't believe I'd call myself that name. I don't believe you deserve it."

"It's what they all say," the lad returned, beginning to grin again. "I don't mind."

"Yet I don't believe it's deserved. Now, you've got another name, of course—"

"Pete," the boy explained.

"Well, that's very good as a beginning, I'm sure," Wright said in a friendly way that at various times had made him an attractive person to other persons in varied walks of life. "It's too good a beginning to end so soon. There's another name that comes after the Pete, isn't there?"

"Everybody calls me Pete," said the boy. "I don't know why. But then I don't know nothin'," he concluded with the impressiveness of one stating a truth beyond denial.

"Oh, come, you know a lot of things," Wright said encouragingly. "You understand all about this ferry, I bet you, while all I know is that I've come here to manage it. Now I see these boats, and I can guess people and wagons come down this road and get on the boat and are ferried across. But where are the crew? I mean—for here his companion's face gave warning that a word had been spoken which carried no meaning to the listener—"I mean where are the men who row the boat, or pole it, or do whatever has to be done to get it across the river?"

"Huh!" Pete's jaw dropped, and his eyes bulged in a manner to reveal to Wright that he had succeeded in stirring wonder and surprise in the sluggish brain.

"Of course you can tell me," Wright repeated slowly and very distinctly. "It's my ferry now, you see; but who does the work? Who rows the folks across in the boat?"

The dawn of comprehension began to dispel the fog of bewilderment. The grin came back like the cheery rising of the sun.

"Why, you do, Mister!" Pete said with unctious. After all, there was something which he did know perfectly well.

[CONTINUED IN NEXT ISSUE]

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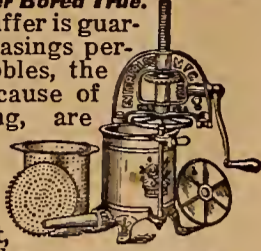
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The Housewife's Letter-Box

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Questions Asked

Will someone please tell me—

- How to make chocolate pudding? Miss R. B.
- How to render honeycomb to get the bees-wax? Mrs. F. R., Ohio.
- How to make hot slaw? Mrs. B. F. G., Ohio.
- How to pack grapes for winter? S. E. M., Virginia.
- How to knit honeycomb slippers? Mrs. L. L. J., Virginia.
- How to cover a cotton felt mattress? J. W. L., Nebraska.
- Why cucumbers shrivel up after they are pickled? E. J., Illinois.
- How to make quilt-blocks of the letters R and G? Mrs. D. A. K., Michigan.
- How to make elderberry wine? Mrs. W. H. E., Pennsylvania.
- How to make portières of Job's-tears or Job's-tears and beads? Mrs. L. D. T., Ohio.
- How to make Spanish pork-chops; also French baked beans? Miss M. M., Michigan.
- The best way of cleaning dust and smoke from chenille portières? Mrs. S. P. S., Connecticut.
- How to take new-milk stain out of black goods so it will not leave a spot? Mrs. R. D. T., Michigan.
- How to make southern corn pone, peach cobbler, beaten biscuits and extra fine raisin pie? Mrs. E. E. K., Pennsylvania.
- How to retain the pungent taste in nasturtium-seeds pickled in the green state for pickles? W. S., Washington.
- How to dry figs? How to dry grapes? How to can green beans, okra and cabbage without salicylic acid or other injurious preservatives? X. Y. Z., Mississippi.
- How to take a claret-wine stain out of a white table-cloth which has been laundered? Mrs. W. P. P., California.

Questions Answered

- Mission Stain**, for Mrs. J. A. F., New York—Get a small can of lampblack ground in oil. Take one pint of coal-oil, two tablespoonfuls of turpentine and enough of the lampblack to make the desired shade. This makes a very good mission stain, and it will not rub off. Apply it with a brush or cloth and rub well with a pad made of flannel. Mrs. B., Michigan.
 - Dill Pickles**, for Mrs. J. C. W., Kansas—Choose large cucumbers, wash, and let soak in water overnight. Then pack in layers with one large green pepper coarsely chopped, four stalks of dill broken up and two bay-leaves picked to pieces. Use one gallon of water, one third of a gallon of good vinegar and a large cupful of salt. Boil, and skim. Pour over the pickles while hot. Cover well, and keep the pickles under the liquid by using a weight. They will be ready for use in three or four weeks. Miss H. M. B.
 - Plum Duff**, for S. A. R., New York—Mix together one cupful of bread-crumbs, one cupful of molasses, one cupful of sweet milk, with a teaspoonful of soda in the milk, one teaspoonful of salt, one teaspoonful of cloves, one teaspoonful of cinnamon, one cupful of suet finely chopped, one pound of raisins and one pound of currants well floured. Steam in a well-greased pan or mold two and one-half hours. This makes two good-sized puddings. F. F. R., Ohio.
 - To Remove Stains Caused by Water Standing in Water-Bottles**, for Mrs. W. P. P., California—Take lemon-rinds after the juice has been extracted, put in vessel, and fill with water. Let stand for a week, or until it ferments. Then empty, and the vessel will be clean. V. R., Indiana.
 - Pickled Cauliflower and Onions**, for Mrs. J. B. C., Texas—Cut in pieces two cauliflowers, a pint of small onions and three red peppers of medium size. Let them stand overnight in a brine made of a cupful of salt and sufficient water to cover them. The next morning drain. Heat two quarts of vinegar with four tablespoonfuls of ground mustard, add the cauliflower and onion, and boil fifteen minutes, or until the cauliflower is tender, and seal in cans while hot. Mrs. G. C. C., Pennsylvania.
 - To Make Buns with Dry Yeast**, for E. G. B., Pennsylvania—When putting my bread in the pans, I work out a small loaf or bread
- and set it aside in a cool place to rise until about four o'clock in the afternoon. Then I take two well-beaten eggs, one cupful of sugar, one cupful of butter (or one half butter and one half lard) and one cupful of lukewarm water. Add to the dough, and mix thoroughly, pinching the dough in little bits. Add what flour is needed to make the dough same as for bread. Grease, and set aside to rise until bedtime. Then shape with the hands into small round buns, and place in well-greased shallow pans about one and one-half inches apart. Cover with a cloth, and let rise in moderately warm place overnight. The next morning they will be ready for the oven. Bake twenty minutes. These may be made from any kind of good bread-dough. Mrs. B. F. G., Ohio.
- How to Clean White Canvas Shoes**, for E. P., New York—Take a small clean brush, good soap and water, and scrub the shoes. Let them dry, and then apply the white dressing. Mrs. B. F. G., Ohio.
- Cocoanut Pie**, for W. H. E., Pennsylvania—The whites of two eggs beaten until very stiff, one-half cupful of cocoanut, three tablespoonfuls of sweet milk, or just enough milk to wet the cocoanut, five or six drops of vanilla and three-fourths cupful of sugar. Stir the sugar in the beaten whites, then add the cocoanut and vanilla. Mix all of these together, and bake in one crust. This should be baked slowly. Mrs. S. E. P., Iowa.
- Sweet Apple Preserves**, for M. C. B., Ohio—Take pound for pound of fruit and sugar. Make a rich syrup of the sugar and water, and cook fruit in this until it is transparent. C. J., Pennsylvania.
- Chocolate Caramels**, for Mrs. B. H., Pennsylvania—Two cupfuls of granulated sugar, one cupful of milk, piece of butter the size of an egg and one-fourth cake of chocolate. Put sugar, milk and butter together. Melt the chocolate, and add to the other ingredients. Cook until it will form a soft ball in water. Remove from the fire, and beat until it is a thick, smooth cream. Turn out on a platter greased with butter, and when nearly cold mark into squares.
- How to Make Good Light Bread**, for Mrs. S. S. G., Texas—To two tablespoonfuls of finely mashed potatoes add one pint of the water in which they were boiled. Scald one pint of milk, add two tablespoonfuls of sugar and one tablespoonful of salt. Have one yeast-cake dissolved. Cool the potato water and milk until they are lukewarm, add yeast and enough flour to make a thick batter. Let it rise overnight, keeping it warm, of course. In the morning add flour enough to mold stiff. Let rise again, and make into loaves. When light, bake. This is very delicious bread. FARMER'S WIFE, Iowa.
- Layer Cake**, for Mrs. O. C. T., Wisconsin—One and one-half cupfuls of butter and one and one-half cupfuls of sugar, creamed together, one cupful of milk, two and one-fourth cupfuls of sifted flour and two small teaspoonfuls of baking-powder. Mix thoroughly, and add three eggs, one at a time, and beat long and hard. Save the one-fourth cupful of flour and the baking-powder until the last thing. Flavor to suit taste. Bake in two layers. If a white cake is desired, use the whites of six eggs (instead of the three whole eggs), adding them the last thing. The whites should be beaten until they are stiff. M. H. C., Illinois.
- To Make Good Light Bread Without Potatoes**, for Mrs. M. F. McG., Michigan—First make a sponge. Dissolve one cake of compressed yeast in one-half teacupful of lukewarm water. Put this in the vessel in which you wish to make your sponge, add one quart of lukewarm water, one handful, each, of salt and sugar, and one and one-half quarts of flour. Let this stand overnight. In the morning have a big pan ready, sift four quarts of flour into this pan, add one quart of lukewarm water, one teacupful of sugar, one handful of salt, one teaspoonful of soda and half a teacupful of lard. Add the sponge, and knead; work in flour until you can work the dough without its sticking to your hands. Cover the dough, and let it rise until it is double its size, then work into loaves, and let it rise to double the size of the loaves. Bake in an oven hot enough to brown a piece of white paper in eight to ten minutes. This is enough to make six big loaves. I have used this recipe for some time and make fine bread. Mrs. B. P. A., Illinois.
- For Miss E. E. K., Pennsylvania—Recipe for Lady Baltimore Cake was published August 17, 1912, in the Housewife's Letter-Box, and popover recipe was published February 17, 1912, in the Housewife's Letter-Box.
- If Mrs. C. L., Ohio, will send a stamped and self-addressed envelope to the Editor of the Housewife's Letter-Box, pattern for bouquet of roses in cross-stitch will be sent her.

WOMAN'S HOME COMPANION

[PUBLISHED BY THE PUBLISHERS OF THE FARM AND FIRESIDE]

FOR DECEMBER



"The Jilt"

By Mary Hastings Bradley, author of "When a Man Loves"

THE most exciting novel the Woman's Home Companion has had for a long time is the story of a girl who was engaged to two men at the same time. And she was a nice girl too. "The Jilt" begins in December.

Holiday Fun for All

Novel Christmas entertainments, nice, homey, practical parties that do not mean too much work, are described in the December Woman's Home Companion. Unique ways of wrapping up and distributing gifts; good ideas for church bazaars; patterns for fancy dress costumes.



The King's Only Daughter

Fifteen-year-old Mary is the pet of the royal family of England. The true story of this captivating little princess, illustrated with intimate photographs, is told by William Armstrong in the December Woman's Home Companion



A Christmas Painting

A painting by the famous American artist, Francis D. Millet, is Woman's Home Companion's Christmas gift to every reader. The picture is reproduced in all its original colors, on paper twenty-two by sixteen inches in size. It is the first of a notable series of art masterpieces in color.

Grace S. Richmond's Story

"Under the Christmas Stars," by the author of the "Juliet" stories, is one of the many absorbing stories in the Christmas Woman's Home Companion. It is a story that will bring laughter and tears, the story of a wonderful Christmas party; illustrated in colors by Alice Barber Stephens.



101 Christmas Gifts

- Animals
- Baby Jackets and Caps
- Bags of all kinds
- Baskets
- Book Ends
- Bootees
- Candies
- Candle Shades
- Cookies
- Cut Leather
- Doll House
- Dolls' Dresses
- Furniture
- Handkerchiefs
- Handkerchief Cases
- Jabots
- Lamp Shades
- Mechanical Toys
- Men's Cravats
- Painted China
- Pincushions
- Sofa Cushions
- Trays
- Watch Fobs



that are easy to make-

and many, many others in the Christmas

WOMAN'S HOME COMPANION

15 cents

Jolly Christmas Tales

"The Little Brown House," by Marie Conway Oemler, is a Christmas story as jolly as its title. "The Return of Esau" is a striking tale by Georgia Wood Pangborn. "The Blakers' Baby" was left on the Blakers' doorstep, and his story is told by Frederick M. Smith; and among the others there is a delicious story of a boarding-school girl's escapade by Edith Brownell.



The Kutest Kutout Dolls

A big page of the famous Kewpie Kutout dolls appears in every number of Woman's Home Companion. In December you will cut out "Stern Irene," a big girl doll, and the little Kewpie Gardener. They have both fronts and backs so that when cut out they make real dolls.



Go to your news-stand, or mail this Kewpon to-day

WOMAN'S HOME COMPANION
381 FOURTH AVENUE, N. Y.

Here is 15 cents. Send me—quick—the December Woman's Home Companion, containing the Kewpie Kutouts.



Kewpie Gardener

Name _____

Address _____

Get it at News-stands, 15c—or send 15c to
Woman's Home Companion
381 Fourth Avenue, New York



BIG CHRISTMAS BOX FOR YOU

THIS is the finest collection of Christmas presents that we have ever had for our FARM AND FIRESIDE subscribers. Every article in this big collection has been especially designed for our FARM AND FIRESIDE folk, and is something you will need during the Christmas season. The illustration can only give you a slight idea of all the handsome and exquisite articles in your Christmas Surprise Box. You will surely think this is the greatest gift of all FARM AND FIRESIDE presents.

One Hundred Surprises In a Beautiful Holly Box

THERE are one hundred different articles in each Surprise Box. Here are some of the things that you will find—twenty-five beautiful Christmas and New Year post-cards, the very finest and most exquisite designs and colorings. Besides post-cards you will find a special dainty Christmas Gift Card, dozens of Santa Claus seals for you to stick on your Christmas packages, tags, stamps, stickers and many other articles, all of which will add decidedly to the spirit of the Holiday season. You will wonder how you ever enjoyed Christmas before without these beautiful articles.

1913 Calendar

EACH Christmas Box contains a pretty and artistic 1913 panel calendar. This is the daintiest calendar we have ever seen. It is panel shape, 16 inches long and 4 inches wide and printed in ten different colors. This calendar is exceedingly pretty and unique and will look very ornamental on the walls of your parlor or living-room. Remember, this calendar is included in your Christmas Box Collection.

Great Christmas Offers

Offer No. 1. Send \$1.00 for the renewal of your subscription to FARM AND FIRESIDE three years—78 numbers. You will receive our Christmas Box, all charges prepaid.

Offer No. 2. Send 50 cents for a one-year subscription to FARM AND FIRESIDE—26 numbers. You will receive our Christmas Surprise Box, all charges prepaid.

Offer No. 3. Send 80 cents for two different yearly subscriptions to FARM AND FIRESIDE at 40 cents each. One of these subscriptions may be your own. You will receive this Christmas Surprise Box as special reward.

These Offers Expire December 10th

FARM AND FIRESIDE, SPRINGFIELD, OHIO

For Economy's Sake Cheese vs. Meat

WE ARE becoming more accustomed to the idea of omitting meat occasionally from our dinners. Nothing takes the place of meat quite so well as cheese or a combination of cheese and eggs. The United States Department of Agriculture, in Farmers' Bulletin 487, has many good words to say for cheese and its economical uses in the diet. Among other things, this bulletin tells us that experiments in feeding young men in good health on cheese proved that over ninety per cent. of the nitrogenous material of the cheese was digested and nearly ninety per cent. of the energy it supplied was available for use. These experiments refer, of course, to full cream cheese, although at the same time experiments gave practically the same value for digestibility of skim-milk cheese, Swiss, Roquefort, Camembert and cottage cheese. From this very interesting bulletin some recipes have been chosen and are presented here to our readers. The bulletin not only tells how to make up cheese into various palatable dishes, but it suggests bills of fare in which cheese dishes are the chief source of protein and fat; that is, are used to take the place of meat in the menu. Here are three of them:

No. 1—Macaroni and cheese, raisin bread or date bread, orange and watercress salad, baked apples, sugar cookies, cocoa.

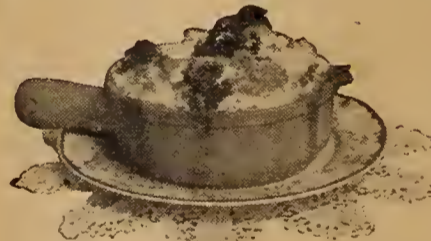
No. 2—Cheese fondue; toast, zwieback or thin, crisp baking-powder biscuit; celery; potatoes, baked, boiled or fried in deep fat; peas or some other fresh vegetable; coffee; fruit salad with crisp cookies or meringues.

No. 3—Clear soup; baked eggs with cheese or Boston roast; baked potatoes; lettuce salad; a sweet jelly, crab-apple or quince for example, or a preserve; rye bread; orange or banana shortcake; tea.

Any housewife interested in this bulletin may obtain it by writing to the Department of Agriculture and asking for Farmers' Bulletin No. 487, entitled "Cheese and Its Economical Uses in the Diet." Not only are its suggestions useful in economically eliminating meat from the meal, but they furnish ideas in plenty which might be used for refreshments at an evening supper, a noonday lunch, a church social or as aids to the filling of lunch-pails for school-children or men at work out-of-doors.

Almost everyone likes cheese and some few folks who don't like it may find it agreeable to cultivate a taste for it through the medium of some of the tasty dishes given below. These are but a very few culled from Uncle Sam's cook book.

Corn-and-Cheese Soufflé—One tablespoonful of butter, one tablespoonful of chopped green pepper, one-fourth cupful of flour, two cupfuls of milk, one cupful of chopped corn, one cupful of grated cheese, three eggs, one-half teaspoonful of salt. Melt the butter, and cook the pepper thoroughly in it. Make a sauce out of the flour, milk and cheese;



Corn-and-cheese soufflé

add the corn, cheese, yolks and seasoning; cut and fold in the whites beaten stiffly; turn into a buttered baking-dish, and bake in a moderate oven thirty minutes. Made with skim-milk and without butter, this dish has a food value slightly in excess of a pound of beef and a pound of potatoes. Calculated cost about twenty cents.

Boston Roast—One-pound can of kidney beans or equivalent quantity of cooked beans, one-half pound of grated cheese, bread-crumbs, salt. Mash the beans or put them through a meat-grinder. Add the cheese and sufficient bread-crumbs to make the



Boston roast

mixture stiff enough to be formed into a roll. Bake in a moderate oven, basting occasionally with butter and water. Serve with tomato sauce. This dish may be flavored with onions, chopped and cooked in butter and water. Serve like any other gravy.

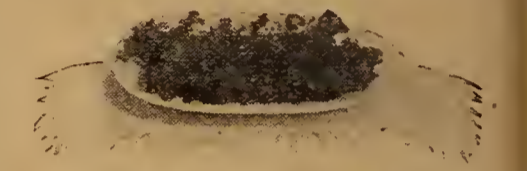
Creamed Cheese and Eggs—Three hard-boiled eggs, one tablespoonful of flour, one cupful of milk, one-half teaspoonful of salt, speck of cayenne, one-fourth cupful, or one ounce of grated cheese, four slices of toast. Make a thin white sauce with the flour and



Creamed cheese and eggs

milk and seasonings. Add the cheese and stir until melted. Chop the whites, and add them to the sauce. Pour the sauce over the toast, force the yolks through a potato-ricer or strainer, sprinkle over the toast.

Fried Bread with Cheese—Six slices of bread, one cupful of milk, two ounces, or one-half cupful, of grated cheese, one-half teaspoonful of salt, one-half teaspoonful of potassium bicarbonate, butter or other fat for frying. Scald the milk with the potas-



Fried bread with cheese

sium bicarbonate; add the grated cheese, and stir until it dissolves. Dip the bread in this mixture, and fry it in the butter. The potassium bicarbonate helps keep the cheese in solution. It is desirable, however, to keep the milk hot while the bread is being dipped.

Cheese Custard—One cupful of grated cheese, one-half cupful of cream or rich milk, yolks of two eggs, a speck of salt and of paprika. Mix the cream and the cheese,



Cheese custard

and beat until the cheese is melted. Remove from the fire, and add the yolks of the eggs. Bake in paper cases or buttered ramekins. Serve with jelly or preserves.

Regarding Work-Tables—Study to get your work-tables and sinks just the right height. They will, of course, differ, according to the height of the worker.

Too high a table causes a constant strain upon the arms and shoulders. Too low a one causes stooping and a tired back.

Being a mediumly tall person, my favorite table is thirty-two and one-half inches high. On this I can roll out pastry and do similar work without stooping, and in consequence get much less tired than when my work is lower down. About an inch lower is my favorite height for an ironing-board.

A low stove is wearing if it must be used much every day. And a washing can be done much easier if a higher bench than common is used for the rubbing tub.

The easiest way to discover the exact height best suited to yourself is to place blocks of wood on your ordinary table to support a board until you have found which is less fatiguing.

Any woman who neglects to rectify this matter is extremely foolish if she values her own health, for many a woman is nervous and unhappy after a day in her kitchen without knowing the cause. And the causes are, frequently, the table, ironing-board and cook-stove of her daily tasks. A. M. ASHTON.

Household Hints—After peeling onions, rub a teaspoonful of wet salt over the hands. Rub it in well, and rinse in cold water, and all odor of the onions will have vanished as if by magic.

In sewing a piece of bias material to a straight piece, the former is apt to stretch. To avoid this, the bias should be placed on top and held in with the left thumb, to prevent stretching.

The perennial larkspur is a plant that can be grown successfully in half-shade; they give us one of the scarcest of all colors found among flowers—an intense lavender-blue. The white and blue sorts can be planted together with fine effect, or the blue flowers can be used as a background for yellow flowers. Plan for this next spring. MARY MASON WRIGHT.

Brilliantine—This rather expensive toilet luxury for the hair is made with one teaspoonful of olive-oil, cut with three ounces of alcohol, and scented. A few drops on the hair, when well brushed, makes the hair soft and lustrous. M. S. HUMPHREVILLE.

The Overworked Woman

What the Farmer's Wife Owes to Herself

By Katharine Atherton Grimes

THERE is no woman more strict in her performance of duty than the wife and mother on the farm. Yet, in her careful watching after the welfare of her home and family, she often misses her duty to one most important member in it—herself. Anxious to spare the rest every possible care and labor, she overburdens her own shoulders, and the sad result is told on too many white stones in the burial-places of the land. There is a deeper pathos in the passing of a young wife and mother than in the death of many a famous hero-martyr, and the saddest thing about it, many times, is that she herself might have made it different.

A Wife's Duty

Any woman who has the duties and responsibilities of wife and motherhood resting upon her owes the very first duty to herself. This is by no means a selfish one. She cannot do her best for others unless every part of her own physical, mental and moral life is at its fullest possible tide. Her children are her legatees in ways vastly more important than pecuniary ones.

The first thing the overworked woman has to learn, and generally the hardest, is to rest. If she does not take it when her weary system demands it, nature will sooner or later enforce the debt in chronic invalidism, hypochondria, insanity, or death. Who does not call to mind some personal acquaintance now suffering from some of these terrible afflictions? And the greatest pity is that so many are following the same road, in most cases unnecessarily.

The Cause of Nervous Breakdown

The hardest thing to learn is to stop in time. There is always so much to do that the temptation to keep on a little

tirely different from the regular routine of housework. Even if it involves a certain amount of work, it furnishes a variety, and does not keep the strain on the same set of nerves.

Some women find real relaxation in fancy work, and this is a pleasant and convenient form of rest-work that answers every purpose, if it is taken out of doors to be done when the weather is pleasant. The greatest good comes from any form of recreative work when it is done in the open air. Sunshine and breeze are the most powerful and invigorating tonics for weary womanhood. Many a case of "nervous breakdown" and "run-down system" needs nothing else. And yet the foolish victims will resort to patent medicines and quack nostrums, when the remedy God has given is just outside the door.

Many a woman seems to glory in the amount of work she has done when "just able to drag around." Such martyrdom is neither admirable, nor deserving of sympathy. There is always some way out of doing an unreasonable amount of work, and the wise woman will find it. What she cannot do, and be justified by her strength, she will leave undone.

Train the Children to Help

Many times a little head-work will save much heel-work. Planning things for the day will save an endless number of steps. The little treat for supper can be got ready in the morning. Or, the children can clean up the house while mother cooks breakfast. This is one great place where mothers often fail: they do not teach the children to be really helpful. Nearly any child will take an interest in helping if he has been taught to do things in the best way. Where there are several, let each be responsible for the tidiness of some certain room, or part of a room, and it is not hard to make the well-doing of each particular duty a point of pride.

Do not depend on the girls alone. Let the boys help, too. It never comes amiss to have a handy boy around, and, as they are usually stronger than the girls, there are many things about the house that they can do even better. More than that, they really should have the training. There was never a man yet who had not at some time felt the need of understanding how to do some of the simpler things about the house. Let the girls wash the dishes, and the boys bring the wood one day, then change places the next. The mother owes it to them to teach them an honest liking for, and pride in, every-day duties, and to herself to let them take as many cares as possible from her own shoulders. She will have enough then.

How to Make Work Lighter

The farmer's wife also owes it to herself to have as many labor-saving devices as can possibly be afforded. It is no worse for her husband to hoe corn by hand, when he can get a proper tool for five dollars, than it is for her to bend over a rubbing-board when a washing-machine can be had for the same amount. Every dollar put into helpful household machinery means many dollars saved in doctor's bills. Such things are not expensive, nor do they need replacing often. For example, a food-chopper costs less than a dollar, and will last for years; yet how many women still waste time, and break their backs over an old chopping-bowl. It does not take twenty-five dollars to fit up a kitchen with nearly every little helpful device needed, and every farmer's wife should feel it her duty to have all these strength and time saving articles within her reach.

Make Use of Spare Moments

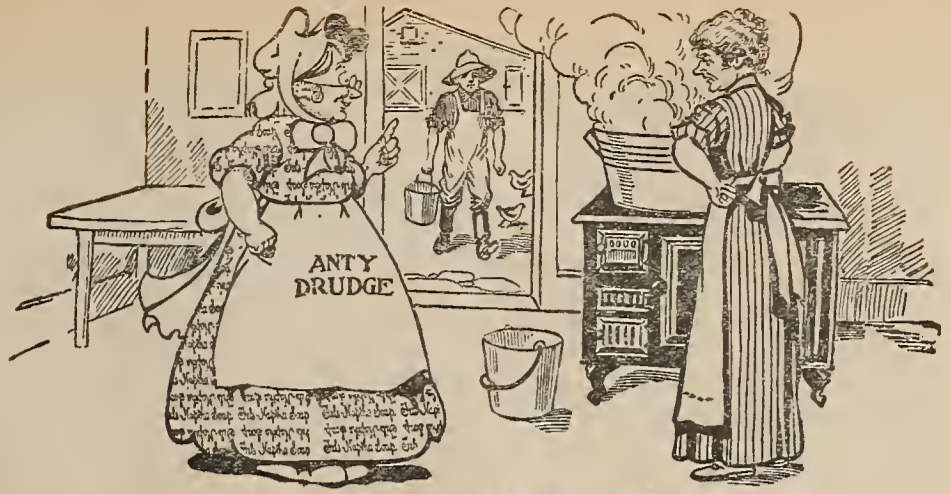
In the multiplicity of daily tasks, the time for reading and study seems often sadly lacking. But it should be found, no matter what else has to go. Ten minutes with a good book will give food for uplifting thought all day. Drudgery ceases to be such if hurrying steps keep time to a noble sentence. A favorite book—in an oil-cloth jacket, if the binding be choice—is perfectly safe in the kitchen cupboard; and many a precious minute can be snatched while the potatoes are cooking, or baby is being rocked to sleep.

It seems an extravagant thing to say that the welfare of the nation depends most largely upon the wives and mothers of the farms. But it will be seen to be strictly true. Without the farms the country could not exist; and without brainy, energetic farmers what would become of the farms?

So in summing up the duties women owe to themselves we are stating their obligations in an ethical and economical sense, and find that there is really no selfishness when woman considers herself first.

A Change of Occupation

often furnishes the needful rest. It is well for every woman to make a hobby of something. It may be books, or music, or flowers, or even a patch of extra fine vegetables, if it is not too big. It should be something that will relieve her mind as well as her body. It ought, also, to take her out-of-doors as much as possible. In any case, it should be something en-



Anty Drudge's barn hint

Anty Drudge—"Well, well! Mother Smith, what is the matter? You look as though you had lost your prize chickens."

Mother Smith—"Oh, no! it's not that. When the men wash bandages and stable sheets down at the barn, they come up and bother me for a cake of soap and a bucket of boiling water. I wish to goodness they could do without hot water."

Anty Drudge—"They can. Just give them Fels-Naptha Soap for the barn. They can use that with cool water and the things will wash out clean and sweet."

A wise farmer never overworks his horses. Tired animals lose their efficiency.

Why don't you, Mrs. Farmer, be as wise as your husband? Why do you wear yourself out on washday so that you are unfitted for work during the rest of the week?

You can make washing easy.

Try the Fels-Naptha way. Put your clothes to soak (after rolling) in cool or lukewarm water with Fels-Naptha Soap, wash up your dishes, come back and rub out the clothes, rinse—and they are ready to hang out. Sounds too good? But it's true. Just try it. Buy a cake of Fels-Naptha Soap before next washday and follow directions on red and green wrapper.

For full particulars, write Fels-Naptha, Philadelphia



"Enjoy a play-spell with the children in the orchard"

longer often prevails, in spite of the cry of aching muscles and unstrung nerves. This is especially true on the farm, where there are always things out of doors as well as in that need a woman's hand. The wise woman knows when she has done enough.

It is far better to leave the floor unswept, and enjoy a play-spell with the children in the orchard or field, than to point to a spotless kitchen and have missed the frolic. Oh, that every mother would realize this! The children can be small for such a little time. If mother must always be tied to dusting and cooking, the first thing she knows the little ones are out of reach, and the golden time for cementing the bonds between herself and her children has slipped away forever.

The tired, frowning woman, who meets her hungry, noisy brood of little folks at supper-time with a cross word, has certainly missed the secret that the other woman has learned: that the hours spent in the open air, with the hot kitchen forgotten, were worth their weight in gold to her as well as the children; and that when she came in, as hungry and merry as they, she had garnered strength and spirit for another day of necessary toil.

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FROM THE MILL Buy from the manufacturers and save dealers' profits. 25,000 satisfied customers. Well-known Regal Rugs, 6x9, reversible, all-wool finish, \$3.75. Brussels Rugs, 9x12, greatest value known, \$3.60. Splendid grade Brussels Rug, 9x12, \$4.75. Famous Indivisible Velvets, 9x12, \$16. Standard Axminsters, 9x12, \$16.80. Best quality Lace Curtains, 45c per pair and up. Tapestry Curtains, Wilton Rugs, Linoleum and Furniture at mill and factory prices. Write to-day for our New Illustrated Catalog, No. 15, showing designs in actual colors. SENT FREE.

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This Combination Jack-Knife For Subscribers

This is the leather punch blade.

This is the handiest and best knife ever made. It contains one large blade 2 3/4 inches long made of the very best steel. It also contains a combination blade 2 1/2 inches long, which is especially suitable for making various size holes in leather for buckles, rivets, belt lacing, etc. This punch blade is also adapted for use in lacing belts and untying knots, and such like. This is a practical knife and will be found of great value to the farmer, stockman, teamster and sportsman. It is just as easy to carry in the pocket as a three-bladed knife, and is practical, convenient and durable. Every subscriber should have one of these knives.

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1. This jack-knife will be sent you, all charges prepaid, for a remittance of \$1.00 to pay for the renewal of your subscription to FARM AND FINEST for a period of three years. Even though your subscription does not expire for several months, renew now. Your renewal will take effect after the expiration of your present subscription.

2. Get three of your friends to hand you 40 cents each, our special club-raiser price for a one-year subscription to FARM AND FINEST. Send us the three subscriptions and remittance of \$1.20. We will send you the jack-knife, all charges prepaid, as reward for getting up the club.

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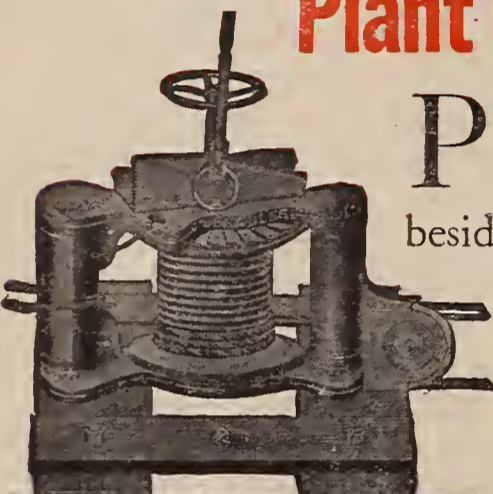
Here are two actual photographs taken the same day the same hour. They illustrate two fields of corn—one adjoining the other. The scene at the left shows an average corn field. The scene at the right shows a field in which stumps stood last year. It took no more seed, no more labor, no more investment of time or money, to raise the field that will probably produce a 90 bushel-per-acre

crop than the average field that will probably produce a 35 bushel-per-acre crop. The climate was the same for both fields—and the rainfall was the same.

We merely want to show you how much money you are losing by leaving the stumps stand, when you can so easily turn those stumpy acres into dollars.

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B. A. Fuller
President

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Mail Me the Coupon or a Postal NOW!

Let me send you my new, fine, free book at once. I want to show you proof of how you can make \$1,281 profit on forty acres the first year and \$750 every year after, in extra crops and added value of land—by pulling stumps with the Hercules—and how you can make big money in your spare time by pulling stumps for your neighbors or by renting your machine at a nice profit.

Clears an Acre of Land a Day

My book shows actual photographs and prints actual letters from owners, telling of the remarkable feats of the Hercules—how it pulls any size stump, green tree or hedge in less than five minutes—how it easily pulls an acre or more a day. Read how one man increased his land value from \$25 an acre to \$125. Read how easy it is to clear an acre or more of land a day. The fastest working machine made. Prove to yourself that the Hercules pulls the biggest stump in five minutes—an acre or more a day—and three acres without moving the machine. Settle the question of stumpy land once for all. My book will tell you how—the quickest, cheapest, surest, safest way.

Special Features

The Hercules is the only all steel triple power Stump Puller made. It is the only puller that

has the single, double and triple power features, giving you three machines in one. There isn't a stump, green tree or hedge grown that the Hercules won't pull out without straining or breaking any castings. It's the only low-down constructed puller that has self-anchoring and stump-anchoring features—the only one with double safety ratchets, that insure the absolute safety of men and team. Its all steel construction means 60 per cent less weight and 400 per cent greater strength than any cast-iron or "semi-steel" puller made.

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Just simply your name and address on the coupon or on a postal is all I want so I can send you the facts, my book, 30 day trial offer, 3 year guarantee and special price proposition. Send now before you forget and see how easy you can clear your land—and what it means. Address

B. A. Fuller, President, HERCULES MANUFACTURING CO.
878 21st Street, CENTERVILLE, IOWA

Get My Fine Free Book I want you to mail me the coupon or a postal. It will give me an opportunity of sending my grand free book about pulling stumps. It will enable you to read all about the Hercules—its features, the 30 day free trial offer and my remarkable 3 year guarantee which insures the replacement of any broken casting for 3 years—whether the fault is yours or the machine.

Hercules Mfg. Co.
878 21st Street
Centerville, Iowa

Gentlemen: Please send me all free books about the only All-Steel Triple-Power Stump Puller. Also your 30-day free trial and low-price-to-first-buyers proposition

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Grand Prize Yellow Strand Wire Rope Used on Hercules Pullers!

It is this Yellow strand wire rope that won first prize at St. Louis Exposition—proving twice as good as next best cable. It is this Yellow strand wire rope that is being used by the U. S. Government at Panama on the real important work of building the canal. And experts say this

Yellow strand rope is one of the big helps that will enable Uncle Sam to complete the canal a whole year before expected. Don't forget—it's the Yellow strand cable that is showing such wonderful strength—the Yellow strand rope that is beating all others on every test put to it,

under all conditions all over the world. And it is the Yellow strand wire rope that is used exclusively on the Hercules Stump Puller—not a green strand, blue strand, white strand or red strand—but a YELLOW strand—don't forget that—and don't let any unscrupulous person or company confuse you.

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FARM AND FIRESIDE

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SATURDAY, DECEMBER 7, 1912



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With the Editor

I WONDER if my readers ever get tired of my constant reversion to the topic of the rural schools? Do I see a lot of hands shooting into the air? Please do not snap your fingers, children! I can see your hands perfectly. You're all tired of it, or you all want more.

PERHAPS we had better not let you tell me just now, for I have more to say to you on the subject. It all comes from the report of the Wisconsin Board of Public Affairs, entitled "A Constructive Program for the Rural Schools of Wisconsin."

"A Constructive Program"—that sounds like sweet music to me. When I went to a rural school, we didn't have any set daily program. We just recited when the teacher called our classes. Of course, we had a program, but it was never reduced to writing and posted on the wall, as it is now. And, of course, a program isn't any the better for being posted on the wall. It is more convenient for reference, however, when the patrons of the schools or the county superintendent pay us a visit.

We had no course of study. Personally, I scooted through McGuffey's First, Second, Third and Fourth Readers, and Monteith & McNally's Geography before I mastered Ray's First Part Arithmetic. A course of study is a constructive program, as far as it goes. It would have been better for me, as a mathematician, if I had been "whoaed up" a little in my reading mania, and made to buckle down to number work.

SO THE need of a constructive program, even in the district school, is plain. In Wisconsin the defects in the rural schools were recognized by the State Board of Public Affairs. That is a great board, composed of the broadest and wisest men in the State, and when they became convinced that the rural schools are no better than they should be, they proceeded to make a study of them. We people who are busy at making a living can't study these things as they ought to be studied—it is out of the question. We haven't the time. Therefore, we ought to be glad that there exists a body of men who can stand off and take a look at us and tell us what's the matter.

"Presint Ar-r-r-r-ms!" commanded the Irish drill-sergeant to a company of rookies.

The awkward squad presented arms every which way.

"Hivins!" roared the sergeant. "What a presint! Advance three paces, an' about face, an' take a look at yersilves!"

It was a difficult maneuver to carry out. The advantage of having a Board of Public Affairs like that of Wisconsin is that it enables us to stand off and take a look at ourselves.

What is true of the Wisconsin rural schools is true of most of our States. I think the rural schools of Wisconsin far behind the city schools and higher institutions of the State, but they are far better than a lot of country schools I wot of. Perhaps they are

about fair to middling. The State Board of Public Affairs, by which the people of the State are standing off and looking at themselves, after an investigation of twenty-seven counties in widely separated parts of the State, and a detailed examination of conditions in one hundred and thirty-one rural schools of thirteen counties, recommend:

First, a change in the sort of school boards.

That county boards of education be elected to serve six years without salaries.

This board to appoint the county superintendent from an approved list made up by the civil service commission.

This is worth thinking about: a county board, a county superintendent of the same general sort of man as the present city superintendent. What's the objection? Wouldn't we get better men on the whole on school boards than now? And wouldn't it be a good thing to eliminate the superintendency from politics? Jessie Field made Page County, Iowa, a model for its rural schools. As long as she stayed in the office, she was reelected time after time.

MISS FIELD is taking up other work, however. Page County is losing her. The office at once becomes the object of a political struggle. When this is written, the election has not been held—but there is no good reason to believe that Miss Field is to have anything like a worthy successor. There is every reason to fear that her work will not go on, and that the schools she made a model will retrograde to the common level. If there had been a county

board to hire a successor from a list of educators compiled from the successful rural school systems of the nation, the work would have gone on.

The Wisconsin proposal would seem to be a step toward better county superintendents.

The Wisconsin program does not stop here. It suggests that the county board have control of the teaching of agriculture and the appointment of assistant county superintendents in certain cases.

ANOTHER Wisconsin suggestion is that the State give aid to rural schools in the form of money on condition that the county pay the county superintendent adequately, that the county hire a good clerk for the superintendent, and that the superintendent shows himself to be efficient.

It is impossible for me here to tell in detail what this "Constructive Program for the Rural Schools of Wisconsin" embodies. I wish every rural teacher, every member of a rural school board and every county superintendent in the United States would ask the State Board of Public Affairs, Madison, Wisconsin, for a copy of it. It is a program planned by broad-minded men with no object in view other than the welfare of the schools. As such it seems to me to be a fine thing for all of us to study.

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Robert L. Quick

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Vol. XXXVI. No. 5

Springfield, Ohio, December 7, 1912

PUBLISHED
BI-WEEKLY

She'll Be a Good Layer



Plymouth Rock. She belongs to Mr. James B. Morman, who writes:

WE MAY safely count on this pullet to be a good layer, because she began September 30, 1912, when she was only a little over six months old. This is a gain of over a month and a half on the normal period of her breed—White

Tell me, did you ever see a prettier work of nature? She is unwashed, no prepared show bird, but clean cut as nature made her. I am keeping her record of egg-production and shall in all probability use her for breeding next spring. Don't you think I am working along right lines? I do, and here is my reason: I have a pen of my pullets which laid a higher average per pullet in the two months of February and March than the Maine Experiment Station's celebrated pullets laid per pullet for the four months of November to March. That is a record for you as a result of changing strain and cumulative breeding."

It certainly looks as if this progressive farmer were "working along right lines."

The Cultivation of Small Grains

NEARLY twenty years ago H. W. Campbell advocated the sowing of small grains in drills and its cultivation with machinery during the growing period. The drills were given shallow cultivation every few days and became somewhat ridged up, or hilled, during the summer. He grew some fair crops of wheat, oats and barley in the Dakotas, but appears to have abandoned this method in his dry-farming system in favor of the plan of summer cultivation one year and ordinary drilling the next.

In Europe many experiments have been conducted during the past few years along similar lines. Small grains were sown in drills, deeply covered and hilled for moisture conservation. The methods of the Chinese were followed in the main. Heavier yields were obtained than by the ordinary methods, and some useful things were learned, but, on the whole, it was apparent that labor is still too expensive, even in Europe, to make Chinese methods profitable. The investment in flesh and blood is too great per bushel of wheat.

"One by One the Roses Fall"

THE agricultural colleges and experiment stations are among the greatest sufferers from the high cost of living. The price of good research workers is gradually going up, until the question of subsistence is a critical one for some of our institutions of agricultural learning.

Men like M. M. Cottrell and Thomas Shaw, to mention two names in a list which might be greatly extended, have been leaving the educational and laboratory work for years. Cottrell went with the Rock Island Railway Company as its agricultural commissioner, Shaw accepted a similar place with the Burlington system, and now the announcement is made that Dr. H. J. Wheeler is leaving the Rhode Island Experiment Station, where he has made himself illustrious, and has taken employment with the American Agricultural Chemical Company.

Those who know Doctor Wheeler's record will have no doubt that he will still continue to do strictly scientific and useful, even though commercialized, work. It may be even more extensively beneficial to agriculture than what he has done in the past. It is a good indication, too, that great industrial and transportation companies are beginning to follow the German policy of attaching great scientists to their service. The American business man has been all too slow in this. The new era will be a great one for scientific students.

But what of the colleges and experiment stations? The competition is sure to be pretty strong for them. Unless the States and the Federal Government are to see their departments gradually lowered in scientific tone, they must prepare themselves to offer inducements to successful men as great as those which railways, fertilizer companies and other commercial concerns seem to have at command.

Good Siloes and Good Silage

AFTER several years of experimentation, Connecticut research workers pronounce in favor of the wooden silo as against that made of cement, brick or stone. The reason given is that the wooden walls hold the heat better than do the other materials. Just how much difference there is does not appear.

Farmers generally will be interested in the conclusion that any farm crop containing the proper amount of sugar may be siloed. Alfalfa mixed with rye, clover mixed with timothy or wheat or oats, oats mixed with peas, and corn mixed with cow-peas or soy-beans are approved as ensilage mixtures, because they silo successfully and make desirable and well-balanced rations.

The silo will grow in popularity as we learn to what an extent it lends itself to the saving of many crops in a safe and succulent and appetizing form.



AUGUSTUS J. ROGERS, who is a valued contributor to our fruit-growing department, gets all of his fruit information at first hand. If he were not so busy looking after his orchard, we would hear from him more frequently. Mr. Rogers is a Wisconsin product who has become deeply interested in the fruit industry of Michigan, where he has a commercial orchard. The photograph shows him inspecting a cover crop of hairy vetch which is just coming up between the rows of his four-year-old sour cherries.

We are accustomed to think that plants get all their food through their roots. But certain recent experiments seem to show that they can be fed through their leaves. Rape grown in soil poor in potash made normal growth when the leaves were painted with potash, but stood practically still when left alone.

Mustard and other soft-leaved weeds may be killed by means of a spray of iron sulphate solution. Wisconsin experience seems to show that in the case of mustard, at least, ordinary salt brine will do just as well. Use 125 pounds of salt in fifty gallons of water and spray thoroughly. The salt is easily obtained and is cheaper than the iron sulphate. Neither harms the soil.

Why Eat Meat?

WE SHALL probably be a long time passing through the period of discussion as to the benefits of a meat diet. The food one likes may be eaten, usually, with perfect assurance that the normal appetite is a good guide.

Vegetarians insist that an animal diet tends to the development of animal traits. They cite the tiger and the lion as horrible examples of the effects of meat-eating. Meat-eaters retort that all the brains in the universe are possessed by animals, and that the gorilla and the hornet are bad citizens, though vegetarians.

Most of us will be guided by the test of the usefulness of food in enabling us to do work. Professor Slonaker, of Leland Stanford University, has something to tell us on that point. He used in his experiments two pens of rats, one of which he fed on a diet based on the principle of eat-anything-you-like, giving the others a vegetable diet exclusively.

The omnivorous rats exceeded the vegetarians in energy. They did nearly eight times as much "work" of the sorts rats indulge themselves in. The vegetarians aged more rapidly, though their growth was greatly retarded. The omnivorous feeders weighed more than fifty per cent. more than the vegetarians at maturity. The vegetarians were weak, frail and sluggish. The omnivorous feeders were energetic and strong. The average life of the vegetarians was 555 days, and of the eat-what-you-like group 1,020 days.

"From numerous observations," says Professor Slonaker, "and experiments of other investigators on man, we would infer that similar results would obtain if he were subjected to similar conditions throughout his lifetime."

Of course, a man is a man, and not a mouse or a long-tailed rat; and life is not exactly a cage—nevertheless, please pass the pork and beans!

Peanuts, Goobers, Ground-Peas

THE peanut is growing in importance. While it is a plant that flourishes best in our southern and border States, it can be successfully grown on both sides of the Ohio River and farther north than most of us are likely to think. As a forage-plant for hogs it is unsurpassed, and a fine hay may be made of it. When the "goobers" are fed with the hay, it makes a ration rich in protein, and the peanuts themselves make an exceedingly rich concentrate for the balancing up of feeds. Hogs will harvest peanuts themselves and leave the ground in fine condition.

Professor Cottrell, a very high authority in practical farming, has stated that every farmer who lives in the peanut-growing regions should grow a few acres every year.

Peanut butter is increasing in use every year. It is made by the grinding of fresh roasted peanuts and salting to suit the taste. One large manufacturer puts up and sells over six millions of jars of this food a year. Last year something like a million bushels of peanuts were sold as butter.

The farmer who can convert his raw produce into finished products has an advantage over the seller of crude output. There are fewer middlemen to live by the process of getting the crop to the mouths. Mr. Beattie of the Bureau of Plant Industry asserts that a clean and good peanut butter may be made on a small scale, and has published Circular No. 98, which may be had of the Department of Agriculture at Washington, describing the best methods of making this delicious food.

The peanut is a legume, and its adoption in the scheme of crops on any farm is a move in the direction of keeping up fertility. It is as good for the soil as clover or alfalfa. It will pay all of us to give the peanut question a lot of thought and some personal investigation.

Taxes on Error—By Wm. Johnson

Take the Back Track from Every Dollar to Its Source and Find What It Cost



AT A SCHOOL meeting some years ago, I heard a man say that taxes would drive him off his farm. He was entirely serious about it, too, and resentment fairly dripped from the point of his phrases.

"By the Lord Harry, I can't stand much more of it,"

he declared. "I don't get the crops. There's nothing in the grain but hard work. How's a man going to meet expenses? Can't, that's all. I'm going to make a shift if there ain't some improvement pretty soon."

I thought then that it was an overdrawn situation. It hardly seemed that taxes could drive a man off his farm, though they certainly are not one of the silken cords which hold him there. Taxes emphasize expenses all true enough. They are an item to consider soberly, best characterized, perhaps, as a hopper into which many a slice of profit is thrown; but so long as law and order, education, roads and bridges come out of the spout the loss shades into gain. It is accepted, too, that taxation discourages improvement. "If I move that old stone fence and clean up them corners, my taxes'll go up. Gittin' so a man can't put up a bird-house or oil the plow-wheel without a raise in his taxes. I'd like to improve the looks of my farm, but I can't afford to pay taxes on looks. They don't feed cows, nor pay store-bills."

Paying for Privilege

So stone fences and stone piles and odd corners are left to breed weeds, handicap the use of machinery and lower the tone of the farm; perhaps not without reason, but certainly not for the best reason. Giving taxes full weight then, they could hardly drive a man off his farm. True, a meager harvest casts an indigo shade; from over the gray edge of it expenses look like white streaks of disaster. But one day it struck me that in meaning and effect the word "taxes" meant more than just a trip to the town treasurer's office and the payment of some well-earned dollars.

Other dollars just as well earned are paid, or lost, as the expression pleases, every day of the farm year. Farmer Jones, we will say, owns eighty acres of land and equipment, on which he pays a forty-dollar tax.

But he also owns a narrow-tired wagon or a dog on which we will assume that he pays a one-dollar tax. Why is this last tax proportionately higher? Well, narrow-tired wagons unmake dirt roads, and dogs warranted to eat out of the hand sometimes take most shocking liberties and eat out of the leg instead. They are a privilege, and the belief has gotten into law that privilege must be paid for and it generally is.

Farmer Jones also believes in the excellence of the shallow furrow. He does not pay as much attention to rotation, fertility and moisture as he might. A wet spring finds him behind with his work, and in the hurry he prepares a pasture for oat-roots, consisting mainly of lumps, hard ridges, air spaces and the hardpan of many previous shallow furrows.

Good-By and Good-Morning to Tax-Money

Of course, the farm belongs to Jones, and it is his privilege to handle it as he pleases, but such methods are inimical to the welfare of the oats. The oats resent it and fall short ten bushels on the acre yield. What does that ten bushels of grain represent more clearly than the price of a privilege to handle soil any old way at all. It is a tax on the error, or it is nothing. One dollar tax on the dog—he may bite some passerby. Five dollars tax per acre on poor methods—they bite the owner. A parallel with this important difference: the tax on land, personal property, wagon or dog is expended for public gain. We say good-by to that tax-money to-day at the treasurer's office, but we will say good-morning to it some to-morrow, in the shape of laws, roads and education; but the tax on errors of farm practice is a hopeless loss. We say good-by to that forever.

When the whole farm is turned into a tax-roll and it is written here, "Five bushels oats, tax per acre on shallow plowing and weedy soil," the ability of taxes to drive a man off his farm may not look impossible. The truth of it often comes too late. There are, of course, causes of low yield, but the general rules that reach pretty well into the corners are: Error lies at the root of losses, leaks and wastes.

It runs disastrous riot in poor management. "Bad luck" is usually a softer name for the harsher term "bad management." And over this rule arches the sure truth that the error is always taxed, sometimes in a deceptive, complicated way not readily discerned, but taxed nevertheless at a rate that ought to be prohibitive. The danger is that we fail to detect the error or realize the toll it takes off profits. Blame is like dust;



"If I . . . clean up them corners, my taxes'll go up"

it is liable to settle anywhere, perhaps on something which may be the real cause of loss only so far as method and management allow.

The Brassy Thistles Under Control

"It pays to keep your land up," a farmer once told me, and more truth never tumbled into seven short words. We were looking at a field of his clover that was saying the same thing in its own luxuriant way. "That piece of land was in pretty poor shape a few years ago," the farmer went on, "but look at it now. Shows what cultivation will do." That farmer has been studying and getting the hint from every turn of success or failure. His farm had been just about the average grain-farm, and with a couple of unfavorable seasons there came the harvest of low yield. Weed growth was creeping in and fertility creeping out. But in this case the blame was laid where it belonged.

One of his fields in particular was badly infested with thistles, a rugged prickly tax on much growing of small grain. The field was plowed about six inches deep and subsoiled as much more. Every furrow was carefully laid and enough harrowing given to insure sub-surface packing and reduce the last lump.

Then the land was planted to sugar-beets. Of course, the thistles came. It's a brassy way they have, of thrusting themselves forward where least wanted. But that field was going to be an unhealthy location for thistles. The owner had previously invented an efficient sugar-beet "blocker" that seemed to promise well along another line. The essential principle was an underground knife. The contrivance was freely used until the beet-tops filled in the rows and kept the rains just where they ought to be. The beets made a fair crop.

Errorisms

Error lies at the root of losses.
Error is always taxed.
Poor tillage is always taxed.
Hard-earned dollars are paid every day for the privilege of farming carelessly.

The next season the field made a good yield of oats. The smile of good clover "catch" followed, and the field looks now as though it were on good terms with profit.

Poor tillage is always taxed! The answer must be a dependable one, for there are degrees of poor tillage and degrees of effect. The benevolence of a fertile soil and favorable season may overlook much. But with a soil that has felt the pressure of much cropping, and a season not so favorable, the heavy tax on poor methods will finally come. What makes the difference, as we often see it, between crops with just a road between? The same clouds watered both, the same degree of heat, cold, breeze and sunshine was given to each.

Do You Pay a Tax on Poor Dairy Cows?

Yet one promises profit, and the other threatens loss. It is method of handling. The crop wounds of one field have felt the healing touch of clover and manure. A better rotation and tillage has made the most of these. The other field has been neglected in these essentials. Suppose the difference in yield between the two is five bushels of fifty-cent grain to the acre. It would amount, on forty acres, to one hundred dollars. That is something of a tax to pay. An assessed tax of that size on the forty would dethrone many a freeholder's reason, but a tax of one hundred dollars on the methods which are injuring the "forty"—how many times worse is that? When profits get to springing leaks of that size, there are breakers ahead.

The tax on error is a tax on any error. Mistakes of management have no particular affinity. They are found wherever thorough methods are lacking.

There is, for instance, the importance of dairy cows. I do not think our management of them is illuminated by enough arithmetic. The Wisconsin Experiment Station has estimated the feed and care of a dairy cow at fifty dollars. The figures present a tangle of possibilities. Fifty dollars' worth of feed and care may be given to a cow producing 240 pounds of butter-fat in a year, or to one producing only one hundred pounds. At an average price of thirty-two cents the first cow

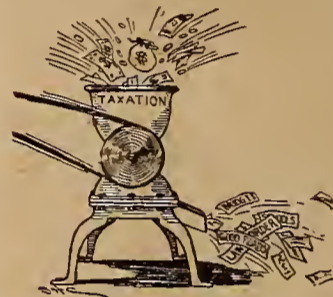
would return \$76.80, or a margin of \$26.80, above her expense; the second cow would return \$32, or a loss of \$18, on her cost. The difference between a profit of \$26.80 and a loss of \$18 is too profound to be successfully displayed with figures. It is the contrast between a man who smiles at a dollar which cost him 65 cents and another who contemplates in bitterness the dollar costing \$1.56.

We are making cow progress, but there is yet too much toleration of the "shirk" and "boarder." She occupies the place a better cow should have. She will take from every ounce of feed that she consumes all possible profit. The moral should be: "Keep up the cow that keeps down the cost."

When silo, hay-mow and feed-bin have been filled, we realize pretty well what they represent. They stand for the best we can do with expensive machinery, valuable time and tested methods. But what was the cost of production? What is the produce worth? What will it bring? Pencil and paper and the market reports will answer the first two questions, but the answer to the last depends largely on the kind of live stock to which that silage, hay or grain is fed. Whether we are feeding for cream, beef, pork or wool, there is one fact that sits in judgment on the result. Scrub stock brings scrub returns; only good stock bred for the purpose will bring profits. This subject is steeped in importance, for much of the farm revenue depends, or should depend, on the successful handling of live stock.

Wasted Energy

There are things other than the animal and its feed which decide the amount of lining the owner's purse shall have.



The energy an animal spends in resisting heat or cold, combating flies, by fright or nervousness, is so much less energy with which to accomplish the purpose for which the animal is kept. It is energy that required silage, grain or hay to make, and which should be focused by intelligent care on the profits, but it goes as a tax on error.

Little leaks sometimes make the lifeboats necessary to a big ship. On the farm they may lead to the necessity of such lifeboats as notes and mortgages, and they are not very seaworthy among the breakers of a few unfavorable seasons and short crops.

Every day some stitch in time is required which may save a whole lot of sewing later on—a poor spot to repair in the fence, a piece of machinery to house, a weed-patch to mow, a bushy corner to clean up, or some paint, bolts, nails, screws, braces or straps to put in the right place. These may not seem much at the time, but attention now may save loss by cattle in the grain, lengthen the life of some piece of machinery, prevent a weedy field or forestall a breakdown later on.

Farming is not a get-rich-quick scheme, there are mighty few "bloated capitalists" between the plow-handles; but is a moderately independent and happy way of bartering perspiration for a healthful and highly respectable living.

The farmer who feared that taxes would drive him from his farm did not realize the part error played in his work. His fears were well grounded, and he left for fields and pastures new shortly after his declaration. And the old farm where he once "smiled and smiled and played the game" is rented out to pasture now. He won some high yields those first years when the charm of the fertile wilderness touch was yet new on the furrows. "I'm just beginning to farm," he said, and coupled that with a declaration that he'd plow more shallow yet if he could. But the game was not played with methods that win on a long average.

A few unfavorable seasons were enough to show the difference between a healthy soil and one that has had its best blood drained into the grain-elevator.

Find the Dollar-Decorated Way

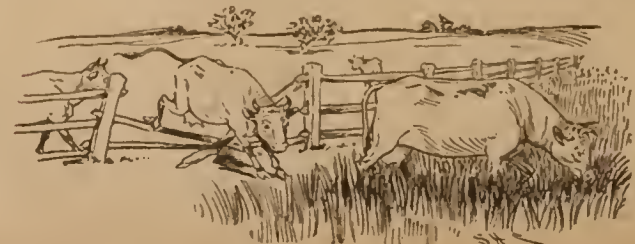
We all need a system of farming in which thought and thoroughness are interwoven with scientific practice.



There is a tendency to disregard the little errors of farm practice, the small losses and leaks.

A furrow turned when too wet or too dry, weed growth left to flourish unchecked—these are short paths to short crops. A short crop is an indication that you are not farming the way that Nature would like you to farm. It means you are working against her instead of with her. The road from a poor farm to the poor house is strewn with good intentions.

We must question and observe. There are important facts all along the trail from work to results. Study them out. Take the back track from every dollar to its source. How much did the dollar cost? How far has it been affected by the tax on any error? Is it a premium on correct methods, or a failure? Truth lies at the other end of a sharp question. Over them is the dollar-decorated way. Is that the road you travel?



"Attention . . . may save loss by cattle in the grain"

Back to Wheat in the Corn Belt

How Winter Wheat May be Advantageously Introduced Into a Flexible System of Rotation

By L. C. Burnett, Wheat Specialist, Iowa Experiment Station



One-horse drill for use in standing corn

WHILE the corn belt has raised more acres and more bushels of wheat with each succeeding decade, still it has not kept pace with its increase in population, nor has the importance of the crop from the farmers' standpoint been

maintained. Each year sees a smaller portion of our flour on the export markets. Each year sees a greater increase in the corn crop than it sees in the wheat crop, but we cannot escape the fact that no highly developed civilization has ever been built by any but a wheat-fed people. The Saxon and the Anglo-Saxon have always demanded wheat as the staple crop for the staff of life.

The demand of our people for wheat bread, however, is only part of the argument, for if we are to maintain an agriculture that will give our population any kind of food-stuff for any considerable time the wasteful methods now common to our corn-belt farm practices must be discontinued.

Soil Sanitation—Something to Think About

This means rotation of crops. Another change that must be inaugurated is an increased attention to the sanitary condition of the soil. Crops can give but poor returns where weeds and insect pests are present. The easiest method to eradicate both of these is by a systematic change of crops. Insects do not thrive except on land where a one-crop system is followed. A change from corn to small grain and then to legumes and grass does not allow pernicious weeds to gain a foothold. If we think of the soil as a complex factory where plant-food is refined from raw material, we may get a better conception of soil conditions, and will be able to understand better the result of our labor on the field.

Any grist-mill that attempted to run by the sale of flour alone would soon be swamped with shorts and bran, and in the face of to-day's competition would be forced to close its doors. Then, too, the by-products would soon be infested with vermin, and if unprotected would become wet and sour. Before long the workers could no longer stay around the place. It would be uninhabitable, and even if the compensation from the flour were sufficient to pay the running expenses, the mill would be forced to shut down because of unsanitary conditions. Now our continuous cropping to corn as it is practised in the corn belt resembles all too closely the mill that sells only one product and dumps the rest as waste in the back yard.

Winter Wheat Pays \$16.19 per Acre

The chief difference lies in the fact that the corn-belt farmer who practises a one-crop system uses a portion of the by-products, but leaves the rest, as it were, to clutter up the mill. Different crops require the various elements of plant-food in varying amounts, and to utilize economically all that the soil will refine for us we must devise a series of crops—that will follow one another in such a manner that the least possible waste will be experienced. Winter wheat increases the money value of the season's crops. During the last five years, winter wheat has given the State of Iowa a greater average return than has her corn crop. The average of both spring and winter crops is greater than any of the other small grains. The accompanying diagram taken from a recent bulletin of the Iowa Experiment Station shows the relative acre value of the principal grain crops of that State; winter wheat is in the lead.

The great argument for continuous cropping of land to corn is that it pays good wages to the small farmer for the greatest number of days' labor. One man without help can prepare the land, plant, tend and harvest more acres of corn than of any other crop. Corn is planted late enough in the spring so that one team will prepare many acres of it.

Improved machinery allows one team and driver to plant and cultivate a considerable area. The stalk is strong and stiff, holding the grain up out of danger long after it is mature, and the harvest season may extend over two or even three months.

Many corn-belt farmers are convinced of the value of a rotation, but see no answer to the above arguments, as small grains require extra labor at certain seasons and leave the men and farm equipment idle at others. A rotation to be adequate to the needs of the corn belt must utilize to best advantage the labor and machinery of the farm. Any crop which utilizes labor at each season increases the value of the rotation in which it may be grown. Winter wheat is such a crop. The land is prepared after haying and harvest. The seed is sown before corn-harvest. The crop is ready to cut just before early

oats. By a judicious selection of varieties of small grain, the harvest may extend over nearly a month without allowing any grain to become overripe. To the farmers who have been accustomed to the one-crop system winter wheat has seemed difficult to fit into a rotation, but there are several schemes by which it may be used, thereby increasing the value of the season's crops. If the corn is standing well, as it does in a majority of our seasons, winter wheat may be drilled in the standing corn with one horse. The photograph at the opening of this article shows a very good drill for this purpose. Some excellent returns have been received from this method of sowing, and contrary to general opinion the weeds do not come up in the vacant spaces in fields where the corn has been well tended.

This practice is followed by farmers who usually carry a four-year rotation of corn, corn, small grain, clover. It gives the farmer an increased cash return for his crop and extends the harvest season so that he can work the binder for a longer period.

A Good Flexible Rotation

A rotation practised successfully in some parts of Iowa and Illinois is:

Corn—Plow in spring. *Corn*—Disk in spring. *Oats, barley or spring wheat (clover)*—Pasture late in fall. *Clover*—Cut one crop and plow at once. Fallow forty to sixty days. Sow wheat in September. *Winter wheat and clover*—Pasture late in fall. *Clover*—Manure and plow in fall for corn.

This rotation is very flexible. If the soil begins to show a lack of nitrogen, one crop of corn is cut out of the rotation, and the second crop of clover is allowed to grow a few inches before plowing for winter wheat. The second crop of clover after the winter wheat may be plowed under as green manure. If the soil becomes too rich in nitrogen, as will be shown by the lodging of the wheat crop, the second crop of clover after wheat is cut for seed or hay, as one may prefer.

This rotation also furnishes nearly a perfect distribution of labor.

When the spring opens up, corn ground is disked and prepared for oats or spring wheat. This operation is followed at once by plowing for corn. The corn is planted and harrowed, corn-plowing utilizes the labor until time to cut clover. By the time the corn is "laid by" and the hay "up," winter



Excellent stand of winter wheat which was sown in standing corn

wheat is ready to cut. This is followed at once by early oats, next barley, if any is sown, then medium oats and then late oats and spring wheat.

The months of August and September are given to preparing the land and sowing wheat, thrashing and filling silo, if there is one on the farm. There is a second crop of clover to cut or to plow under before corn-harvest, and this should be so turned as to last until the early snows.

Professor Burnett's plan of sowing between corn-rows is meant for use in a corn country where the corn is husked in the field. Where cut and shocked or siloed, the plan of drilling with one horse would not be necessary.

EDITOR.

Cultivating the Catalpa

By Chas. A. Scott, State Forester of Kansas

THE hardy catalpa has been more generally recommended for farm wood-lot planting throughout the Western States than any other species of tree. The most important point to be observed in buying catalpa-trees for planting purposes is to be absolutely sure that the trees that you buy are true to name. There are several species of the catalpa known to nurserymen, but the catalpa speciosa, or hardy catalpa, is the only one of these that is of any value for post or pole production, and it is the only species that is worth planting for any purpose other than ornamental use.

Many of the catalpa plantations throughout the eastern part of Nebraska, Kansas and Oklahoma have made good financial returns at from sixteen to eighteen years of age. Others have barely returned the cost of planting and maintenance, and still others have been complete failures. Some of these failures may be accounted for by the fact that the wrong kind of catalpas were planted. But in most instances the failures have been due to an unfavorable climate or soil.

The catalpa is not a tree that is well adapted to withstand severe drought conditions, and its western range of successful growth is approximately the ninety-eighth meridian. Of course, where the trees receive protection from the summer winds, they may be planted even further west than this. But not with much assurance that they will make a financial success.

The catalpa should never be planted on the high, dry prairie-lands of the western part of the States mentioned. The wind whips the leaves to shreds, and the sun scalds the bark.

Grades of Nursery Stock

For general planting one-year-old seedlings should be used. At this age the seedlings are sufficiently strong to thoroughly establish themselves and make a good growth the first season. They can be planted at least expense at this age. The catalpa is readily transplanted, and with proper care a full stand is easily secured.

In obtaining seedlings, the planter should secure the best grade of seedlings available. Practically all of the nurseries grade their seedlings in three lots, and the several grades are known as ones, twos and threes. Grade No. 1 contains the strongest and best trees, ranging from eighteen to thirty inches in height; No. 2's are the medium-sized trees, ranging from twelve to



Yard of 60,000 catalpa posts and 650 ricks of stovewood cut from a twenty-acre wood-lot

eighteen inches in height; while No. 3's are the culls of the whole lot, and do not exceed twelve inches in height. The difference in price of these grades varies from one dollar to three dollars per thousand. This slight difference in the cost of the different grades is not worthy of consideration when the quality of the stock is considered. The No. 1 grade is by far the most desirable and satisfactory. Grade No. 2 is acceptable for extensive planting, but

grade No. 3, which is composed of the nursery culls, should never be accepted. Many failures in catalpa plantations are due, no doubt, to the fact that cull seedlings were planted.

The hardy catalpa may be safely planted on any soil that will produce a good crop of corn. The richer and deeper the soil, the better the trees will grow. They reach their best development in rich, well-drained soils. The catalpa will not make a satisfactory growth in gumbo soils, poorly drained soils or high, dry soils, and sites containing such soils should be avoided. The catalpa is well adapted for planting on lands that are subject to overflow. Occasional floodings do not injure the trees, unless the tops are submerged and injured by driftwood.

The Sandy-Land Delusion

An impression is prevalent that the catalpa requires a sandy soil to attain its best development. This impression is erroneous. The catalpa does make a good growth on sandy loam or on a soil composed of coarse sand on the surface with a loam or clay subsoil. But a sandy soil with coarse sand or gravel subsoil is not at all suitable for it. Occasionally catalpas have been found growing in soils too sandy for the production of agricultural crops. On such land they obtain a height of from eighteen to twenty-four feet, but they seldom cut two lengths of posts, as the ground is not strong enough to develop a sufficient height growth. The returns from catalpas on such soils are probably equal to the returns of any cultivated crops on similar land. Land on which the catalpa is planted should have been under cultivation long enough for all of the grass sod or brush growth, as the case may be, to have been entirely killed. At the time of planting, the ground should be in a good mellow condition, and when given good cultivation the first summer's growth of tree will be from three to six feet.

[CONCLUDED ON PAGE 7]

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Farmer John Bull His Own Middleman

How English Laws Protect Coöperative Societies

By Helen L. Sumner

HOW do we English farmers keep out of the clutches of the middleman and the professional financier? That's no short story. But if you practically buy at WHOLESALE and sell at RETAIL, with only a small charge for the actual cost of transfer, there isn't much room for the middleman, is there? and if you yourself pocket the profits, not only on your own INSURANCE, but on your own BANKING business, there isn't much room for the professional financier, is there?"

"But how in the world can you do all that?" I asked. We had met at a London boarding-house in the late autumn, and, while I shivered over my cup of tea and an entirely inadequate coal fire smoldering in the diminutive English fireplace, I had fallen to quizzing this heavily built, ruddy man, in whose large features intelligence and energy were written in bold lines. He was a farmer from the home of Worcestershire sauce and had come "to town" with his quiet little wife for a holiday.

Legislation for the Farmer of Small Means

"We do it by organizing," he replied; "by coöperation."

Then he told me of agricultural supply associations, dairy and milk societies, egg and poultry societies, societies that run auction markets, general trading associations, credit associations, a coöperative insurance society and a central coöperative bank.

"I belong to nearly half a dozen coöperative societies myself," he said, "counting the one that runs a general dry-goods and grocery business in the village."

"Within recent years, too," he added, "there have sprung up all over England 'small holdings and allotment' societies, as they are called, that lease land and do a dozen other things for their members. They are organized under a special law, and are designed to make it possible for men of small means to get hold of land—not as easy a matter in England as they tell me it is over in your country."

He spoke of the Agricultural Organization Society, with which most of the local societies are affiliated.

In one extremely remote district of his county, he told me with pride, the Agricultural Organization Society had induced the nearest railway company to run a motor service between one of its stations and the depots of a coöperative society which acts as agent for the farmers at its end of the route.

Several days after this talk good fortune brought me a letter of introduction to Mr. N. J. Harris, secretary of the Agricultural Organization Society. So one bright morning I found myself shaking hands with Mr. Harris, who promptly made me feel at home, not only by his cordial manner, but also by his good American accent. Afterward I learned that he was an Irishman, which doubtless accounted for his strange ability to talk American without ever having seen America. But he seemed like an American in other ways, too, for he fairly radiated efficiency and enthusiasm.

Local Societies Are Self-Governed

"Yes," he said in answer to my first inquiry, "the Agricultural Organization Society is the propagandist end of the movement among farmers. We organize societies, help them to their feet, and afterward give them advice and assistance in matters of policy, in keeping their books, in negotiations with government departments, railroad companies, etc."

"But the local societies are entirely self-supporting and self-governed. Our organization, of course, is not engaged in trade and makes no profit. It is supported in part by the subscriptions of the 396 affiliated farmers' coöperative societies, in part by voluntary contributions, and in part by a grant from the Board of Agriculture. There is a similar and older organization in Ireland which has done

splendid work, and now there is one in Scotland, so we cover only England and Wales. Even in that area, which must seem very small to an American, we are forming sections for the purpose of making our work more economical, effective and representative."

"There are now three sections in the districts where the movement is best developed. In districts where there are comparatively few societies, however, the central organization looks after them just as the United States Government has always done with the territories which were not sufficiently developed to form States. Our ultimate aim, indeed, is to have a federation of districts."

"Do you find it easy to organize coöperative societies?" I asked.

Some of the Benefits Derived

"Supply associations, yes. Sale associations are much more difficult. But most of the larger societies have departments or committees for the different kinds of work. We have now affiliated twenty egg and poultry societies and nineteen dairy, bottled-milk and cheese-making societies, but many of the 145 associations for the supply of requirements and the sale of produce have committees for different kinds of work."

He turned to a filing-case and took out a stack of papers.

"Here," he said, "are some reports received from them in answer to a special inquiry as to how they had benefited their members:

"Better prices for butter and cheaper and better quality of feeding stuffs and seeds.

"We have very materially benefited our members by bulking orders and consignments, and thus obtaining the advantages of reduced cost of produce and lower quotations.

"We have goods analyzed for members when required, free of charge.

"Keeping our members in touch with the London market.

"Our members benefit by the expert advice given them by the manager as to the trend of the markets both for buying and selling."

"Many of the members of these societies," he continued, "also belong to agricultural credit societies, based on the principle of mutual liability, through

movement. They are primarily land-renting associations which are able, by collective action, to lease land at low rentals and sublet it out to members who could not get land at all on their individual responsibility. But they do other things, too. Here are some of the replies from small holdings societies as to how coöperation has benefited their members:

"In obtaining land, and in purchasing seed-potatoes in bulk, which allow of their distribution to members at prices for which they could not obtain them as isolated individuals.

"By owning horses, plows, harrows, and hiring them to members at a small charge, and thus making the members independent of outside sources.

"By our system of trading we retail coal, manure and Scotch seed-potatoes in small quantities at the same rate as though the members purchased truck-loads.

"By hiring vans, and thereby getting our fruit on the market sooner and in better condition.

"By rendering help to our members who are sick, paying their rent for them out of a special reserve fund created for that purpose."

"Some of these societies," he added, "simply make it possible for working men to grow their own vegetables, but individual holdings are limited only by a man's ability to cultivate the land, and factory operatives often tide themselves over periods of unemployment by increasing their gardens and raising truck for the market."

Women in the Dairies

"Sometimes," he went on with a smile, "a factory operative, after he has learned how, gets so in love with the soil that he throws up his job and goes to farming for a living."

He asked whether we had anything of the kind in the United States, and I confessed that the Saturday half-holiday is the exception rather than the rule in our country and that long hours of labor and high car-fares combine to defeat efforts in that direction and to make the plan seem impracticable. I told him, however, of our coöperative insurance companies, grain-elevators and dairies, and added a facetious remark about the "dairy maid" who has turned into a "dairy man."

"Not in England!" exclaimed Mr. Harris. "Women still run our dairies, and they are trained for the work. A dairy school with all the students men! Never heard of such a thing!" He asked if our schools operated their own dairies. "I am not in favor of institutional dairies," he said, "on being told that they were generally so managed. Their students may learn to make butter and cheese, but they never learn the true commercial principles of the business. They can't, because such a dairy is not run for profit. I believe every student should have access to a coöperative dairy where he will learn, not only to make butter and cheese, but how to make ends meet."

True Blue Coöperative Societies

"We have been troubled in England, too," he said, "with the misuse of the term coöperative. Sometimes an ordinary, limited liability company in which farmers take shares is called coöperative just because it's a combination. Such a company either fails or tries to monopolize the market to the injury of farmers who are not members. In either case it brings the term coöperation into disrepute. Besides, such a company distributes profits in proportion to shares of capital, which is contrary to the fundamental principle of coöperation. A true coöperative company always distributes profits in proportion to business transacted.

"A true coöperative company, moreover, is no close corporation, and any farmer can join at any time by applying for a share. As a result, there's no trading in shares. Our societies are organized under an especially good law, the 'Industrial and Provident Societies Act.' They are all true-blue coöperatives, designed and run for the benefit of actual farmers and not to manufacture profits for capitalist shareholders. Isn't that true democracy?"



One of the Flourishing Coöperative Farmers' Stores

Cultivating the Catalpa

[CONTINUED FROM PAGE 5]

The proper time to set out catalpas is early in the spring. Any time from the first of April to the fifteenth of May is satisfactory, much depending upon the nature of the season. The trees may be set out as soon as the ground is in good workable condition, but under no consideration should planting be delayed until the buds begin to develop. Fall planting may be done satisfactorily in the Eastern States, but when planted in the fall in the region under discussion the young trees require one more year of protection against rabbits, and they are also subject to injury from the results of a dry winter.

The proper spacing of trees is a point that is difficult to agree upon, but after a careful study of a large number of plantations the writer is of the opinion that six by six feet can generally be recommended as a proper spacing of catalpas on good land. Too wide spacing allows large, heavy limbs to develop near the ground, and the best form for post or pole production is not secured. When intensive methods are practised, the trees may be planted three and one-half by seven feet, and by the time the trees are eight to ten years old they will be crowding each other, and then every other tree should be cut out.

Close spacing and good cultivation cause the trees to develop an erect form, free from heavy limbs, and in every respect desirable.

Clean Cultivation Reduces Danger from Fire

Whatever spacing is decided upon, it should be such as will permit of clean cultivation with the implements used in cultivating the other farm crops. It is a good practice to make the rows wide enough apart so as to grow a row of potatoes or corn between the rows the first year. A sod of grass or a growth of weeds is as injurious to the trees as they are to any farm crop, and the cultivation given should be such as to prevent any undesirable growth, and should continue until the trees are of sufficient size to completely shade the ground. This size will be reached during the third year. After this the trees will require no cultivation, but should be protected from live stock and from fires. If good cultivation is given during the first and second years, there will be practically no danger from injury by fire, as the accumulation of leaves is seldom sufficient to carry on a destructive fire.

The principal damage done by live stock, in addition to browsing upon the trees, results from tramping and packing the soil about the trees. The trees demand a loose soil, and any treatment that packs the soil is detrimental to their best development.

Rabbits are destructive enemies to young catalpas. The bark of the one and two year old trees is particularly palatable to these pests. The common methods of protecting trees from rabbits may be employed in protecting the catalpa. However, one of the most effective protections is clean cultivation, as rabbits seldom frequent places where

thoroughly seasoned before they are set, they are very durable. They are of light weight and clean and easily handled, which are items of much value when the posts are to be shipped. The wood is soft, but holds staples well and is not subject to checking.

Investment Safe, Returns Slow

Before setting out catalpas on a commercial scale the grower should clearly understand that it is a long-time investment. It will be at least ten years before there are any returns from the planting, and at least from fourteen to sixteen years before the entire crop can be cut and marketed. The compound-interest rule must be applied to such investments. Five per cent. compound interest is a reasonable rate to require on such investments, and on this basis \$1 invested will in sixteen years amount to \$2.18. To determine the future worth of the plantation, multiply the cost per acre by \$2.18. The result will give the value of the investment at the end of sixteen years, at five per cent. compound interest. At a reasonable price for planting, catalpas can be grown at a profit, but if the price exceeds \$10 per thousand the profits are doubtful.

Some of the plantations harvested have returned a net profit of from four to nine dollars per acre per year for the total time required to grow the trees, and this after allowing for five per cent. compound interest on the investment.

Every farmer is in need of posts and poles. Whether growing the trees for a commercial purpose is considered or not, it is a safe proposition to plant a sufficient number of catalpas to furnish his farm with posts, poles and firewood.

The New Village Store

By Berton Braley

THE village store has changed a pile
Or so it seems to me,
It's different in stock and style
From what it used to be;
The cracker-barrel's vanished now,
The prunes have gone from sight,
There's nothing left around, I vow,
To tempt your appetite.

There's no place left for us to sit
That used to haunt that store,
Our wisdom and our native wit
Aren't heard there any more;
The place is all so spick and span
And citified and smart
It's simply broken up the clan
And cracked each loafer's heart.

I know it's making money fast
Since it has changed its ways;
It never made much in the past—
But those were good old days!
It was the meeting-place, the hub,
In that glad time of yore.
It was the forum and the club—
And now—it's just a store!



"Harvest"—by Vincent Aderente.

Prosperity

There has been a bumper crop.

This is because the tillers of the soil have been industrious, and the rain and the sun have favored their plantings.

There has been industrial activity.

The makers of things in factories have been busy. They have had work to do and pay for doing it.

There has been commercial success.

The people who buy and sell and fetch and carry have been doing a lot of business and they have been paid for doing it.

The country is prosperous because all the people have been busy.

Good crops and good times can be enjoyed only when the Government maintains peace and harmony.

This task of the Government is made comparatively easy because

the American people have been enabled to become so well acquainted with each other. They know and understand one another. They are like one family.

The producer and consumer, no matter where they live, are close together.

This is largely due to our wonderful facilities for intercommunication. We excel in our railways, our mails and our telegraphs, and, most of all, in our telephones.

The Bell System has fourteen million miles of wire spread over all parts of the country. Each day there are twenty-five million telephone talks all the way from twenty feet to two thousand miles long.

The raiser of crops, the maker of things, and the man of commerce, all are helped to co-operate and work together for peace and prosperity by means of the Universal telephone.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

Free to You

For 2c stamp (for postage) with attached Coupon we will send to any reader of this paper a trial tin (enough for 5 cups) of

Instant Postum

This new food-drink has a winning flavour and is a most satisfying beverage. It comes in powdered form and is prepared instantly with hot water.

The president of one of the biggest pattern houses in America answered an ad. like this and received a sample. He says: "The greatest hit ever made for the health of mankind you made when you gave to the world Instant Postum."

One of the owners of a great American magazine wrote for a sample. He says: "I am delighted with it. The public is indebted to you for putting Instant Postum on the market."

Postum Cereal Co., Ltd., Battle Creek, Mich.
Please send me trial tin of Instant Postum for which I enclose 2c stamp for postage.
Name _____
Address _____
Grocer's name is _____



Write for It



Ten-year-old second-growth catalpas. The trees range from three to eight inches in diameter and are measured by the calipers illustrated

there is no cover to afford them protection. The hardy catalpa is a native of Ohio, Illinois, western Kentucky and Tennessee, southeast Missouri and northeast Arkansas. Its range of successful growth extends throughout the States named, north to approximately central Iowa, and west to central Nebraska, Kansas and Oklahoma, and southward to Texas. It is in the Western States that the catalpa has been planted on a commercial scale. The plantations of this region that have received proper treatment have proven a good financial investment.

The products from such plantations are posts and poles. The market for these is good and will continue good, as the demand for such material is increasing, and the natural supply of suitable timber is diminishing. The catalpa post is one of the most satisfactory posts on the market. When

Velvet

THE SMOOTHEST TOBACCO

First, Burley tobacco—that's smooth.

Next, only the middle leaf—that's smoother.

Perfectly aged—that makes it smooth—that's VELVET, the "smoothest" tobacco.

That's the way it's made. The best of middle leaf Burley—selected by growers who have known the tobacco since old Farmer Burley first grew it—and aged till it is ripe and mellow.

We don't rush Velvet from the field to the tobacconists by any rapid-transit process. You'll find its rich, mellow flavor a treat—its total absence of a bite a novelty—its "Velvetness" a life-long pleasure.

If your dealer hasn't it, he can get it for you from his jobber.

Full 2-ounce Tins, 10c.
One-ounce Bags—convenient for cigarettes—5c.
—or one-pound glass humidor jars.

Liggett & Myers Tobacco Co.

Farm Notes

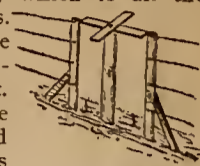
Styles in Stiles

WHAT'S the matter with the stile? The stile—its value and convenience cannot be doubted—appears to be more of a luxury on the modern farm than the high-power automobile. Is it because we have more important things to do than make stiles, or because we've forgotten how to make them?

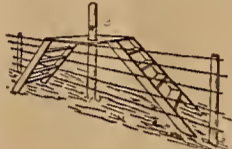
A stile is primarily an elevated right of way over a fence. Our fences are more prickly than in the past, which is all the more reason for stiles. Then we also have the turn-stile, which accomplishes the same result. Their convenience and the time they save commend them, and then there is also the romantic side.



Bridge-stile



Turn-stile



Stair-stile

Saying good-by at the stile is much more likely to ultimately unite two lives than saying the same thing over a barbed wire fence or a patent gate.

D. S. BURCH.

Making Waste Places Productive

THE State of Washington will be asked, at the coming session of the legislature, to devise a plan for aiding settlers in clearing logged-off lands. It is planned to present a bill, formulated by the city commercial clubs, providing for the creation of a logged-off land fund to be used in clearing lands for home-builders and for loaning to those desiring to clear their own lands.

There are approximately 3,000,000 acres of logged-off lands in twenty counties, that might be cleared. The lands were formerly covered with large groves of timber. When that was cut, the refuse caught fire, and the country was generally burned over. At present there are thousands of acres possessing no intrinsic value and assessed at \$3 to \$4 an acre for tax purposes. The ordinary homeseeker cannot clear the lands without the aid of capital or outside assistance.

A preliminary campaign of investigation, conducted by the state and general government, has brought out various methods of clearing the lands, but no scheme has yet been put in motion for furnishing the farmer with money to buy powder, pay for hired help, support his family and educate his children while clearing the lands and getting them in condition for growing successful crops. The cost of clearing ranges from \$35 to \$200 an acre.

The State has been building cities, and the people have congregated about the centers of population until the situation has become appalling. It is estimated that the importations of butter, eggs, meats, lard and other daily necessities, for feeding the people of the State, reach up to \$40,000,000 a year. The cities send away for daily foods, while the country surrounding lies in an idle and wasted condition.

Men and women have gone upon the logged-off lands and tried to carve out farms from the stumps and logs of the primitive wilderness. They have not succeeded, and in many instances, after losing their health and becoming discouraged, the old folks have moved back to the cities or towns to try some other means of making an existence. Under existing circumstances the banks are practically restricted from making loans for farm-development purposes, the regular mortgage companies insist on having close-in improved properties for security, and there is no way for people on logged-off lands to get money to clear lands or build homes.

Western Washington has numerous natural advantages to offer to families after the lands have been cleared. It is only an old wilderness growing up again, under present conditions. Occasionally there are some small farms, where the owners have worked for years in clearing them, and they are almost without exception on the profit side of the ledger account.

JOEL SHOMAKER.

It Sells the Goods

THIS advertising board belongs to a farmer who is making good after having spent sixteen years in the Railway Mail Service of the Government.

The cheapest local advertising that he could procure in a daily paper, with two changes of "ad." a week, would amount to about twenty-five dollars a year. This would mean, too, that he would have to answer many telephone calls and deliver produce to customers scattered over the city.

With the advertising board his customers drive by and take their purchases with them. As to the value of such a board, I shall let him tell the story:

"I have found it a decided success from the start. When I began farming over six years ago, I conceived the utility of it, and it has served its purpose faithfully and promptly.

"I have sold colts, cows, sows, pigs, etc., without any other advertising.

"When I have seed-corn, tomatoes, cabbage, celery or other plants for sale, I list them on the board, and, as a rule, in a few days they are all gone.



Advertise if you would sell

"It saves me much time, for I need not go out to hunt customers. It has seldom failed me in finding purchasers for what I have to sell.

"At first, when I had nothing to sell, I crased everything but the 'for sale' at the top, and several customers came, thinking that 'Ingleside' was for sale. Now I erase everything as soon as the supply is sold or likely to be exhausted.

"I have also had fair success with what I wished to buy, but am reluctant to try it to secure farm-hands or other help for fear of too many undesirable applicants.

"Of course, the usefulness of such a board depends largely upon the prominence of the road on which one lives. But I am sure it pays me in time saved—and time is money on a farm these days."

I will add that "Ingleside" is on one of the main roads and out only about two miles from our small city. The sales of the "truck" amount to nearly four hundred dollars a year.

11. W. WEISBERGER.

STRONGEST FENCE MADE

FROM FACTORY DIRECT TO FARM

26-inch Hog Fence,13 1/2c.
49-inch Farm Fence,22c.
48-inch Poultry Fence,22c.
80-rod spool Barb Wire, \$1.40

Many styles and heights. Our large Free Catalog contains fence information you should have.

COILED SPRING FENCE CO. Box 18 Winchester, Ind.

Heavy Close 49 in. Fence 24c Per Rod

Steel Farm Gates \$2.95 and up. Galvanized Barb Wire, \$1.45 per spool. Our large catalogue of fences for every purpose, gates, fence tools and supplies with low direct from factory prices sent free to any address.

THE MASON FENCE CO. Box 88 Leesburg, Ohio

Oregon

the haven of the Homeseeker

Physically the state is attractive, geographically its location is excellent, climatically it leaves nothing to be desired.

The Willamette Valley in Western Oregon, 150 miles long, contains about 5,000,000 acres of very fertile land. It is well watered, thickly settled, embraces many fine farms, has much water power, and is the oldest settled part of the state.

The Hood River Section along the Columbia River, has made itself famous with prize winning fruits.

In Southern Oregon along the foothills and slopes of the Umpqua and Rogue Rivers are some of the most prolific fruit lands in the west. The valley lands are valuable for grazing, poultry raising, and dairying. This region produces bountifully of Spitzenburg and Newtown Pippin apples, and pears are a close second. There are large timber areas on the mountains, and extensive mineral deposits, including coal. There is much good water power and the climate is ideal.

Eastern and Central Oregon embrace millions of acres undeveloped and now inviting settlement. Here, general farming is largely practiced, grains, grasses, vegetables and fruit all doing well, stock raising being an important industry. The mountains abound in fine timber and magnificent water power. Numerous irrigation projects are in operation and a great change is under way in this section, owing to the construction of the Oregon Trunk Ry.

Oregon is said to have the best school laws of any state in the Union. Her State University, Agricultural College, Normal and public schools, and several denominational colleges, etc., provide educational facilities of the highest type. Write for free booklet about Oregon and details of low round trip homeseekers fares. Address

L. J. BRICKER, Gen'l Immigration Agent or A. M. CLELAND, Gen'l Pass'r Agent Northern Pacific Ry., ST. PAUL, MINN.



The Northern Pacific Railway and its numerous affiliated lines have 429 miles of railway in Oregon. Much of this is comprised in the new Oregon Trunk Railway through the Deschutes River Valley from Fallbridge, on the Columbia River, into Central Oregon—that great virgin field for the Homeseeker. The remainder is in the valleys of the Columbia and Willamette rivers, comprised in the lines of the Spokane, Portland & Seattle Ry., the United Railways and the Oregon Electric Railway.

Oregon may aptly be termed the land of PRESENT OPPORTUNITIES. Central Oregon has millions of acres of homestead lands awaiting the homeseeker, while Western Oregon, more closely settled, has abundant opportunities on every hand for dairymen, poultry raisers, fruit growers and farmers.

Send for free copy of "Central Oregon" and "Oregon for the Homeseeker" books, fully descriptive and containing names of Secretaries of Commercial Clubs, who will gladly help you in any way to get located.

Important Notice to Homesteaders

Recent revision of homestead law reduces period of required residence from five to three years and allows five months' absence each year. Write quick for list of homestead lands adjacent to Northern Pacific, and full particulars.

Northern Pacific Railway

Farm Notes

The Valuable Hawk

I KILL, and advocate killing, every hawk, owl, eagle and all such destructive birds, animals, fish and reptiles I can, especially the hawk and owl. There is nothing more destructive to our valuable fowls, rabbits, squirrels and birds. Of course, they catch some mice and other rodents, but if they find a prize chicken, young turkey, guinea or pigeon, either wild or tame, they do not wait and consider the value, but take it along, too.

And they are so noiseless and swift that there are very few birds but are at their mercy. Why pass laws to protect our small birds and advocate sparing their worst enemies?

I say kill every one you can. Show the women how to use the shot-gun so when they get a chance they also can kill them.

FRANK BRUCE.

* * *

If Mr. Frank Bruce were to write his political views in the same strain as the above letter, the editors of any of the old party papers would consign it to the wastebasket as "too anarchistic." Such letters should never be published unless accompanied by an explanation for the affirmative, as in this case.

Too many people have preconceived notions about these birds, and no amount of writing will, or can, change their views; they will never admit anything but that the hawks and owls are their enemies.

Hawk Losses are Often Exaggerated

During my boyhood days, in central Wisconsin, my summer vacations were passed on Grandfather's farm; and while the hawks were numerous, one or more being seen daily, I never saw them take a chicken. Gophers and field-mice, no doubt, supplied their fare.

A friend of mine, a breeder of prize-winning poultry, whose "few acres" with its chicken-pens border a piece of woodland, says that to his knowledge he never had more than three or four little chickens taken by hawks, and these in one day by perhaps but one hawk. This is his "hawk loss" in five years' time.

There are a few things that I wish to emphasize. FARM AND FIRESIDE last year stated the situation: "With the exception of perhaps five or six hawks (throughout the Union) which live mainly upon birds, and the great horned owl, these birds are to be classed as beneficial to the agriculturist. It is true that the larger species carry off a chicken now and then. Sometimes an individual will learn the way to a poultry-yard, and, unless killed, will return again and again. Against such as these action must be taken, but this need not prejudice one against the whole tribe."

This, then, is to be the rule: Never shoot them until they begin carrying off the chickens.

Since beginning my bird-studying career, I have often wished for a repetition of a "hawk" experience of the summer of 1891, in order to prove a theory that I have formed regarding the visits of a pair (?) of hawks to a chicken-pen. I spent part of the summer with a relative, a breeder of fancy poultry, in a down-county crossroads hamlet. The barn and chicken-pens were but a few rods from a hill, on top of which terminated the woodland of the neighborhood.

One day, on hearing a commotion in the chicken-yard, my cousin looked up and saw a large hawk coming down out of the sky, whereupon he stepped into the house, and, reappearing with the gun, he shot Sir Hawk before he had secured the coveted (?) chicken. Some days later, while the folks were away, I observed a large hawk glide into the chicken-pen that lay behind the barn. Imagine my excitement! Instantly I had contracted a severe case of "buck fever"; but I managed to get the gun, sneak along behind the fence, open a gate, and with cocked gun to my shoulder I stepped to the corner of the barn and, pecking around it, saw the "hawk" perched on a fence-post. Each of us saw the other at the same moment. It flew, and I fired. The old Parker let out a cannon's roar that sent the chickens scurrying into the coop, and when the smoke had cleared away I saw the hawk lying dead.

Chickens or Mice?

I have shot neither bird nor animal since. But the point I wish to make in telling the story is this: chicken-pens are overrun with rats and mice. Now, it may be possible that it was only the mice these hawks were after. With the aid of their telescopic eyes they could see the rodents from quite a distance, but upon nearing the pens the frightened chickens probably warned the mice, who ran to cover, while the disappointed hawk waited for them to reappear. Who can tell? We may be mistaken regarding the visits of hawks to poultry-yards. Anyhow, I'd be willing to risk half a dozen chickens to have another such chance in

order to note whether or not a hawk really could visit a chicken-yard without carrying off the fowls.

I recently read of a gentlemen from New York City who stated that on his farm he has had a pair of barred owls for many years. He further says that one morning he found one of them in his pheasant-pen, and that he shot it with a camera instead of a gun. I was pleased to read that he, too, had formed the wise conclusion that the owl had chased a mouse.

I interviewed an old friend, a man past fourscore years of age, who has "farmed" it for more than sixty years in this country, and over forty of that time on his present place. He is a man who has always been a keen observer of nature and has always known the birds. I am acquainted with two brothers and a sister of the family, and they have inherited their mother's fondness and knowledge of birds. Although they lived in English cities, as James informed me, their mother had relatives in Ireland that lived in the country, and it was here, during the summer vacations, that James, the oldest of the trio, gained his knowledge of birds and was taught to observe nature. He informed me that he never suffered any great loss among his chickens due to hawks, owls or crows, and that he had never killed these birds, although he had lived on the farm when they were more plentiful and when the country had a greater timber area



Red-shouldered hen-hawk

and was less thickly populated. He says that these birds do more good than harm, and he does not believe in interfering with Nature's plans.

The hawks and owls have been called "the policemen of the air." For, aside from being the natural enemies of the harmful rodents and insects, they put out of misery the sick and injured, and devour the aged and weak birds, thus leaving only the survival of the fittest to propagate the species.

Depredations by Squirrels

If we should all do as Mr. Bruce says; "kill every hawk, owl, eagle and all such destructive birds, animals, fish and reptiles," I fear that there wouldn't be much left but "man, the destroyer"; and then the insects would devour his food and he would soon perish.

No, we should not kill these birds. We have insects that are entirely beneficial, others that are neutral, and then the great army that are wholly destructive; yet the small insectivorous birds that he wishes protected from "their worst enemies" are likewise enemies to that which is good. He says that the "squirrels are valuable," and they are very destructive to the birds that he wishes to protect; especially is this true of little "reddie." His name is vermin, for his kind destroy more of our useful birds by robbing their nest of eggs or young than are killed by all of the hawks and owls combined. Not only this, but he is detrimental to the other, larger squirrels by preventing, in a large measure, the increase of those less destructive species. I would scarcely know where he could draw the line; and would he think himself above the Creator that placed them here? Also, would our complainant expect them to take on some of his wisdom in order that they might be able to distinguish between that which is "wild or tame," in nature? It is all one to them; they pick their food where they find it. And, further, does he not know that the small birds' worst enemies are man's agencies? Would he kill man that the small birds might live? Man's lighthouses kill vast numbers of the small birds every year; telegraph, telephone and light wires maim a multitude of them annually.

I might fill page after page with quotations, but I close with this one:

"With the exception of the destructive cooper hawk, sharp-shinned hawk and great horned owl—species which all farmers and sportsmen should learn to distinguish—we may safely say that the rapacious birds are among the most, if not the most, valuable birds that wage war against the foes of the agriculturist." H. W. WEISGERBER.



One hundred and nine miles at a total cost of eighty-one cents—that is a recent—but not exceptional—accomplishment of the Ford. It's the Ford's wonderful economy—in first and after costs—that makes it "the farmer's car."

Every third car a Ford—and every Ford user a Ford "booster." New prices—run about \$525—touring car \$600—delivery car \$625—town car \$800—with all equipment, f.o.b. Detroit. Get catalogue 332B and particulars direct from Ford Motor Company, Detroit, Michigan.

A cheap rubber boot is like a cheap wagon—Defects soon come out in service.

The long wear and the fine fit "Ball-Band" rubbers give, prove that they have the quality built into them.



BALL BAND



Why take chances? The Red Ball on the knee of a boot means certain satisfaction. "Ball-Band" Rubber Footwear is worn by 8,000,000 people who get full value for their money, and sold by 45,000 dealers. If you can't locate the "Ball-Band" dealer near you, write us, and we'll tell you who he is.

Mishawaka Woolen Mfg. Co. MISHAWAKA, IND.

"The House That Pays Millions for Quality"



\$21.60

The Marlin Repeating Shotgun 12 or 16 GAUGE

Made famous by its dependability. The solid top and side ejection keep gases and powder away from your eyes; help quick, effective repeat shots. Rain, sleet, snow and foreign matter can't get into the action. The mechanism is strong, simple, wear-resisting. The double extractors pull any shell instantly; two special safety devices prevent accidental discharge while action is unlocked, and an automatic recoil block makes hang fires harmless. All Marlins are strongly made, finely balanced, accurate, hard hitting guns, and are the quickest and easiest to take down and clean. Illustration shows Model 24 grade "A" 12 gauge; it has all the features that make for a perfect gun. Send three stamps postage today for our 136 page catalog describing the full Marlin line.

The Marlin Firearms Co. 141 Willow Street, New Haven, Conn.

Save Work, Time, Money

By using our low down steel wheel wagon

Electric Handy Wagons

saves high lifting, lighten draft, don't rut roads. Spokes don't loosen—wheels don't dry out or rot. Write for free book on Wagons and Wheels. Electric Wheel Co., 13 Elm Street, Quincy, Ill.

ALL BIG WIRES

That's the only kind of fence it pays to buy. Get our new book, convincing proof of quality and sensational new low prices. **EMPIRE FENCE** is sold direct from factory, freight prepaid—23 styles to choose from—for all purposes. Write us a postal note for offer. New Book Free Bond Steel Post Co., 42 E. Maumee St. Adrian, Mich.

Biggest Stumps Pulled For 4c Each—In 5 Minutes!

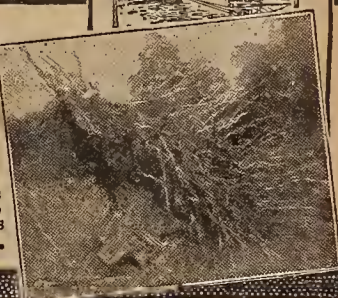
E. C. Culbreath, Johnston, S. C., does it. Thousands of others doing it. Why not you? Pull an acre of stumps a day. Double the land value—grow big crops on virgin soil! Get a

HERCULES

—the only all steel, triple power stump puller made. More power than a locomotive. 60% lighter, 40% stronger than cast iron puller. 30 days' free trial, 3 year guarantee to replace, free, castings that break from any cause. Double safety ratchets. Free book shows photos and letters from owners. Special price will interest you. Write now. Address Hercules Mfg. Co., 178 21st St. Centerville, Iowa



Free Book





BIRD
NEPONSET
PRODUCTS

Good Roofing Pays

If you were to sell your farm you couldn't get as much for it if your buildings were run down and had leaky roofs. The farmers who keep things up in good shape are buying

**NEPONSET
PAROID ROOFING**

The Real Rival of Best Shingles

because it is an investment. Gives you adequate fire protection. Cuts out repair bills and lasts longer than shingles, metal and other old-time roofing materials. At Geneseo, N. Y., the Erie Railroad Station has been covered with NEPONSET Paroid twelve years—painted once. The freight station has been covered with NEPONSET Paroid for eleven years. This is actual proof of long wear. Equally long records have been made on barns like your own. NEPONSET Paroid is the roofing you know will last. Be sure to buy it next time.

Send for Our FREE Book on Roofing
and the name of the NEPONSET dealer near you.

F. W. BIRD & SON (Established 1795)
188 Neponset Street, East Walpole, Mass.
New York Chicago Washington Portland, Ore. San Francisco
Canadian Plant: Hamilton, Ont.

NEPONSET
Prostate Roofing
makes a handsome red or
green roof for houses.

Live Stock and Dairy

Home Treatment of Wounds

IN ALL severe wounds evidently requiring skilled surgical treatment the qualified veterinarian should be at once employed. Many simple wounds can well be attended to by the owner, if professional help is difficult or expensive to procure. If possible, avoid stitching (suturing) wounds. Unless suturing is done with a sterilized needle and suture silk by one who knows how, it may do more harm than good. Each time the needle is thrust through skin or flesh new wounds are made, and these are likely to become infected. If pus forms in the wounds, the stitches quickly become loose, or the animal may rub them loose or tear them out, making large, unsightly rents and scars. The suturing material, unless soaked in germ-killer, such as a two-per-cent. solution of coal-tar disinfectant, or lysol, or 1/1000 solution of bichlorid of mercury (corrosive sublimate), also will be sure to infect the wound, induce pus and render healing tardy and imperfect. Wounds that cannot be rested should not be sutured. This is true of wounds at the front of the hock, back of the knee and in the skin and flesh of any part which moves much when the horse walks or gets up and down in his stall.

First-Aid Treatment

On general principle the first-aid treatment of a wound consists in clipping away the hair, washing away blood and all foreign bodies, such as dust, earth, cinders, sand, gravel or hair. When this has been done, the simple wound should be thoroughly swabbed with a 1/1000 solution of corrosive sublimate and then well wetted several times a day with "white lotion" composed of one ounce of sugar of lead and six drams of sulphate of zinc in a pint of water. Label the bottle "poison," and shake thoroughly before use. This lotion will be found effective for the treatment of all shallow wounds and also for application to sores on the shoulders, neck or back of the horse. Deeper wounds may be cleansed in the same way and then dusted freely with a mixture of one dram of iodoform and three parts each of starch-powder, or powdered alum and boric acid.

Remedy for "Proud Flesh"

Then a layer of clean absorbent cotton should be spread upon the treated wound and held in place by a clean, unbleached-muslin bandage. The dressing should be changed once or twice a day, according to the severity of the case. Clean cotton and bandages must be used each time. Where deep barbed-wire wounds heal slowly and "proud flesh" (exuberant granulations) tends to form, the following will be found more suitable than simple white lotion: Sulphate

of zinc, two ounces; chlorid of zinc, half ounce; hydrochloric acid, one dram; water, one pint. Shake and apply twice daily. This is a very strong poisonous lotion and must be carefully and judiciously used. As a simple, cheap dusting-powder for sores and wounds on the horse that still is able to work, we recommend a mixture of equal parts of powdered wood charcoal, flowers of sulphur and slaked lime. To keep flies off a wound, add one dram of iodoform per ounce of dressing-powder. Peroxide of hydrogen is useful as an application for all classes of wounds. DR. A. S. ALEXANDER.

Why Use Butter-Color?

THE Pure-Food Law has been in force for a little over six years, but is still not thoroughly understood, though in a general way we know what it has accomplished. Its bearing on butter-color is a matter of interest to dairymen.

In the first place, butter-color is not prohibited as long as it is free from injurious substances or ingredients. Ordinary butter-color is purely vegetable, tasteless and odorless. It comes in bottles or cans with a full description on the label.

Every butter-maker knows that the natural color of butter ranges from white or very pale yellow in the winter to a pronounced deep yellow in June and July. The breed of cows and the kind of feed also affect the shade of color. The public at large has come to like a yellow butter, and the purpose of butter-color is to supply the yellow color when it is not there naturally.

Most creamery butter is artificially colored to meet the demands of the market. Makers of dairy butter will do well to observe this point in order to meet competition and offer for sale the kind of butter that the public wants to buy. D. S. BURCH.

Our mistakes are assets if we know how to bank them properly.

How She Did It

The Story of the Feeding of Banostine Belle De Kol, the Ohio Record Cow

THE recipe for rabbit pie began, if I recall correctly, "First catch your hare." Dan Dimmick believes the same thing applies to cows, but he also admitted that no cow could do her best unless she had every opportunity to develop all her latent powers of production under ideal conditions.

The Dimmick Farm is located about four miles southeast of Chardon, Ohio, the terminus of the Cleveland and Chardon electric line, and not at East Clarendon, which is their mailing point, a condition frequently met with in our rural delivery.

This farm has been in the family for three generations, and is getting better every year, the hundred or more cattle and the score of mules and horses all contributing to the increased fertility and the general air of prosperity which is evident on every hand. At the time of my visit old buildings were being remodeled and new ones

MINERAL HEAVE REMEDY

In use over 50 years

CURES HEAVES

NEGLIGENCE Will Ruin Your Horse

Send today for only PERMANENT CURE

Safe—Certain

\$3 Package will cure any case or money refunded

\$1 Package cures ordinary cases. Postpaid on receipt of price. Agents Wanted Write for descriptive booklet

Mineral Heave Remedy Co., 425 Fourth Ave., Pittsburg, Pa.

FACTS!

—plain facts about the worth of a farm engine are what you want to know before you do any buying. That's what I give you in my big engine book. My big book tells you all you ought to know about farm engines, what you should pay for one, how to tell real quality. Also tells how I sell my

1913 Galloway Engines at \$50 to \$300

Saving In Price besides giving you 5-year guarantee, 90-day free trial—and lowest price quoted on efficient, durable engine—any size. Get book and 1913 offer now.

Wm. Galloway, Pres. Wm. GALLOWAY CO., 745 BY Galloway Sta., Waterloo, Ia.

A GOOD LINIMENT FOR 20c A QUART

Can be made as follows: Take a quart bottle, put in 1 ounce ABSORBINE, 1/2 pint vinegar, teaspoonful salt petre, fill up with water. This makes a good, general liniment for strains, wrenches, pulls, swellings; healing cuts, bruises, sores; to strengthen the muscles and toughen shoulders on work horses. Also as a leg wash or brace, in fact whenever a liniment would be generally useful.

ABSORBINE \$2.00 a bottle at dealers or delivered. (One bottle ABSORBINE makes three gallons liniment as above formula.) Book 3 H free. W. F. YOUNG P. D. F., 23 Temple St., Springfield, Mass.

15 95 and Upward AMERICAN SEPARATOR

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THE QUAKER OATS CO.,

Gentlemen:—I was feeding 1 bushel Gluten, 1 bushel Bran and 1 bushel of Cornmeal, mixed (equal parts bulk), when I was advised to feed 1 bushel Gluten and 2 bushels of Schumacher Stock Feed. I was milking 18 cows; in 3 days my cows gained 62 lbs. of milk. They continued to do fine. I used up my supply of Schumacher and went after more but the dealer was out. I bought bran and meal and went back to my former ration. In two days my cows dropped down 50 lbs. in milk. I bought more Schumacher as soon as I could, and am getting very fine results again. C.B. AMES, Delavan, N.Y.

THE QUAKER OATS CO.,

Gentlemen:—During the past few months I have been feeding my dairy a ration composed of equal parts of Gluten Feed and Distillers Grains. About two weeks ago I left out the Distillers Grains and began using Schumacher Feed in its place and feeding just the same amount. In 2 days my dairy has gained 30 lbs. of milk per day. 13 of these cows have been milked since last March and April. The most important point in this test is the fact that, while Schumacher's cost me \$6.00 per ton less than the Distillers Grain, my cows actually gained in milk production. J. E. MURRAY, Freedom, N.Y.

A Wonderful Milk-Making Ration

Nowhere in the world can you get a better combination than three parts Schumacher Feed and one part high protein concentrate. It is simply marvelous how cows relish its appetizing qualities and how it increases the flow. It also affords that much needed variety of grain products which you know are so essential. Cows eat it eagerly—like it—thrive better on it—give more milk—keep in better condition. Composed of finely ground corn, oats, wheat and barley products, perfectly blended, kiln-dried and scientifically balanced—there's nothing like it for milk production when used as above. Nothing that can touch it, price considered. You certainly ought to try it. Even above it is a wonderful feed, and at the prices today, you can't afford to feed any other. At your dealer's; if he can't supply you write us.

THE QUAKER OATS COMPANY
CHICAGO, U. S. A.

constructed. Mr. Dimmick was moving from the former home into a newer building, freshly remodeled after the bungalow style, and everything was "torn up" incidental to these changes, so that photographs of the farmhouses were thought impractical. However, the barns were more forward with their construction and, though not completed, have been in use for some time. The original barn was a bank barn with three siloes attached, square wooden ones, then leading directly away from the cow-shed is a litter-carrier, and along the line of this and supplied with track and convenient switches are, in order, the ice-house and creamery, the herd-barn, the calf-barn, the test barn and the elevator.

The barns and outbuildings are painted red, and the carrier-system posts are all



Cows under "test"

These cows have just been milked and are turned out in the barn-lot for exercise and sunshine

painted white, which makes a pleasing contrast and adds to the looks of the place. The floors of the barns are all cement, the newer buildings are heated by standard hot-water systems, and they have the King system of ventilation. The test barn is supplied with window-shades, screens to keep out flies, and I noticed a number of fly-traps about the floor. All barns are supplied with automatic watering devices from an outside supply.

The litter used is baled shavings, and all droppings are gathered as made and conveyed to manure-sheds at one end of the buildings, from whence it goes direct to the fields.

Within the herd-barn, where the cows are handled very much as the herd of any other milk-producer, the milk sheets, under the signatures of Bill, Tony and Bill Bughouse, show just about the same milk yields as I have seen on the sheets in other barns, ranging from 8 to 19.2 pounds of milk per cow; and it seems to be the system here to build up the general health of the cows, then when one shows rather better than the average to put her in the test barn and feed her for all she is worth.

In the test barn the stanchions are divided by partitions into sections of two, and each cow under test is given one of these sections, free from restraint, liberally bedded and induced to do her very best for the time devoted to the test.

Each day the cows are turned out for a time in the sunshine when the weather permits, to the improvement of their health, and it was a matter of comment that the cows "in test" looked rather better than an average cow in health and vigor.

The cows in test are fed and milked four times per day, at ten and at four.

The feeding and milking was being done at the time of my visit by Tony, a Lithuanian from the southern part of Russia, an excellent workman who had the welfare of his charges at heart.

The foundation cow of the herd was Euphrasia A, an imported cow of whom no production record obtains, and the herd bulls at present in stud are Friend Hengerfeld De Kol Butter Boy and a son, Pontiac, both bulls of great scale and splendid conformation. The animals of the herd all run large, some of the cows running to exceed 1,600 pounds, Banostine Belle drawing right at this figure and High Lawn at 1,650. There is a splendid bunch of young stuff coming on, twos, yearlings and season calves, whose weight would be questioned were I to give it, all in splendid condition, all showing excellent care and plenty of feed.

The basis of all the feeding on this farm is alfalfa. Alfalfa-hay from the bale, alfalfa-hay cut and mixed with stock molasses; in some form it goes into almost, if not



The first silo

All siloes on this farm are of the square type, all of wood construction. Old barn to left and rear of silo. Herd-barn to right of silo

quite, every meal from calf to cow, helping to build those wonderful frames and the constitutional vigor so prominent.

In the calf-barn racks hold an abundant supply to which the calves have constant access, and at one end of the barn is a trough wherein the feeder dumps ground feed of various sorts by the bagful for the calves to help themselves. They also have free access to a salt-box, which is kept supplied with stock-salt.

Ensilage is fed by the ton, from three large wooden siloes, filled in season with corn grown on the place. A start is being made toward the growth of alfalfa, which will probably be successful.

I was informed that the grain ration consisted of ground oats and bran, but a sample which I examined carefully seemed to contain a small amount of cottonseed-meal in addition; this is fed to the cows under test up to their capacities, as is the beet-pulp, which is moistened from one feeding period to the next. The cut alfalfa-hay is placed in a large tub, and a molasses solution is poured over it—one part molasses, four parts water—which also soaks from one period to the next. No limit is placed on the cow's consumption of alfalfa-hay. They are supplied with all they can eat. If any is rejected, it is removed and fed to young stuff or the herd cows. About an ounce of salt is placed in each ration of beet-pulp at the extreme, and as little as a quarter ounce to others, depending on the cow. Some green cut common red clover was being fed, apparently with relish, as lending variety to the diet.

Tony was weighing three pounds of grain into a ration which at four feedings per day would make a day's grain run to twelve pounds.

On such a ration one would expect much milk. I scanned the milk sheet tacked up in the barn, and by adding the four milkings of the highest cow in the test of eight, found that she had produced 52.2 pounds of milk in twenty-four hours. This was her highest yield in four days under test.

The secret of the work lies in having the cow able to handle the feed, a great big machine. Then feed her right up to her capacity. Cows cannot make milk out of



A "test" cow

This cow has just been milked, and is watching the door to start on her next meal. They are fed four times each day, almost a continuous performance

scrub, pennyroyal and June-grass, commonly called dog-hair; if you want milk, you must feed for it. Of course, some cows simply will not respond no matter how much feed you roll into them, but having the right kind of a cow, then feed that cow.

There is one thing which will strike the student of breeding with peculiar significance, that is the large proportion of female progeny from these individuals kept under favorable conditions. Banostine Belle has given birth to three calves, and all have been heifer calves; Daisy Grace has given birth to three calves, and all have been heifers, and High Lawn Hartog De Kol has been the dam of four fine heifer calves.

Other cows in the same neighborhood, tracing their parentage back to the same common stock, are doing exceedingly well in dairy herds under ordinary conditions, two of the cows of H. S. Wooden have exceeded the sixty-pound-per-day record unofficial, and others of the same breed are doing nearly as well, but the proportion of heifer calves is not as large, seeming to show a decided advantage toward the higher feeder.

Whether high feeding pays or not is not for the writer to say, but the fact that all of the cows of the herd are not kept under test conditions all of the time might be adduced as an evidence that it does not; though from the standpoint of the breeder with stock for sale it may be very profitable.

We confidently predict that, with a more general spread of the knowledge of feeding for milk production, more high records will be established. E. M. RODEBAUGH.

The Vigorous Horse

"MY MARE is very difficult to control," writes a New York lady. "I have a great deal of trouble with her, and can find no one who is able to handle her."

It does not seem to me that you need yet to be discouraged about your mare, even if you cannot find anyone to handle her. The device called the "controller" is one that you yourself can use with no personal danger, and it may very likely prove all that is needed.

The whirling treatment should never be attempted by a woman, nor even by a man unless he knows what he is about. Be sure and have your mare in a strong harness and a strong wagon. DAVID BUFFUM.

Bloat of Cattle

BLOATING of the paunch, or rumen, of the cow would be less common, if owners would remember to make no sudden changes of feed and to refrain from turning animals on clover or alfalfa pasture when wet with dew or rain. There is also less tendency to bloat when cattle are fed on dry hay before allowing them to graze rank green growths, and if they are allowed free access to rock salt and an abundance of pure, fresh water. Bloating is due to fermentation of feed which becomes yeasty in condition and gives off gas in large quantities. The paunch, when greatly distended with feed and gas, becomes paralyzed, losing its natural muscular motion (peristalsis). Chewing of the cud (rumination) ceases, and the bowels do not move normally. The animal may scour at first and then become constive, or from the start of the worst cases no action of the bowels takes place. The bloating is noticed high up on the left flank. In the horse the right side is distended when gas fills the colon. To prevent bloating on alfalfa or clover, it is well to let the pastured cattle lick a mixture of equal parts of salt and slaked lime at will and to graze but a short time when becoming accustomed to such feed.

Treatments and Remedies

Cut green clover or alfalfa should not be fed wet, but should be allowed to wilt before use. It is best to cut supplies one day ahead. All damaged, heated, fermenting or moldy feed should be withheld from cattle. If bloating is noticed, simple measures of relief should first be tried. Place a piece of fork-handle or broom-stick bitwise in the cow's mouth, and keep it in place by cords fastened to the horns or halter. This "gag" will prevent suffocation. Another good plan is to elevate the forequarters of the cow by building up the stall floor. Cold water dashed upon the abdomen is helpful, and rectal injections of soapy warm water and glycerine should be given once an hour. Many simple remedies have been suggested for bloat. An excellent one is an ounce or two of turpentine shaken up in a pint of raw linseed-oil or new milk. A still better mixture is composed of one or two ounces of aromatic spirits of ammonia, a dram each of fluid extract of nux vomica and ginger-root, and four ounces of granular hyposulphite of soda in a pint or so of water. If no such remedies are at hand, half a pint of whisky and two teaspoonfuls of essence of Jamaica ginger may be administered in a pint of strong coffee. Soda bicarbonate (baking-soda) is commonly given, and sometimes is mixed with sour milk. Such a mixture is apt to prove detrimental, as soda tends to effervesce on meeting the acids of the stomach, and so may aggravate bloating.

In extreme cases the gas should be withdrawn by passing a long, smooth, oiled rubber hose down the gullet, or "tapping" the distended paunch at the most prominent place, on the left side, in the triangle between the point of the hip, last rib and spinal column. This is done by means of a trocar and cannula, made for the purpose, and to be thrust inward, downward and forward. Its timely use will prevent suffocation. Remember that chronic bloating often is due to tuberculosis, so that in such cases the tuberculin test should be applied. DR. A. S. ALEXANDER.

What About Our Institutional Dairies?

THE Worcestershire farmer who gives us on Page 6 some valuable suggestions for sending the middleman to the poorhouse makes some caustic comments on our institutional dairies. And he's right—so far as his remarks apply.

He's just as much right as Prof. W. A. Henry of Feeds and Feeding fame was when he discouraged some budding agricultural students from taking a trip down the Mississippi in a boat for the alleged purpose of studying the farming methods along the shores of the river. "You can't learn farming from a boat," was Professor Henry's ultimatum. And similarly, "You can't learn commercial butter and cheese making in a school," says the Worcestershire farmer.

But now how about dairy schools? We have always believed they were a pretty good sort.

In Wisconsin the dairy-school graduate is familiar with the science of dairying and has had some pretty rigid practice in actual work, but his diploma is withheld until he has successfully operated a creamery or a cheese-factory for a year and has had his factory and his business methods inspected and approved.

Other schools, while not so strict, keep an eye on their graduates.

So the Worcestershire farmer isn't altogether right. We know that this country needs better butter-makers and cheese-makers and ice-cream makers, and we also believe that our institutional dairies are helping to give them to us. We like the Wisconsin method of weaning them only after they've had at least a year's practical experience. In brief, they should not only be dry behind the ears, but be able to stand alone in the world of business and commerce.

Registered Jerseys on President E. P. Ripley's ranch. Sharples Tubular used exclusively.



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Keen dairymen and business men are not willing to miss extra profits.

We could fill books with the names of such men who have chosen Sharples Dairy Tubular Cream Separators in preference to all others. Why? Because dairy Tubulars contain no disks to chop, taint or give cream a metallic taste; and because Tubulars have twice the skimming force of others, skim faster, skim twice as clean, and thus pay sure and easy money that is simply extra profit over what any other separator can pay.

Mr. E. P. Ripley, keen, sagacious, well known president of the great Atchison, Topeka & Santa Fe Railroad, is but one of many such. The Tubular is used exclusively to skim the milk from registered Jerseys on Mr. Ripley's ranch at Santa Barbara, California.

Ask us for a free trial. Ask those who are discarding others for Tubulars. Trade your present separator in part payment for a Tubular. But right away—today—send for our free catalog No. 112

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Poultry-Raising

Duck Eggs in Winter

IT IS easier to get eggs from a flock of Indian Runner ducks when the weather is cold (and prices are high) than from hens. They respond to good care more quickly than other fowls, and they will lay as many eggs during the cold winter months as the Pekin will lay during their entire laying season.

We have raised several different kinds of ducks, including the Imperial Pekin, but find that the Indian Runner is, by far, the most profitable.

Before going farther, we wish to say that the writer of this article has neither eggs nor stock for sale.

Ducks should not be allowed to wander around through the snow in freezing weather. During a thaw, when the air is mild, they enjoy being out in the open. They should have a house to themselves. Even two varieties of ducks will not do well together. If the house needs repairing, see that it is put in proper shape before cold weather sets in. An open shed will not do. Be sure that the floor, roof and siding are in good condition. Ducks cannot endure dampness or cold drafts. Good floors are necessary, because ducks sleep on the floor (or ground), and plenty of straw or clean litter should be used for bedding. They make their nests on the floor, also. An abundance of bedding, if changed frequently, will help to keep the floors clean and also the eggs. Never let the straw stay on the floor until it is badly soiled. Where a large flock is kept, the straw should be renewed every day. It is best to have the house divided into a number of separate apartments. We find that they do better when divided into small flocks.

Feeding-Rack for Ducks

No matter whether ducks are being kept for winter eggs or for general purposes, they should have good care, especially in winter. These rules will answer as well for one variety of ducks as another, but the results will depend upon the variety kept. Ducks that have not been properly fed and cared for during the winter will, as a rule, lay fewer eggs during the hatching season than those that have.

A feed trough or rack should be used. If space is limited, it should be placed outside the house, but in winter this is very inconvenient. The bottom of the trough is flat, being simply a board with narrow pieces for edges, with slats attached, the same as for a sheep-rack. The slats are placed about four inches apart. The trough (rack and all) is placed upon blocks about four inches high. The rack is twenty inches high, thus bringing the top about two feet from the floor. The ducks never try to fly over the top while the feed is being distributed in the trough. Needless to say, the feed should be evenly distributed, so that the ducks can eat from either side of the trough.

Such a trough or feeding-rack is a great convenience and saves the feed at the same

time. It is not so apt to become soiled, because the ducks cannot paddle over it with their feet. Troughs should be cleaned frequently by scrubbing and scalding.

A house sixteen by twenty-four feet will accommodate from fifty to one hundred ducks, according to age and variety. If the house is properly built, it may be used for either old or young. There should be at least four windows, on the south side. Yards should be enclosed with close-mesh poultry-netting or boards. We prefer the latter. A yard twenty-four by one hundred feet gives ample opportunity for the ducks to exercise and still not get far away, when they have to be housed.

Eggs More Valuable Than Feathers

When the snow is deep, we shovel it out of the yards close to the house on the south side and scatter straw over the frozen ground before turning the ducks out for exercise and fresh air. They enjoy it greatly after being kept housed for days, and even weeks, at a time. Portable fences are used to make the yards smaller when necessary to do so.

We feed the ducks regularly and never pick them when eggs are wanted. Ducks cannot lay eggs and grow feathers at the same time. Eggs are more valuable nowadays than feathers. Indian Runner duck eggs bring the same here as hen eggs. They are about the same size. A duck lays an egg every twenty-four hours. Pekin ducks are not good winter layers. They are large feeders compared with the Indian Runner. The latter will eat about as much as a chicken hen, but the duck's ration should be different from the hen's.

Grain Should be Soaked

Whole grain is not good for ducks, although they will eat it when nothing else is provided. When it is fed, it should always be soaked for an hour at least before feeding. The ration must be varied and not too highly concentrated. Bran and vegetables should play an important part in the feeding of all varieties of ducks. We feed laying ducks, morning, noon and night, all they will eat. A mixture that is always relished is composed of equal parts bran and corn-meal well moistened with water or milk. To this we add an equal quantity of vegetables, cooked and mashed, or chopped raw. A little salt is added once a day.

Cut clover, scalded and steamed, is sometimes used instead of vegetables. We use green rye when it can be had. Cabbage is next best. Oyster-shell, coal-cinders and sand are kept within reach. We furnish plenty of clean, tepid water for the ducks to drink.

ANNA WADE GALLIGHER.



"Can I do something for you?"
"No, thanks. I don't believe in quacks."

How to Make Your Hens Lay More Winter Eggs

Your hens ought to be paying you bigger profits just now than any other time of the whole year. Prices are away up, but fresh eggs are scarce. Hens—your hens—have a tendency to put on flesh during winter instead of producing eggs. This is due to closer confinement, lack of exercise and green stuff. Hens need a tonic during cold weather to keep the egg clusters active and turn the largest possible amount of food into eggs. Dr. Hess Poultry Pan-a-ce-a will do exactly that. It positively makes hens lay more eggs.

Dr. Hess Poultry Pan-a-ce-a

Dr. Hess Poultry Pan-a-ce-a contains:
Potassium Nitrate. An Eliminant.
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Under the supervision of Dr. Hess (M.D., D.V.S.) the above is carefully compounded and blended, with just enough cereal meal to make a perfect mixture.

has been on the market nearly 20 years—it is the only egg-producing tonic that has stood the test of time. A penny's worth of Dr. Hess Poultry Pan-a-ce-a is enough for 30 fowl per day. If it doesn't make your hens lay more eggs, your dealer will return your money; and it also cures gapes, cholera, roup, indigestion, etc.

Our Proposition. You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it fails to make your hens lay more eggs and keep your poultry healthy, he is authorized by us to refund your money. 1½ lbs. 25c (mail or express 40c); 5 lbs. 60c; 12 lbs. \$1.25, 25-lb. pail \$2.50; except in Canada and extreme West. If your dealer cannot supply you, we will. Send 2c for Dr. Hess 48-page Poultry Book, free.

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Is There an "Egg Type" in the Domestic Fowl?

A QUESTION of perennial interest to the poultryman is that of the "egg type" in fowls. The reason for this interest is, of course, not far to seek. If it were the case that high egg production was always and without exception associated with a particular conformation of body, the problems of successful poultry-keeping would be enormously simplified. It would be possible to select breeding stock with an entire certainty that the desired ends would be attained.

In the frequent discussions of this topic of egg type in the poultry press and at poultry gatherings, two somewhat different questions are frequently confused. It will help toward clearness if we distinguish sharply between these problems at the beginning. On the one hand is the problem of egg type in the strict sense, which may be put this way: is there a particular conformation of body or type which is invariably correlated with high egg productiveness? This question may be asked with regard either to the breed or the individual bird. On the other hand is the problem of the relation of single external characters, such as comb size or shape, carriage of tail, color of legs, length of toe-nails, etc., to the egg-laying activity of the bird. This last question is not strictly one of type at all, since it is concerned not with the conformation of the bird as a whole, but with particular characters or sets of characters only. It, however, almost invariably enters into any discussion of egg type.

We may now consider the first problem in a little detail. Is there any evidence, which will withstand critical examination, tending to prove that a particular conformation of body is invariably associated with high-producing qualities either in the breed or in the individual? I think not, and for the following reasons: Taking first the breeds, it is commonly said that the Mediterranean breeds, the Leghorns, Minorcas, etc., are the egg-laying breeds par excellence, and that the general conformation of body or type which they exhibit is the true egg type.

American Types are Also Productive

But let us see. There are two lines of evidence which indicate that this popular conclusion cannot be scientifically sound. In the first place, it is very doubtful indeed if Leghorns or any other Mediterranean breeds are necessarily better layers than some other breeds of totally different type. For example, it is well known that there are flocks of Barred Plymouth Rocks and of White Wyandottes, belonging to the so-called American type and totally different in conformation of body from the Leghorns, which nevertheless are quite as productive as the best Leghorn flocks. It is possible, though by no means certain, that the general run of Leghorn flocks through the country produce more eggs than the general run of, say, Barred Rock flocks, but if this were certainly true it would have no critical bearing on the essential point under discussion. It might, and probably would, only mean that it is not so difficult to manage and feed Leghorns in such way as to get relatively high production as it is to manage Barred Rocks to get the same result.

There are authentic and official records of egg-production in Barred Rocks, for example, quite as high or higher than any recorded for Leghorns. I might cite here some of Prof. W. R. Graham's records. In a flock of fifty Barred Rock pullets six made in their pullet year an average record of 259 and a fraction eggs apiece. One of these birds laid the astounding total of 282 eggs in the year. Yet these were not of the Mediterranean type. They were Barred Rocks, American type birds.

How About the Black Spanish?

A second body of evidence is found in the fact that there are some breeds of poultry which are clearly and indubitably of the Mediterranean type and yet are poor layers, or, perhaps better, are conspicuously not good layers. An example here is the White-Faced Black Spanish. No doubt this was once a breed of good productive qualities, but it has been injured by the fancier in breeding exclusively for the peculiar face ornamentation. But, even so, the Spanish is still a bird of distinctly Mediterranean conformation of body or type. But if this type necessarily means, or, in other words, is casually connected with, high egg productiveness, then the Spanish ought to be good layers.

Experiments in breeding carried out by the writer at the Maine Agricultural Experiment Station have given results which appear to demonstrate that it is possible to combine high egg-laying qualities with any bodily type. For example, it has been possible by crossing and subsequent segregation in accordance with Mendelian principles to produce birds of Game type which were at the same time high producers. But the Game conformation of body is one usually associated with extremely poor laying qualities. The general conclusion to which the writer has been led by his study of the matter is that the particular combinations of characters (namely, high or low egg-laying, conformation of body, form of comb, length of shank, etc., which are found in existing

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racess of poultry are in large degree what may be called accidental combinations. They do not represent necessary or causal inter-relationships or correlations. It would appear to be possible, so far as the experimental evidence we now have shows, to recombine in all conceivable ways, by appropriate breeding methods, practically all characters of poultry. There is every reason to believe that a bird can be bred, if it seems worth while, which will combine high-laying qualities with whatever "type" (conformation of body, carriage, etc.) one chooses. This would seem to demonstrate that there can be no causal or necessary connection between "type" and egg-production.

The "Egg-Type" Theory Exploded

The points which have been advanced above respecting breeds apply with the same force to the case of individual birds. An excellent illustration of this is afforded by an occurrence at the poultry-plant of the Maine Agricultural Experiment Station. Some years ago one of the best known poultrymen in America, a veteran of many years' experience, was a visitor at the plant. In going over the pens one bird struck his eye as of outstanding merit as a layer. In his words, she represented the ideal, the highest expression of the "egg type." He demonstrated to an attending group of students the several points of body conformation which proved that this bird was one of the world's great layers. Sad it was, but true, that at the end of her year's work this paragon of producers, though having always enjoyed the best of health and vigor, was found by examination of her trap-nest record to have produced the magnificent total of twenty-eight eggs in a year!

Coming now to the second question raised at the beginning, we may ask whether there are not some external characters from which a more or less accurate judgment may be found regarding the bird's laying ability. There are undoubtedly a number of such points which give some information respecting the functioning of the ovary.

For example, the comb enlarges before laying is to begin. The pelvic bones are somewhat further apart during a period of laying than at other times. In yellow-shanked breeds, the yellow color of the legs will be found to fade out with laying, and the more eggs which the bird has laid, the paler will be the shanks. In American breeds, the two-hundred-egg hen will usually have nearly perfectly white legs at the end of her year's work. This point may be of a good deal of use to anyone not trap-nesting, because by selecting the birds with the palest legs at the end of the year, to save over as breeders, he will be picking, on the average, the best layers of the flock.

Egg-Laying Predictions are Uncertain

So far as we now know, however, there is no one external character, nor any group of such characters, which will enable one to say with any certainty beforehand that one bird will make a high producer and another a low producer. One can tell that a bird is going to lay, that she is laying and that she has laid, but farther than this it is not possible to go, at least so far as any biological evidence now available regarding the functioning of the ovary indicates. There is no real, definite, critical evidence of the existence of such a thing as an "egg type."
DR. RAYMOND PEARL.

Her Ladyship, the Hen

All About the Most Useful of Birds
HER Ladyship, the Hen, is the most respected creature of all the feathered race. Her culture, whether on a small or large scale, is most pleasurable and profitable.

At one time only the retired army officer, the invalid and the ne'er-do-well went in for poultry-farming. All has now changed. Poultry-farming is booming! The clerk is leaving his pedestal, the draper his counter—all are bent on poultry-farming. A recent recruit to the fancy is a well-known comedian. Paderewski and his wife, too, devote attention to prize fowls.

Prices now range from \$250 to \$500 for tiptop birds. Black Orpingtons have frequently changed hands for \$250 each, as also have Buff Orpingtons.

Some High Poultry Prices

Barred Rocks always fetch good prices—\$250, \$350, \$450, etc. The champion Barred Rock cockerel of 1907 changed hands three times for \$250, \$500 and finally for \$350. Bantams, too, have fetched as much as \$500 a pair.
The purchase of champion birds is to a degree a speculation; they may die at any minute. The advertisement, however, is in the possessing of such masterpieces of the breeder's handicraft. The famous Partridge Wyandotte cock which was sold in 1904 for \$825 is an exception; it is still living. This wonderful bird was originally shown at the Dairy Show, in London, England, where it secured first prize, being bought for \$250 and resold for \$350. At another show, a few days later, the breeder of this bird exhibited another cockerel believed by some to be better than the first. This was also sold at \$250 and resold later for \$400.

Soon after the two birds met, and the \$350 bird, after beating his mate, was bought for \$825, by a well-known lady fancier. This is the highest price ever paid in England.

Training Birds to be Judged

Of course, with costly prize fowls every care and attention must be bestowed upon them. Once a "topper" goes amiss, it means a loss of many, many dollars, especially if in the middle of the hatching season. The number of shows held yearly the world over makes the general exhibitor's life very interesting. The judge will seldom stop to even look at a bird if wild in the pen. The bird will not then allow herself to be handled or even show off her "points." The exhibitor has, therefore, to put his birds into training-quarters about two weeks before the show. The bird is caged up in an ordinary wire pen, as used at the shows, specially fed with choice titbits and stroked with the hand and a judging-stick or twig till quite tame.

Linseed is given to put a gloss on the plumage. The bird is then occasionally handled, preferably at night, when such live stock seem somewhat stupified. The owner must pass the stick up the breast and throat, causing the bird to hold its head up. In the case of birds requiring length of limb, titbits are held up high and the bird made to stretch for them.

Beauty Treatment is Given

Fancier friends are called in to discuss aloud the qualities of the bird and walk around the pen to get the exhibit accustomed to noises encountered at the shows. Strict attention is paid to cleanliness. Dark-colored birds are ideal for novices, as they require but little preparation after training. Gently pass a large silk handkerchief slightly dampened over the bird, in the same direction as the feathers grow, to remove all surface dirt from the plumage. Wrap a soft towel around the bird's back, and hold its legs in warm water; then gently scrub the legs with a nail-brush and a good lathering soap. Wash the face, comb and wattles, and apply



A pure-bred Buff Orpington hen

a little vaseline or olive-oil to render the head-points a brilliant red, which denotes perfect condition.

As white birds require more attention, three washing-tubs are necessary. Tub No. 1 contains warm water made into a lathering foam with soap-powder. Immerse the bird up to the neck, working soap well into the feathers. Press all soap and water out of feathers and fluff, and put bird into tub No. 2, containing lukewarm water. Rinse the soap well out, and the bird is ready for No. 3. This tub contains lukewarm water previously "blued" to keep the purity of the white feathers. The bird is then dried, which is the final process. PERCY PRIOR.

Tuberculosis or Cancer

AN OHIO reader writes us of the trouble she is having with her Buff Orpington chickens. Large lumps, resembling carbuncles, form on the back of the neck, and sometimes under the neck. The chickens could not walk three or four days after the lumps appeared, but are able to walk again, though the lumps are getting larger. They have a modern, well-ventilated, clean coop, and are fed corn, wheat, oats and a mash of bran, middlings and corn-meal, with plenty of grit, shells, charcoal, grass and water.

From the description of the ailment, I judge it to be either a manifestation of tuberculosis or a cancerous growth. There is no reliable remedy for such ailments.

The best thing to do is to destroy the birds at once and burn them or bury them deep. Then watch carefully to see that the ailment does not develop in the other birds of the flock. If it does, destroy the entire flock and procure healthy stock.

Apparently the susceptibility to the disease is inherited from the parent stock, and is just appearing. I am satisfied from your description of your method of keeping the fowls that the disease was not contracted under your care, but it is plain that the fowls are tainted, and the sooner you get rid of them the better. Thoroughly disinfect their quarters before putting other fowls in to occupy them.
FRED GRUNDY.

"I made big interest on \$150,000 this year"

That is the reply which Mr. L. Casalagno, of Oakdale, California (in the San Joaquin Valley), made to the query: "What is your 120-acre fruit ranch worth to-day?"
Think of it! If his net profit was only six per cent, it would mean \$75 an acre, and six per cent is not big interest in California.

Couldn't you, with your native intelligence, industry and ambition, do better than you are doing to-day, if you were located in a country where a man can make big interest on an average investment figured at \$1,250 an acre, and the land costs but one-tenth of that?

If you own your own place, can you earn big interest on the present value of your farm?
If you are renting, are you getting ahead?
How long will it take you to buy a farm of your own?
Can you see your way clear to a position of independence?
Think about this.

Talk it over with your family.

Would it not be the part of wisdom to at least investigate the possibilities of California?

I, as General Colonization Agent of the Santa Fe Railway, tell you that the chances to succeed are greater in California than they are in any place with which I am acquainted.

You can buy desirable farms, with water, in the San Joaquin Valley, for from \$125 to \$150 an acre, and these farms, properly cultivated and planted, will return to you as much as Mr. Casalagno received from his land.

Even if your net returns were no greater in California than they are to-day, wouldn't it be worth while moving there just to live where there is no winter—where mere existence is a delight?

The Santa Fe has no land to sell. Its interests are tied up with your interests, and, unless you succeed, the railroad will be better off if you stay where you are.

We know you will prosper.

You can go and see for yourself at small expense.

On the first and third Tuesdays of each month the Santa Fe sells home-seekers' excursion tickets from Chicago to California, and elsewhere in the Southwest. Before you go, write for our two books, "The San Joaquin Valley" and "What California Means for You."
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Crops and Soils

Sunflower-Hedge Prevents Corn from Mixing

MR. QUICK has requested from us a brief report of the results we secured by planting a hedge of sunflowers between different varieties of corn, to prevent cross-pollination.

There were six acres of ground in the field on which these different varieties of corn were planted. Pure-bred Iowa Silvermine corn was planted on the south side of the field. Twelve or fifteen rows of sunflowers then were planted across the entire length of the field, the rows being the same width as corn-rows. They were drilled in rather thick, as hill-planting would leave too much space between the hills. The hills should not, however, be closer than two feet, as sunflowers require considerable space to develop properly, and will be of thinner foliage and stunted height if crowded too much.

A little strip of cane and a patch of oats came next, but, of course, these were not intended to prevent mixing of the corn. On the extreme north side of the field we planted a patch of pure-bred Reid's Yellow Dent corn. It should be understood that the sunflowers grow as rapidly, or more so, as the corn, that they reach a height of from eight to twelve feet and that their leaves are very numerous, large and flat. All this tended to catch and retain the pollen flying from the two different varieties of corn. While there was, of course, some slight mixing of the two, it was mostly near the edges of the field next to the sunflower-hedge. We selected as fine seed-corn from both patches as one could wish, most of it showing not the slightest trace of mixture.

We might add that millet was sown between the rows of part of the corn after the last cultivation, a five-shovel cultivator being employed in covering the seed. At fodder-cutting time the corn-stalks were cut low down and shocked as fodder; the mowing-machine guards were elevated and the millet cut for roughage, some of it reaching a height of four feet and being well headed out. It was mowed, however, just before it was thoroughly ripened, so there would not be too much grain in it, and it formed one of the finest winter feeds we ever handled.

M. COVERDELL.

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No Lost Motion

I WANT to answer Mr. P. C. Grose's article on "The Corn Scoop-Fork" in the issue of September 28th. It may be faster occasionally on some soils to pick corn from the ground, but, take it all around, there is nothing that beats the scoop for handling corn. If you cannot use the fork in the field, how much quicker and easier it is to scoop the corn from the wagon-box to crib. Right there is where it pays for itself over and over again.

Continuous scooping may become laborious, but is squatting down to fill the basket and getting up to empty it not a good deal slower and more laborious? There seems to be a whole lot of lost motion in the latter method. Besides, I have yet to find work around the farm that don't affect the back. The saving of time, more than anything else, is what the up-to-date farmer wants.

Regarding the use in the stable, as Mr. Grose says, it is very convenient and eliminates a good deal of the trouble with the sharp-tined fork.

M. J. SCHNEIDER.

Quack in the Garden

A MICHIGAN reader asks how he can rid his garden-land of quack-grass.

It will not be possible for you to succeed in clearing your land of this grass while you continue to use it for garden purposes, as there is sure to be enough of the grass surviving in the garden so that the land remains infested with it.

My advice is to use the land for other purposes for a couple of years. Sow this land to oats, wheat or barley next spring, and as soon as the crop has been harvested remove it from the land, and at once begin cultivation by means of disk harrows. The land, late in July or early in August, should be harrowed until the surface is entirely pulverized. Then throughout the months of August and September, and later if the ground remains dry, continue to harrow once every week or ten days, or sufficiently often to prevent any leaf growth from starting. This will so injure the vitality of the quack-grass roots as to make them more easily killed during the winter. Late in the fall the ground should be plowed so as to bring as much of the root development of quack-grass to the surface as possible. The frost during the winter will then nearly finish killing most of the roots.

The following spring cultivation of this kind should begin as early as it is dry and continue until time to plant to corn, potatoes, cabbage or some other hoed crop which can be given very thorough cultivation. Then throughout the season what little of

the quack-grass remains must not be allowed to make any leaf growth. If this is followed throughout the season very thoroughly, the quack-grass can be entirely killed.

Of course, this means a good deal of careful work, but it is the only method that has proved effective, and is the one that is successfully practised wherever this grass is being overcome. B. F. W. T.

Judicious Farm-Selection

"I WISH I had looked about more before I bought this farm," is the lament of many a countryman after spending one year on his new place. "The place looked all right when I bought it, but things have turned out wrong all around," perhaps continues the dissatisfied farmer. "The soil isn't as good as I thought it would be. Some of the fields are sour. We are not sure of our water-supply. The roads to town are mighty bad in a wet season. This is a poor neighborhood to live in because everyone seems to be a fine borrower and a poor lender. My children have to walk two miles to school. There is no church nearer than seven miles. I wish we were back on the old homestead again."

To a greater or less degree these sentiments are voiced by hundreds of different farmers at the same time in widely separated portions of the country. And all because they acted first and thought afterward. The successful purchase of a farm is a matter that requires a surplus of study and thought. Too many countrymen have deemed it a trifling matter and consequently have lived to learn and regret. As one authority phrases it, "The choice of a farm means the selection of a home and business combined, a place where money must be made and where domestic happiness can be obtained. There must be a healthful environment for the family, markets for the products, fertile soil and congenial neighbors, available labor and convenient school facilities—in fact, a host of details must receive most careful scrutiny."

Such factors as the fairness of the price of the land as compared with the real value of the adjoining land, the amount of working capital that will be available after the initial payments are made on the farm, the clearness of the land title, the productivity of the land as indicated by former crops, the amount of tillable land in the farm, the condition and repair of the buildings, the water-supply for crops, stock and human beings, the past management of the place and the crop rotations practised, the climatic conditions, the accessibility to market, the nearness to school and church, the character of the roads and a host of similar puzzlers present themselves.

Investigate Local Business Methods

The prospective settler in a certain community should study local labor conditions so that he will know how to handle the help question. He should ascertain the attitude of the district toward coöperation and rural improvement. He should inform himself regarding local politics and their effect on the farm. He should investigate the business methods of the local merchants and find out whether they attempt to bleed the farmers in the sale of their commodities, or whether they are content with a fair profit. The newcomer to the district is wise if he accepts all the volunteer information that is heaped upon him with many a grain of salt, as the gossips always desire to portray the good points of their region and are discreetly silent when the matter of its defects are under consideration.

Having decided on a district that is adapted to the line of farming that he wishes to pursue and having informed himself regarding the quality and resources of the community, the farm-hunter may fittingly begin his search for a farm. If possible, it is preferable to see a place both in the spring and fall before purchasing it. It is well to look over the farm from all viewpoints and to visit it alone if it is possible to "shake" the real-estate salesman or the farm-owner. The prospective purchaser should study the drainage conditions, both natural and artificial. He should know the number of live stock the place will support, the crop yields of each field for a series of years, the amounts of feed annually bought and raised for the stock, the distances to town, creameries, grain-elevators and canning-factories.

Expert Legal Advice is Worth All It Costs

A study of the express, freight and passenger rates to marketing and purchasing centers is essential, as well as complete knowledge regarding the local rural delivery, telephone and telegraph service, banking facilities, the presence or absence of coöperative buying or selling associations, the frequency of severe storms, droughts, frosts and forest fires, and the chief agricultural occupation of the district. In case the farm is located in a desirable district and if it satisfies all the conditions of profitable crop production and fertility, as well as family comfort, the purchaser should next make sure that he will obtain a clear title with the place. It is wise for him to engage a reputable local lawyer to investigate the title and to generally advise him concerning the farm and local traditions. This may appear

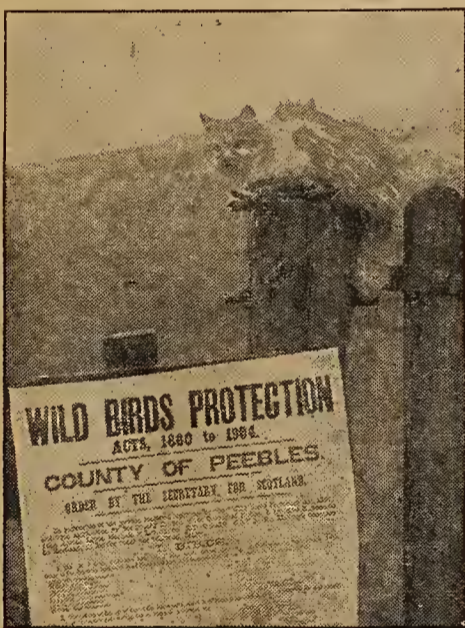
a waste of money on the face of it, but it will ultimately prove to be money well spent.

The farmer that pays attention to these essentials will have little cause to grumble or complain about his purchase if he has bought carefully and wisely. It is usually the uninformed man who buys in a rush who wishes to kick himself later on when his purchase does not pan out as well as he anticipated. Having once enrolled himself in a community, the farmer should henceforward be a staunch booster for his home district. He should be willing to sacrifice a few dollars or a little work to improve his locality, to maintain the roads in good condition, to improve social conditions in his community and to further any movement featuring greater educational or religious advantages for his own family and that of his neighbor.

It is impossible herein to enumerate or elaborate upon the individual factors that will arise in the successful purchase of a farm. The purpose of this article is to set the future farm-buyer to thinking. Once his mind is working, many other points that require careful consideration will occur to him, and he should handle them as he sees fit. One factor needs to be emphasized, and that is that the farm is to provide both a home and a workshop for the family. It may be their place of residence for a score or more of years. This is the reason why the purchaser should "look before he leaps" and satisfy himself in every particular that he will like the place as well ten years afterward as he did on the day that he made the purchase.

Allow Enough for Running Expenses

Whatever you do, Mr. Farm-Hunter, don't tie up all your capital in paying for the place and have no reserve for running expenses. At best it will be several years before the farm is returning much of a revenue to you, so apportion off a generous amount of your available funds for working capital and for rainy-day emergencies. Then you will be in tiptop shape to begin operations, and you will not have to worry over where to-morrow's dinner for the family is coming from. Play the game safely and rather buy a smaller farm than to involve your all in the land and equipment and perhaps go hungry for many days and ultimately lose your farm because you "bit off" too big a chunk. GEORGE H. DACY.



This means protection to crops

The Cost of Wheat

MR. SCHWARTZ estimates the cost at \$10.25 per acre. A farmer in North Dakota, using 320 acres, all in wheat as a basis, figures \$12.25 per acre. If a business man, a manufacturer of farm machinery, for instance, were to figure the cost of growing an acre of wheat as he figures the cost of HIS product, he would include the interest on his plant; the farm cost; the upkeep; making good and replacing the wear and tear; the salary of the president or manager of the plant, in addition to that of the employees (the farmer's wife would be considered on the basis of an assistant manager, and her "salary" would be calculated); the loss of stock during the year; the interest on the note, if any, at the bank, or say the farm mortgage, if such things exist to-day in the farm world; taxes, and perhaps a percentage for "unseen expenses" that creep into farm life and yet go unheeded.

If the above items are not legitimate "expense" items on a farm, what are?

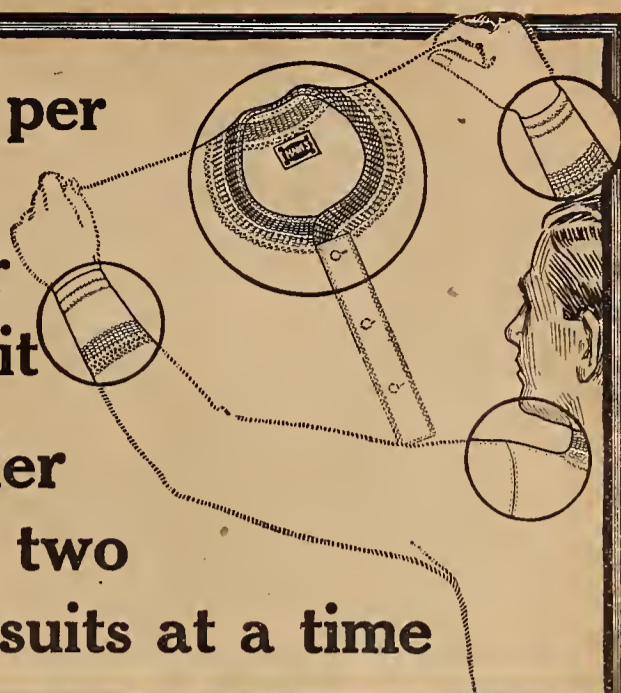
CHARLES CRISTADORA.

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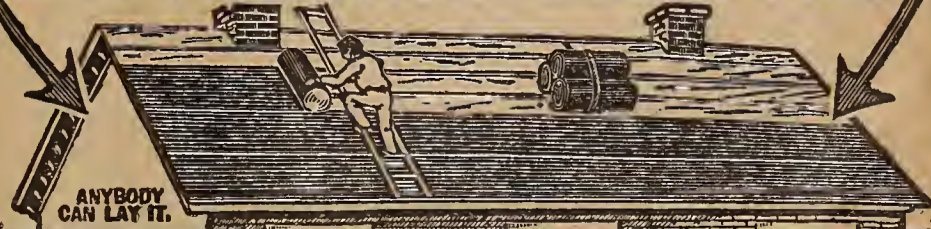
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Garden and Orchard

Maine's Slogan: "Coöperate."

THAT the products of the State of Maine are in great demand is very well known wherever exports are made. But that there has been much cheating and misrepresentation in the grading and shipping of the products of the Maine farms is a deplorable fact not so well known. It has, however, been the subject of much discussion, in agricultural societies, in the agricultural papers of the country and to some extent among shippers and farmers. But until recently nothing has been done about it.

Endeavors have been made at about every session of the legislature "to make the farmers and shippers of Maine honest by statute." This has failed either by lack of enforcement on the part of proper officials or by lack of sentiment in favor of it.

Last year was organized the "Oxford Bears Fruit-Growers" in Oxford County. They started out on a new track to pack an honest grade of apples regardless of what others did, and they made a rousing success of it. Others have followed this year.

In the farmers' institutes that have been held this past year by the State agricultural department under the new commissioner, J. P. Buckley, a start was made to get the farmers in the State to adopt businesslike methods.

The Meetings Were Successful

Commissioner Buckley engaged C. E. Embree, of New York, then the sales manager of the Long Island Potato Growers' Exchange, to come to Maine to tell the farmers in institute work something of coöperation.

He came to Maine December 5, 1911. The first meeting was held at Perry, in Washington County. He was engaged for three weeks. So prosperous were the first meetings that he was engaged to stay for other meetings. From that time to the present the commissioner has kept Mr. Embree in the State attending these meetings wherever requested.

The first association formed was at Brunswick, known as the Maine Central Potato Exchange of Brunswick. Later, the following were started: The Maine Central Potato and Apple Exchange of Brooks, The Maine Central Potato Exchange of Dexter, Maine Central Farmers' Exchange of Waterville, Maine Central Farmers' Exchange of Pittsfield. The Farmers' Exchange of Fort Fairfield. Before this there had been organized the Androscoggin Patrons' Coöperative Association of that county. A grocery-store was in operation in Auburn. Through the State Union this association will do business and make shipments and buy goods. The Central Maine Coöperative Association has a similar store, and has voted to become part of the State Union. Others are falling into line.

When the matter of forming a State-wide association was mentioned, Bangor put in a bid for it to be formed with headquarters in that city, and so the meeting was called for that place. Because of the lateness of the season, the farmers were still busy with the spring work, and it was not thought that the attendance would be large. However, this meeting proved to be the most representative body of men ever gathered in the State to consider a like project.

The entire meeting was a success, and is a great start for a good purpose. So say those who are most interested in the matter. The Union is to be congratulated that a man like C. E. Embree can be secured to carry forward this business to a successful finish.

It is planned that The Farmers' Union of Maine shall become a selling agency for the farmers who are members. Any organization now existing properly organized may belong to the Union by subscribing for five shares of stock at ten dollars each. This entitles the members of the local as individuals or as a body to sell and buy through the State Union. On the business thus done a commission will be charged, say, of a cent a bushel on potatoes sold and twenty cents a ton for fertilizer bought.

Dishonesty Among Dealers

The potato-seed business in Aroostook, where nearly all the seed-potatoes in Maine are shipped from, is in a deplorable condition. In fact, the farmers are in a fair way to lose this business. Not so much because they fail to keep the seed pure when it is growing, but many seed-dealers carry on a dishonest business. This last spring it was stated frequently that because of the scarcity of potatoes many dealers had only one kind of seed in their cellars, and yet they sold five or six varieties all from the same bin. The seed-buyers of New York and the South have just about concluded to quit buying seed in Maine. Not that they desire to do

so, but they will be driven to it. The Farmers' Union will take up the question of seed as one of the first items for work. The shipping of apples is in even a worse condition. The Oxford Bears and the Norway Fruit-Growers and the Kineo growers have blazed a trail and have made extra money by being honest in the pack of their apples. In the apple country this is just what the Farmers' Union will do.

Confidence in the Union Trade-Mark

To show the value of an established trade, I quote Mr. Embree, who cited the grapes that come into New York from up State. On one side of the exhibits are shown the grapes put up by individuals. On the other side are the Union baskets, each stamped with the trade-mark. The buyers scrutinize very carefully and pick over the individual basket and take what they like. But they do not scrutinize the fruit put up under the Union trade-mark or label. They order so many baskets, knowing that if the fruit is not good it will be coöperative.

This coöperative movement will place the farmer on an equal basis with the business man. Heretofore, when buyers came around to buy potatoes or apples, the farmer has said, "What will you give me?" Hereafter, if he is a member of the Union, he can call up his manager when the buyer comes and ask, "What are potatoes bringing to-day?" He can get his price, for he knows that if the buyer will not give it he can get it through his association anyway. He is thus placed in possession of actual market conditions.

This policy will change the fertilizer business in this State, which is not managed properly at all. In every little hamlet is an agent. He gets a little commission from his neighbors. They all buy in comparatively small quantities and thus pay the largest price. Hereafter, this same man will be able to join with the other members of the local and buy such things and save more money than he made before.

Objects of the Union

According to the officers of the Union, some of the objects are these: "To act in the capacity of buying and selling agents. To watch and fight legislative matters that might be detrimental to the farmers' interests. To endeavor to keep railroads within reason. To be in a position to furnish the railroads with market conditions so that they may be better prepared to furnish equipment to transport farm produce. To endeavor to work in every way with other farm organizations and shippers to promote confidence in all parties. To ascertain as nearly as possible the crop conditions in various parts of the country, which information will be distributed among the locals for the benefit of the stockholders. To influence bankers to finance local construction work of a permanent nature and to finance the farmers at reasonable rates. To educate the farmers to buy and sell goods for cash, and thus avoid the exorbitant rates of interest charged to the farmers when they buy on credit. To induce the different organizations and farmers to use a uniform kind of stationery and then purchase in large quantities to make a saving."

To sum it all up, this organization is not to do away with the middleman, for it is impossible to place the goods of the farm in any great quantity direct into the hands of the consumer, but to get a better business method between the producers and sellers.

Utilizing Rabbits

WHEN rabbits are very plentiful in any section, they are sure to do much damage during the winter and spring months to young fruit and shade trees by gnawing the bark from the trees. Consequently the trees must be protected from their ravages. Even a very few rabbits in an orchard or in adjoining fields make necessary the work of protecting the trees. Now no lover of nature would recommend a measure to exterminate the rabbits completely as, for instance, the wild pigeon has been exterminated. It is good to have a few of them around, especially if one wants to take a few hours' hunt now and then, but it is not good to have them make their headquarters in the orchard. These need to be exterminated, if possible. A good dog and gun is all that is necessary to do this, and a few hunts will practically clean them up around the orchard until another season has increased their numbers.

Develop a Retail Market

Some people don't like rabbits as a regular food, but the game need not be thrown away because of this fact. There is always a demand for dressed rabbits in the cities and towns at fairly good prices. Butcher-shops will take them and pay you from ten to fifteen cents each for them, or you can sell them to restaurants and hotels or to private customers at a quarter apiece, the price at which the butchers usually retail them. So if you bag more of the little animals than you can use at home, either dress them yourself or give them to some boy who would like to make a little spending-money.

Preparing the Garden

I KNOW farmers who attend market, who have large gardens and who are industrious planters, but somehow their gardens "don't do well." Step inside, and you will see the reason. Instead of plowing in the fall, letting the fallow grow mellow and freezing out the predatory insects, they wait until springtime, and then plow the ground wet!

They tramp around the garden when the soil is wet, gathering vegetables, or showing Sunday visitors about, when every wet track leaves a clod. After things get a good start, they hang up the hoe to rust in a tree, and never notice the crowding weeds a foot high. In the fall when they dig out the crop from amongst crab-grass, Spanish needles, horse and hog weeds, purslane, etc., a very medium turnout satisfies them. And they never dreamed of doing better!

The same ground that will bear lusty weeds and grass is fully as able to grow potatoes, onions, lettuce, etc.; and it takes eternal vigilance and the hoe to combat the weeds. They will let the weeds stand after the crop is off, or mow them and throw in piles, shattering out seed like a young hail-storm, and next spring wonder where all the weeds come from.

The garden should be the farmer's physician, supplying all the healthy medicine in attractive form that he needs, for everyone knows how each vegetable is good for some part of the human system, and the garden should largely supply the owner's own table, instead of being robbed for market.

In the fall clear away the bean-poles, cut, or pull, and burn all weeds, bean-vines and trash. Burn them, I say, or you will provide winter quarters for bean-weevils, squash-bugs, wireworms, etc. Then either plow as deep down as you can get, or spade it up deeply. Plow in manure, if you can get it, and next spring plow or spade over again when dry enough. If the soil is hard and heavy, sow clover as early as you can this fall to turn under next fall, and change your garden to another spot, or treat half of it so, and let it recuperate.

CLIFFORD E. DAVIS.

Put all your big apples on top, and on the bottom, and in the middle of one barrel—and if you have small apples, dispose of them in the same way in another barrel.

Keep a Record

I SEE so many farmers setting out trees each year and in a year entirely forgetting what variety was set there. They have to wait until fruiting-time and then guess at the name.

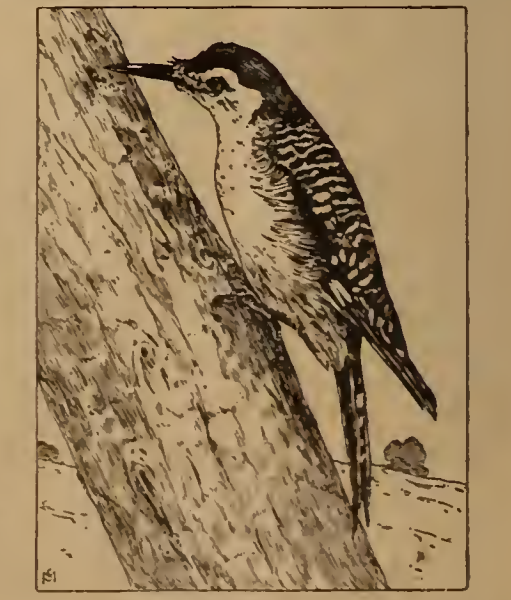
My way is to write down the date when set, variety of fruit and exact position, something like this:

March 1st, set apple-trees, Jones' nursery, back field, first row, first six trees, Northern Spy; next two, Fallawater, etc. Then you have the exact data. Beats guessing or forgetting.

CLIFFORD E. DAVIS.

Red-Bellied Woodpecker

I OFTEN wonder how many of these birds, one or more of which can be found in every piece of woodland, are taken for the common "flicker" by the casual observer of bird life—the average farmer—as he works in the woods during winter? This bird so nearly resembles the flicker that the person with but little bird knowledge would judge it as such. He is termed "ladder-back," from the black and white bars across his back; is smaller than the flicker, but has



the top of head and neck red, instead of simply a red nape like the flicker; the red underneath, however, is rather inconspicuous. But it is by their "chow-chow" notes that they are easily identified.

Scarce as bird life is in the winter season, his flitting form and harsh, uncanny notes are always in evidence, and his name can usually be counted upon as a fixed one on the birdman's winter-day list.

According to the Biological Survey, the red-bellied woodpecker's diet consists of only about one-fourth animal food, mostly insects; the balance wild fruit, such as berries, acorns and beechnuts. In Florida, where these birds are common, they peck an occasional orange; and during the winter I have observed them eating frozen apples.

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Study This Pest

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This leaf-roller (*Archips argyrospila*) is widely distributed over the United States, for it ranges from Maine to Texas and is not uncommon on the Pacific Coast. It attacks a wide variety of trees. We have bred the moths from apple, pear, wild cherry, walnut and mountain-ash. In addition, it is known to feed on plum, rose, currant, gooseberry and other plants.

The Eggs are Laid in June

The caterpillars appear as the buds begin to burst, and they at once attack the unfolding leaves. They bend the leaves over and tie them together with silk. As soon as the blossoms appear, the larvæ begin to eat off the blossom stems, and many of them actually gnaw their way inside of the blossom buds. The webbing and tying together of the blossom and leaf clusters is a most pernicious habit because it prevents the poison from reaching the larvæ and from reaching the calyx cups for the codling-moth. As soon as the young apples or pears begin to set, they are tied together with silk, while the caterpillars live inside the mass and gnaw cavities into the sides of the young fruit. Later, the larvæ roll the leaves and live within the roll, where they feed upon the tender tissues and remain hidden out of the reach of insecticides. When disturbed, they drop down out of their hiding-places and remain suspended by silken threads like canker-worms.

The eggs are laid by the moths in June in climates like that of New York, the major number being deposited during the middle days of this month. They are deposited in small oval, convex patches on the bark of the smaller twigs. The egg-masses are usually a shade darker green than the branches, but are often difficult to find unless very numerous. The eggs remain on the trees until the following May, or over ten months. During the first two weeks of May, in New York, the eggs hatch, and the young caterpillars begin at once their work on the buds. When full grown, the larvæ are light green in color with a black head and are about one inch in length. About the middle of June the caterpillars become mature, and each one rolls up a leaf, inside of which it spins a thin, flimsy network of silk and changes to a pupa. The pupal stage lasts from ten days to two weeks. In the latter half of June, then, one may look for the small moths in abundance. The moth, in general, is rusty red with two bright silvery spots along the front edges of the forward pair of wings. The moths lay their eggs on the branches, where they remain until the following spring, there being only one generation a year.

A Difficult Pest to Control

This leaf-roller has not proved an easy pest to control. One would think that a good spraying of the infested trees with arsenate of lead added to lime-sulphur just before the buds break, and another before the blossoms open, would control the pest, but in this we were disappointed. The worst-infested orchard was sprayed once by the owner for the blister-mite and bud-moth, about the time the buds were swelling. At this spraying two pounds of arsenate of lead were added to fifty gallons of the lime-sulphur solution. On May 9th the eggs of the leaf-roller were hatching in abundance, and on May 13th thirteen Baldwin trees were thoroughly sprayed with two hundred gallons of lime-sulphur solution, to which eight pounds of lead had been added. This was just before the blossoms opened. Later, after the petals had fallen, the regular codling-moth spraying was given, making three poison sprays applied to these trees. We were much disappointed to find that the larvæ were not visibly lessened in numbers by these applications.

In the spring of 1912 we carried out a large series of experiments at our New York station in an attempt to control this pest. These experiments cannot be detailed here, and we can only say that repeated and thorough sprayings with arsenate of lead and ortho-arsenite of zinc failed to show any appreciable effect in destroying the caterpillars.

Black-leaf-40, 1 to 1,000, with five pounds of soap and four pounds of arsenate of lead

to every one hundred gallons, seemed to give best results of all the spray mixtures used. We hoped the black-leaf-40 would kill the larvæ by contact, but in this we were disappointed. We were, however, surprised to find that many of the egg-masses that had not already hatched when the spraying was made failed to hatch afterward. This bit of evidence leads us to hope that we can destroy the egg-masses by spraying the trees with black-leaf-40, one quart to one hundred gallons of water, with five pounds of whale-oil soap added to the mixture. Of course, this spraying should be made before the eggs hatch in the spring.

Our laboratory experiments show that scalecide, one gallon to thirteen gallons of water, will destroy the eggs. This knowledge was gained too late to be of use in the spring of 1912. Moreover, we dare not recommend this strength of scalecide for application to trees until it has been more carefully tried. If any reader tries it, we would advise making the application on a clear warm day in spring (we would do the work in April) when the temperature is above freezing, and then only to a few trees.

GLENN W. HERRICK.

Some of the most constant theoretical farmers never operate very far from the shade of a tree.

Beans Learn to Climb

TWELVE or thirteen years ago we had a nice, white, tender bean of most excellent eating qualities that was known in this section of the country as the half-runner bean, from its habit of growing only a short vine that would not usually reach above the ear on the corn-stalks when planted in the corn-field. We have planted these beans in the corn-field every year since we first got them. A few years ago we noticed that these beans made larger vines than they did when we first began. They have continued to grow larger vines, until now the vines reach the tops of the corn and sometimes try to go farther.

They are prolific bearers, a medium-late variety, somewhat later than they were when we first began to grow them, and if the beans are kept pulled off when they are of proper size for snap-beans they will continue to bear until frost. The pods are very tender and full of nice beans. They have not lost any of their good table qualities by the change to heavy vines, and are an excellent bean to grow both for home use and for the market.

A. J. LEGG.

GARDENING

By T. GREINER

Good Use for Squash and Pumpkin Seeds

WHEN we feed pumpkins to cows or pigs, or use a squash in the family, we usually gather the seeds. Those from particularly fine specimens, high in quality or showing some superior characteristic, are saved by themselves. We may want to plant them next season. But there is usually a demand for seeds of an ordinary good run of squashes or pumpkins in May or early June for seed purposes. It may pay well to save them.

If we have no other use for pumpkin and squash seeds, those of poorest as well as best specimens, they come handy for rat and mouse bait. There is really nothing better. We save a lot of them just for this purpose, and with them we can coax rat or mouse to almost any place, or into any trap, provided we use them skillfully and judiciously, and especially persistently. The damage done by rats is incalculable.

The Concrete Hotbed

This is the cement age. The hotbed cannot escape the general current in the direction of concrete construction. Personally, I prefer the greenhouse, even if small, to the use of fire or manure hotbeds. Personally, I believe that the greenhouse is indispensable for highest success in market-gardening, and that the hotbed is only a makeshift for the home gardener. Personally, I would most strenuously advise everyone who engages in growing vegetables or flowers for sale, even if on a most modest scale, to put up and run a greenhouse, however small or modest; but if a hotbed has to be on the place, as a more or less permanent equipment, it might as well be constructed of concrete as of any other material.

Concrete is lasting. It is comparatively cheap, especially in localities where sand can be had for the hauling. The concrete walls for the hotbed are usually made six inches thick, and the whole bed of a size corresponding with the size and number of the sashes to be used. Four sashes of ordinary size (three feet wide by five to six feet long), making a bed about twelve feet and a few inches in total length, will give all the plants for spring setting that a large family garden may require, and perhaps

some to spare, or some lettuce and radishes, a little out of season. The forms are made of one-inch lumber, and set up in such a manner that the rear, or north, wall will be twelve or fourteen inches above the ground level and the front, or south, wall six inches, the tops of end or side walls sloping from rear to front. A bed of this size will require about twelve bags of best cement, one and one-fourth cubic yards of sand, and two and one-half cubic yards of fine crushed rock or coarse gravel. If the proportion of cement is a little larger, it will do no harm. Any person of ordinary mechanical skill can put up the framework, mix the materials to a mushy wetness, then fill the forms and let the concrete harden. If properly constructed, and with the help of double-glazed sash, vegetables can be grown in such a bed very late in the fall, or very early in spring. Single glass, and in some localities even prepared cloth, may do as a covering for growing early vegetables or flowering plants.

Tomatoes on Trellis

I am more than pleased with my "Ideal" (Chalk's Early Jewel type) tomatoes on stakes or trellis. They are a "sight." Strings of tomatoes from the ground up to almost the crosspiece five feet high! The tomatoes are of even size, four to six and more in a cluster, and evenly colored a bright brilliant red. They are clean, almost free from blemishes and free from insects or worms. I can let them get dead ripe, and they hang for days afterward without getting soft. I can pick them into peach-baskets for market directly from the plants without having to wipe them, and almost without having to reject a specimen. It is very seldom that I come across a specimen that is not good enough for use or sale. The trellis way of growing tomatoes, with the Early Jewel or a similar type of tomatoes, is a combination hard to beat for the home garden.

Big Yields of Onions

An Ohio reader wants to know the variety of onions, potatoes and tomatoes that will yield the most in Ohio. I have just been judging the vegetable exhibits at the New York State Fair. Premiums were given for biggest specimens of some of these vegetables. Gibraltar and Ailsa Craig carried off the prizes for biggest onions. I can grow the Gibraltar to a much larger size than any other onion, and a far greater yield besides. It will do the same thing in any locality, I think, if plants are started early under glass and set in open ground in spring. The yield depends largely on an early start, which is also the case with all onions grown by any method. Wethersfield Red is one of the heaviest croppers for outdoor growing, but not so popular in our markets as the yellow sorts. For ordinary market, Yellow Globe (Southport) and Yellow Danvers are most largely grown. World's Wonder was, with me, the heaviest yielding potato. Among the potatoes shown at the State fair, the heaviest yielders, reported as such by expert growers, are World's Wonder, Rural New-Yorker, etc. For heaviest yield of tomatoes I use the variety of which I am certain to be able to ripen the entire crop before frost. I must use an early sort, such as Earliana, Bonny Best, Chalk's Early Jewel, etc. Where later sorts can be planted, the variety, usually, which is planted on good soil and proper distance apart, and given good culture, will most likely respond with biggest yield.

Why So Much Onion Top?

A Wisconsin reader wonders why his Prizetaker and Red Globe onions went so much to top, or neck, instead of making large "bottoms," or bulbs. They were grown from seed sown May 25th. Would it have helped to cut the tops off? Or what could have been done to induce root growth? Sometimes this undesirable neck development is caused by carelessness or mistakes in selecting seed stock.

It may be helped along by unfavorable soil or weather conditions, or by the preponderance of the nitrogenous element of plant-food in the soil. In a mucky soil, and in a wet season, there is much more danger of such excessive top, or neck, development than in a sandy soil and in a dry season. An early onion, such as Early or Round Red, Silverskin, Pearl, etc., is less likely to give you "scallions" (thick-necked onions) than the later Prizetaker, Gibraltar or even Red or Yellow Globe. The Globe varieties, however, planted early and on suitable soil, are not much inclined to make scallions. I would not attempt to grow Prizetaker, nor even Red Globe, by sowing seed as late as May 25th.

To be more sure of getting large and perfect bulbs, especially of the Prizetaker or other varieties of the sweet Spanish class, sow seed early under glass, not later than early March, and transplant the seedlings in May to open ground, rows to be at least a foot apart, and the onions three to four inches apart in the rows. That will give you onions of which you can be proud. Cutting off the onion-tops as proposed would simply make a bad matter worse.

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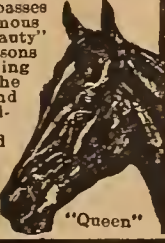
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The Market Outlook

High-Grade Meats in Strong Demand

THE Chicago *Record-Herald* has commenced a crusade in favor of eating mutton. May all the big dailies follow suit.

By the second week in November a considerable improvement in the prices of both sheep and lambs had set in, occasioned principally by the heavy falling off of western shipments. A little later on, tempted by the higher prices, quite a flood of range sheep came in, but this was regarded as a sort of "last kick" for the season, and until spring no large shipments are expected from that quarter. Top lambs went up to \$7.50 per hundredweight, but the supply of these was small, the bulk of the fairly finished sort ranging between \$6.85 and \$7.15, with feeding lambs in good demand from \$6.00 to \$6.60, and feeding sheep from \$4.00 to \$4.40. For once prices were higher in the principal western markets than in the East.

Feed is Plentiful Everywhere

The holiday demand is always for high-grade meats, and the margin between the top and the bulk of fat lambs and sheep, which has been running from twenty-five to seventy-five cents, may before Christmas be over \$1.00, with but few bidders for the poorer sorts. It would seem good policy, therefore, just now to send none but highly finished stuff to market, and to put the last polish on the others by a few more weeks of feeding in the hope to top the market.



Well-bred rams are the foundation of a profitable flock

Feed is plentiful everywhere, and it is probable that early spring will find the markets well supplied with fat sheep and lambs from the West, but, as a rule, the quality of a majority of these is not likely to be of the highest, and the bulk of them will probably be disposed of by the end of April, leaving a good opening for highly finished spring lambs from the corn belt and from small flocks everywhere, provided farmers have fed the ewes so as to be able to put their lambs on the market at from fifty-five to sixty-five pounds in weight reasonably early. All signs point to high prices for wool, and advances are quite probable, for there is no question as to the world's supply being short, and the clothiers are likely to have to pay high to fill their needs.

Management of the Ewes

Since new accessions to the readers of FARM AND FIRESIDE are numerous, it may be useful just now to call attention to a few of the most vital points of the advice given two years ago in these columns as to the management of ewes just before lambing.

Plenty of exercise is most desirable for pregnant ewes. They should be kept, as long as the weather permits, in the fields

where they can be helped along with clover or timothy hay, and corn and alfalfa silage—the latter in moderation to avoid scouring. They should be yarded at night, and it will pay to give them a ration of one-half pound of mixed oats and bran with, perhaps, a sprinkling of linseed-meal. This should be divided into a night and morning meal. Corn is too fattening to be given before lambing, and fat must be avoided as dangerous; good, solid, firm flesh, good health and liveliness being the best preparations for coming safely through that anxious ordeal. When properly prepared, ewes generally get through with little trouble.

Sheep will endure and even enjoy a considerable amount of cold, but heavy rains are bad for them. In their yard they should have access either to the barn or to a shed closed on three sides, impervious to rain and free from cold drafts, which often cause serious lung troubles.

Our Memories Are Short

The yard should open to pasture, where their roughage can be scattered about for them, to promote exercise. For a small flock, if no such yard is available, a good temporary one can be cheaply provided, as described in FARM AND FIRESIDE of August 25, 1910.

Great care must be taken to keep pregnant ewes quiet and free from all alarms from dogs and guns. The yards and sheds should be littered deep with straw, the surface to be renewed when wet or much soiled; this is not only for the comfort of the sheep, but also to preserve their manure in its best form. Fresh pure water and lumps of rock salt protected from the weather are a necessity.

All this may be regarded as needless repetition, but experience has taught me that memories are often short (mine is), and newcomers into sheep culture will, I am sure, increase rapidly.

JOHN PICKERING ROSS, Illinois.

Breeding vs. Buying Cattle

I WONDER how many of the readers of this paper know anything about the range country two years ago. I went out to Cherry County, Nebraska, and bought 350 calves. The owner of these calves had from twenty to thirty thousand acres under fence. Now don't let yourself picture a land of milk and honey, with cattle up to their knees in grass; for, with the exception of a few valleys from which hay is cut, the country is just pure and unadulterated sand, with tufts of tall grass and a good sprinkling of buffalo-grass. When I first saw the outfit, I said, "How do cattle live?" but when I arrived at the ranch and saw 1,000 cows, 750 calves and 350 yearlings, I took off my hat and said, "Here's quality, here's where I buy if my purse is long enough to do so."



Never think we can't get quality from western cattle

This is the greatest cattle country there is, and when you realize that Sand Hill cattle that never saw grain have sold in Chicago this fall for over nine cents, it finally begins to dawn on you that, although the ranges may be cut up, there still are and will be millions of acres fit for nothing else than grazing purposes. Now when I bought these 350 calves were they stunted? Well, if they were, they did not show it. They were the *crème de la crème*, weighing 350 pounds on November 1st and 1,000 pounds in July.

The next year, 1911, I did not buy the calves from this ranch, and the owner kept them over. They were weaned November 1, 1911, and fed wild hay until May 1, 1912, and weighed less in May than when weaned. Wouldn't you think it would pay the owner to take care of these calves?

We Can't Get the Quantity

Well now, there's no grain raised in that country. As all is shipped in, how much money does he lose by letting his calves shrink all winter? If he loses any, he loses no sleep over it, as I have just bought the yearlings, 363 head, for \$42 per head, and they average 700 pounds. If they had been sold as calves, they would have been worth, on the range, \$21 per head, so that the owner has, on 363 head, received \$7,000 for keeping them a year on land, the value of which is \$4 to \$6 per acre. Even if it does take ten acres to pasture an animal, the question is, can I breed cattle and compete with this? This is my answer.

When I take these yearlings weighing 700 pounds, I know they are not as large as they might have been had they been wintered well, but range yearlings have sold in Chicago this fall at seven cents, and mine would sell to-day for seven cents locally.

Don't tell me they are stunted and will not feed well this winter, for I know they will feed as well as any mature yearlings. If you don't know what buffalo-grass is, you can get no idea of how good these western cattle can get without grain. Never think we can't get quality from western cattle; what we can't get from now on is quantity. There's no question but that the ranges are being cut up and that we will each year get fewer range cattle and there's no doubt also that, as far as the corn-belt farmer is concerned, it's the best thing that can happen, because what we want in farming is more stability in prices.

If I had a good German wife and sixteen children to do the chores, I'd keep cows and sell the cream and raise the calves on skim-milk and supplements, but as I don't have these blessings, I don't think the time has come yet when I can afford to keep a cow thirteen months with all the attending risks simply to raise a 400-pound calf, and yet I know the shortage of cattle in this country is not realized by the masses.

For the shortage is here right now, and the cattle will have to be raised in the corn belt, and raised on skim-milk and supplementary feeds, and can be raised to-day at a profit if siloes are used, and the farmers will raise cattle just as soon as they see a profit in it. But up to the year 1912 the seeing has been like looking into the bunghole of an empty barrel, a little dark.

W. S. A. SMITH, Iowa.

Why the Hog-Market Declined

THE sharp declines which occurred the fore part of November came as a surprise to the trade. This drop had been expected to arrive later in the winter, but the marketward movement started earlier



The current supply can hardly be called good

than predicted. A combination of favorable conditions gave the packers an opportunity to cause a decided break.

Receipts had increased with the approach of winter, and a considerable number of hogs were forced to market from certain districts because of cholera epidemics. Eastern shipping demand for the time being was curtailed because of liberal marketing of the eastern hog crop. With a supply a little in excess of fresh-meat demands and with no competition, the packers were in a position to force prices sharply downward toward the figure they have set for their winter stocking up. This figure is seven dollars. How near they will be able to adhere to it remains to be seen.

From one point of view prospects are favorable to the seller. The reduction in price has brought a number of small packers into the buying circle, thus increasing competition. The supply is but little above the current demand from fresh-meat channels, thus making the stocking up of cellars a slow operation unless receipts increase. The stocks now in the cellars are but seventy per cent. of last year's stocks at this time.

With the coming of cold weather and the reduced price, the consumption of fresh pork has expanded very materially. From this it would seem that the large packers cannot be too independent, or the small packers and the speculators will come in and absorb the supply.

The current supply is improving in quality, but it can hardly be called good. The pigs that are coming are larger because of greater age, and the entire offering begins to show the effects of the feeding of new corn. However, prime heavy hogs are scarce and command a premium.

Legislation to Fight Cholera

Certain localities are sending numbers of sick and half-fat hogs. Western Iowa has been visited by the scourge, and in places the mortality has been high. Mass meetings of farmers have been held to discuss the situation, and probably the next Iowa legislature will be strongly urged to vote adequate appropriations for the manufacture of serum with which to treat hog-cholera.

Each year some portion of the country is visited by cholera, and it will not be until sufficient funds have been obtained in each State to combat it that this waste will be stopped—a waste which is shared between the producer and the consumer.

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L. K. BROWN, South Dakota.

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The FARMERS' LOBBY.

Uncle Jim and His Job

By Judson C. Welliver



THE Department of Agriculture things are considerably a-stew over the prospective change in the politics of the administration. That observation might be applied to any other department of course, but it happens that the Agricultural Department takes its troubles and does its worrying differently. The people there are not so much concerned about their individual jobs, apparently, as they are about the future of the Department and its work.

Most Positions Are Independent of Politics

VASTLY the greater number of people employed by the Government, nowadays, don't need to worry about a change of administration. The civil service law has been extended over so many of them that the proportion whose tenure depends on politics is very small. It was estimated, on the best authority, the other day that of thirty-three thousand people in the Government departments in this city not over one thousand at the outside, from the president and his cabinet down, would be affected by the change. Even down to laborers, civil service regulations have been extended over the great body of employees, so that their positions are not dependent on politics, and the superior officer cannot get rid of a subordinate without giving good reasons, filing charges, permitting the employee a hearing and demonstrating that the charges are well grounded and that a change is necessary for the good of the service.

So, while the number of people at the Department of Agriculture who would be in danger of "losing their jobs" through a change is small, it is a significant fact that so many are concerned about the prospective change for entirely different reasons. They are less interested in their "jobs" than almost any other class of Government employees, because among the experts, scientists and specialists there is little occasion for worry on that score. The place is full of men who could earn more money elsewhere if money were all they wanted. But it isn't. They are concerned that the general policy of the Department, which has been guided by Secretary Wilson for sixteen years come next March 4th, shall not be so far changed as to interfere with the usefulness of the big work it is doing.

This is a mighty big and serious matter in which farmers have a very live interest. Secretary Wilson has served under three Presidents, through four administrations. No other man in the nation's history ever served so long in presidential cabinets. He has had one of the greatest opportunities that ever was presented to a governmental administrator in this country to accomplish a monumental work; and he has accomplished it.

Mr. Wilson's Policy Has Been Correct

SAY what you like about the feuds of seven years ago over the crop-reporting bureau, or over the pure-food administration in more recent time, the fact stands that Mr. Wilson is the man who has made the Department the big, useful, nation-serving affair it is, a model to the governments of other countries, an example to the States, and a mentor to the agricultural industries of the world. He could have done more if he had known, at the beginning, that he was going to be there sixteen years; without doubt he did vastly more than four other men, equally able, could have done in the same period, if it had been allotted to them in four-year sections.

Just to illustrate—not to knock—it is pertinent to compare the Wilson policy with that of J. Sterling Morton, who came before him in the same position. When Mr. Cleveland made Morton secretary of agriculture, the Department was in its infancy. It amounted to mighty little, and Mr. Morton promptly got the idea that it was extravagant. He wanted to save on it. He did. He was a good saver and an exceedingly poor secretary of agriculture. When he was done with his service, he reported with great pride that he had saved enough to build a new building for the Department! It was true, but there wasn't any Department left fit to build a house over. Morton, for instance, found a lot of "special agents" on the roll. He wanted to know what they were good for,

and sent a circular letter to a long list, demanding that they explain forthwith what they were doing and what was the use of it.

A big proportion of the answers were unsatisfactory. The men who were summarily called upon to answer such a catechism largely thought it was useless to try explaining; some resigned, some sent curt and laconic answers, some tried to explain to a secretary who didn't have any sympathy with what they were about and concluded it was all buncombe anyhow. One man, for instance, was studying away at a theory that if seed-corn were properly tested before being planted it would yield better. Secretary Morton sniffed at the notion, and the man quit his job.

A few years later the Iowa Agricultural College worked out the same project, proved the hypothesis, carried it to the farmers of the Middle West, and they say that as a result the increase in annual value of Iowa's corn crop alone is about equal to the total annual cost of the Department!

That illustration will suggest just about what the present danger to the Department is, as interested people view the matter.

When Wilson became secretary, he quit trying to keep the Department little. He didn't worry much about saving money. He wanted a big Department, a lot more money, a long list of new

tasks to wrestle with. He got the money as fast as he was ready to use it, because he got the confidence of the farmers and the country.

Now here comes the danger. The Department has been under fire for a long time. It has been criticized by reason of various mole-hills of trouble, which have been exaggerated into mountains of disaster. These have been pushed into the foreground of the picture, till they have cut off a perspective of the great realm of substantial accomplishments wrought.

If a new secretary of agriculture is selected with reference to the criticisms and the troubles of the Department, it will be a mistake. No man who thinks this big Department has gone to the dogs will be the right man for its head. No man with a general conviction that things are hopelessly awry, and that a complete new policy is needed, will do much more than run amuck. Doubtless there are weak spots; reforms may be needed in some quarters. But the fact stands that the administrative surgeon who comes along, looks over this patient and then proceeds to operate will make a tragic mistake if he cuts off a leg or two in order to relieve the discomfort attending a couple of corns! That's just what is liable to happen if any of these professional critics or people with grievances against the Department get into its headship.

Dr. Wiley's Qualifications

TAKE a concrete exhibit at this point. I have been the supporter of Dr. Harvey Wiley for years, believed in his work, believed he was not getting a fair deal, felt that the Pure-Food Law was not doing the full measure of its possible service to the public because there was too much influential opposition to him in the Department—and higher up. My record is straight on that point, and the making of it has filled a good many columns of newspaper and magazine space.

Nevertheless, I don't think Doctor Wiley ought to be secretary of agriculture. He is a good agriculturist, a good

scientist, an honest man. I don't know whether he is a good administrator, but let it be admitted that he is an excellent one. Let it even be agreed that, if he had been made secretary of agriculture sixteen years ago, he would have done a greater work than Mr. Wilson has done. Granting all that, I would earnestly oppose making Doctor Wiley secretary of agriculture now.

What Would Happen if Dr. Wiley Became Secretary

THERE is talk of his name in connection with the place; his admirers insist that as a measure of vindication he ought to get it. He is a Democrat, supported Wilson and is entitled to a vindication.

Nevertheless, Doctor Wiley as secretary of agriculture would almost certainly be a mistake. He has had a grievance too long. He has been a human being. Being human, it is inevitable that he should have accumulated some more or less distorted notions that everything is wrong. Between him and Secretary Wilson a feud subsisted for a long period. The allegiances of many men throughout that feud have been such as to embarrass them in relations to Doctor Wiley if he should become secretary. There are scores of men who had nothing whatever to do with the pure-food administration, yet who in all fair probability would not be able to remain in the service under him as its chief. It wouldn't be his fault, nor theirs, but it would be true. These are men who in their particular functions are very valuable, who couldn't well be spared, whose places would be difficult to fill. Even if filled with equally able men there would still be a break in the continuity of policy and performance that would be unfortunate.

This department doesn't want a pure-food man at its head. Neither does it want a cotton man, nor a corn man, nor a dry-farming man, nor an irrigation specialist. It oughtn't to have a northern or a southern, an eastern or a western, man. It needs one with a broad enough mind and grasp and imagination to see the whole country, and then it wants a man who is in sympathy with the general purposes and policies of the Department, simply because those purposes and policies have made good.

Men of the sort to fill that bill are not easily to be found, and it is not the purpose here to advocate anybody in particular.

Mr. Wilson was retained in the Taft cabinet simply and solely because the farmers wanted him. Mr. Taft didn't want to keep him, and didn't intend to do so. But organizations and individuals among the agricultural interests "riz up" in such force to demand his retention, that there simply was no second in the race, and Mr. Taft couldn't see any other candidate because of the Chinese wall of Wilson endorsements that got between him and the thought of a change.

It's different now. There's going to be a change, and it is highly important that the right sort of man shall come in. Later on, the Lobby may venture so far as to discuss men and their qualifications, but not now, at any rate.

The Department is just finishing its organization for the purpose of carrying its farm-demonstration work into the Northern States with the same thoroughness that that has been done in the South. The last session of Congress provided the money to do it, and now it's up to the

northern farmers to indicate whether they are going to take as much interest in it as the South has demonstrated.

It has been a curious fact that the North has seemed to care little about this work, while the South literally "eats it up." There is a county farm-demonstration agent in practically, if not absolutely, every rural county in the South. That came about in a curious way. When the Department set about to carry its practical work to the people down there, who needed it worse than any other section, it ran up against the big and solemn fact that there was no use sending printed matter to people who couldn't read. Many of the white farmers, and more of the colored, in the South couldn't. Bulletins were chiefly useful to start fires.

So the plan of sending practical men to show the trick to these unfortunates was devised. It succeeded from the start; succeeded so well, in fact, that the Department had difficulty getting capable men fast enough to meet the demand for them. The plan is to insist that the local community—commonly, a county—shall pay part of the expense of maintaining the county agent.

The South wasted no time discovering that it was a good thing. The experts proved their case, and the people flocked to lectures, demonstrations, model farms, and the like. For a long time the North didn't awaken to realize that it was missing something very much worth while, and the Southerners monopolized it. They got appropriations through Congress for it, interested their county governments, chambers of commerce, farmers' clubs, and the like, in raising the required local-support funds, and presently were smashing all records for producing cotton, corn and the other things.

So the northern congressmen and senators, backed by an increasing appreciation of the work among their people at home, began to demand a share. As a result, the session recently ended added \$300,000 to the appropriation for this work. The congressional purse-holders offered to make it \$500,000, but the Department told them that there was no need of giving so much the first year. An organization must be effected through which to spend the money effectively, and the men must be found to do the actual field work, which is no easy task.

People who have familiarized themselves with this work are confident that it will get magnificent results in the North and West, just as it has done South.

But it's the farmer east of Ohio that the Department expects to have the most fun with, when this demonstration farming gets popular in the North. Secretary Wilson and his assistants have been looking up the abandoned farms of New York, for instance, and some things the secretary said about that region were highly edifying.

"I rode from Albany to Utica with Congressman John Dwight," he said, "and he pointed out one place after another as of special interest.

Fewer Abandoned Farms

"THERE'S the place where Ezra Cornell was raised," he said, pointing to one. And then presently:

"There's the farm where Roscoe Conkling was born and raised," and so on.

"I observed that, on an average, one place in each three was abandoned, and it seemed time to find out why. I found out. The people who lived there a generation and two generations ago were too good a people! They were strong for education; educated their boys and girls just as well as they knew how—and educated them straight away from the farm."

There is a good deal to indicate that the abandoned farms are coming back. In New England the number of them grows beautifully less year by year, the foreign element of population moving out from the factory towns to take small places, and making, on the whole, excellent and successful farmers. They are very amenable to instruction, too; willing to have a man from the Department show them how to do it, which is more than can be said for a good many American-born farmers in the North and West. The cost-of-living problem in the eastern centers of population is going to be a long way toward solution, the specialists think, when these eastern lands are brought back under proper and effective cultivation.

Since his boyhood days in Iowa, Mr. Welliver has been a close friend of Mr. Wilson. He knows the Secretary's triumphs and mistakes, his powers and weaknesses. Mr. Welliver is especially well prepared to discuss the present situation. The Editor.

Woodrow Wilson isn't likely to care what the Lobby thinks, but he will care what the farmers of the country think, and it is right that he should care. The farmers are entitled to have a secretary who will suit them and serve them. They don't want any prejudices or ancient disagreements to chuck rocks into the gearings of the machine.—Judson C. Welliver.

Christmas Gifts You Can Make

In a Short Time with Limited Material

Selected by the Fancy-Work Editor



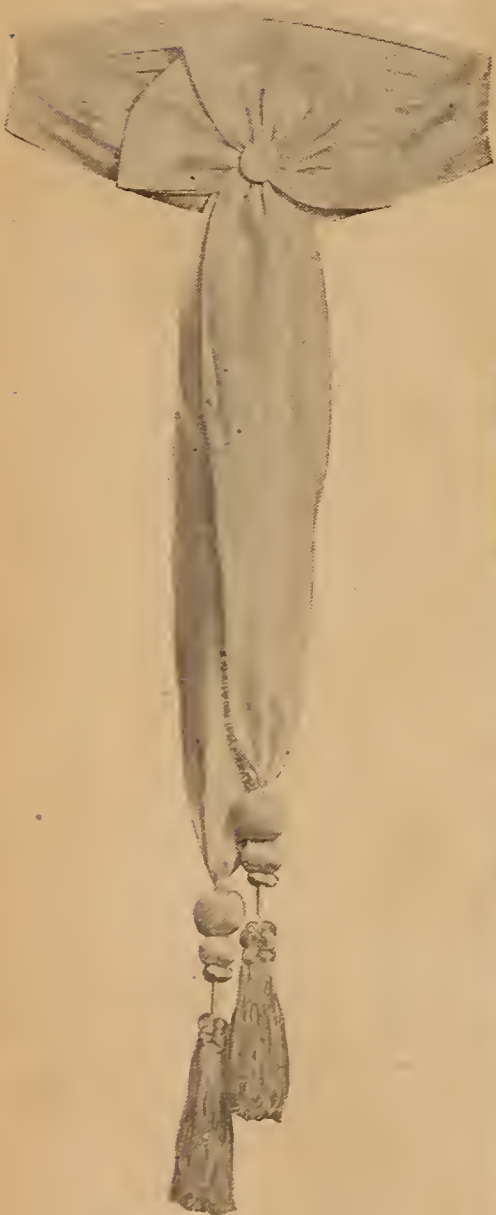
Shadow-lace jabot in the new shape



A new kind of work-bag



A hood for riding or sleighing



A sash any girl would like

ON THIS page are shown some of the very newest ideas in Christmas gifts. Every one of them can be made at home by the possessor of clever fingers. And some of them need but the veriest scraps of silk, lace, chiffon, embroidery-floss or ribbon to blossom out into something lovely and useful as well.

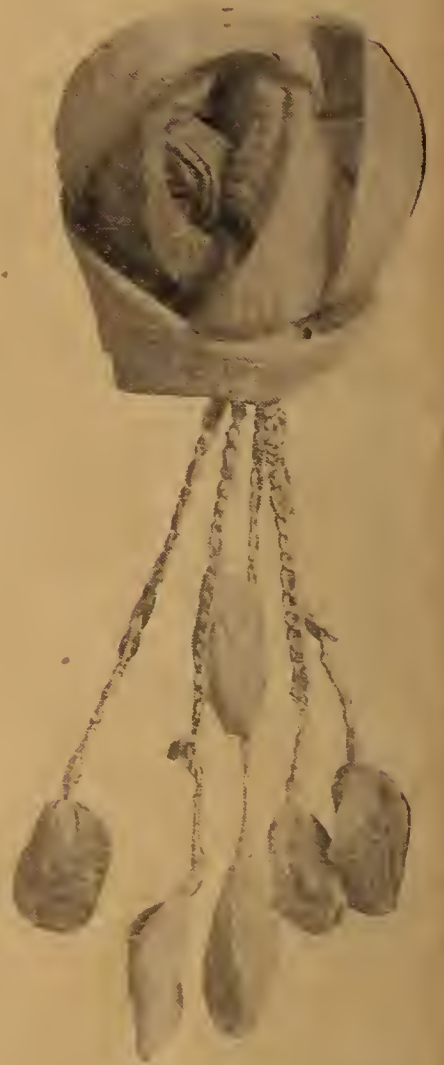
The lace jabot is the very latest word in the matter of shape and size. And it's ridiculously easy to make. The hood for the auto, buggy or sleigh is another bit of loveliness that is so easy to make you'll wonder why you haven't made dozens of them for your friends. The work-bag is quite new and has such a clever way of closing. The pink messaline sash is new and pretty and very useful. Anyone, girl or woman, from sweet sixteen to sixty, would like the chiffon rose to pin at her collar. And sachets have become something quite new this year, as the tiny dress-sachets suggest. The posy pincushion looks so different from the usual type that you'll want one yourself when making others as gifts. It really looks pretty enough to wear, doesn't it?



A posy pincushion



Back view of pincushion



A chiffon rose for the collar or belt



The new dress-sachets



A new kind of hair-ornament

The velvet bow for the hair, with its rim of steel beads, is cleverly wired so that it will keep its true-lover's knot when fastened in the hair. The black satin buckle adorned with a wreath of pink roses and blue forget-me-nots is not only attractive, but very easy to make.

Perhaps you'll be able to make any of these gifts you desire without any further instructions. If, however, you wish detailed directions for making the nine gifts pictured here, you may obtain such directions by sending six cents in stamps and a stamped and self-addressed envelope to the Fancy-Work Editor, in the care of Farm and Fireside, Springfield, Ohio



A buckle of flowers

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Christmas Goodies

COCOA FUDGE—One and one-half cupfuls of sugar, six teaspoonfuls of cocoa, one-half cupful of sweet milk, one-half teaspoonful of vanilla and one teaspoonful of butter.

Mix sugar and cocoa, and add milk. Let boil, stirring so it will not burn. Add butter and vanilla. When it forms a small ball when dropped in cold water, remove from the fire, and beat thoroughly. Pour in buttered tins, and when partly cool mark in squares.

Ice-Cream Candy—Three cupfuls of sugar, one-fourth teaspoonful of cream of tartar, one-half cupful of water and one-half teaspoonful of vinegar.

Boil together without stirring until it will become brittle in cold water; cool, and pull till white and glossy, adding any desired flavoring while pulling. Cut into pieces.

Rose Nougat—Two cupfuls of white sugar, one teaspoonful of vanilla extract, one-third cupful of corn syrup (white), one cupful of chopped nut-meats, one-half cupful of cold water, one-fourth cupful of chopped citron and well-beaten whites of two eggs.

Boil the sugar, water and syrup until the mixture becomes brittle when dropped in cold water. Remove from the fire, and cool slightly, then pour over the whites of the eggs, stirring constantly. Add the flavoring, nuts and citron. Beat well, and turn into buttered mold to cool. To serve, cut in squares.

Pop-Corn Crystals—One and one-half cupfuls of sugar, one cupful of hot water, one tablespoonful of vinegar and one-half gallon of popped corn.

Boil sugar, water and vinegar until it threads. Pour over popped corn, and stir until it rattles. Serve in small candy-boxes.

Hot Maple Nougat—Two cupfuls of maple syrup, one teaspoonful of butter and one-half cupful of chopped pecans.

Boil maple sugar and butter until it forms a soft ball when dropped in water, add chopped pecans, and stir well. Pour into buttered mold. Cut in pieces.

Peanut Fudge—Two cupfuls of granulated sugar, two tablespoonfuls of peanut butter, two tablespoonfuls of cream and one-half teaspoonful of vanilla.

Boil sugar, peanut butter and cream until it threads when dropped from a spoon. Add vanilla. Beat to a cream, and drop by spoonfuls on oiled paper.

Cherry Bliss—Two cupfuls of granulated sugar, one-half cupful of cream, one-fourth cupful of butter, one-half cupful of chopped candied cherries, one-half teaspoonful of red fruit coloring and one teaspoonful of rose extract.

Boil sugar, cream and butter until they thread. Remove from fire; after cooling, add coloring, extract and chopped fruit. Beat until it thickens and begins to grain, then pour in buttered mold.

Butter Scotch—One cupful of sugar, one pint of syrup, two tablespoonfuls of butter and one tablespoonful of vinegar.

Put sugar and syrup over the fire, let boil for a moment, add the vinegar, then the butter. Boil until it cracks when dropped in ice-water. Pour into buttered pan, and when cold break in pieces.

Hoarhound Candy—Three cupfuls of sugar, two cupfuls of boiling water, three-fourths square inch pressed hoarhound and one-half teaspoonful of cream of tartar.

Pour the boiling water over the hoarhound, let stand one minute, then strain. Add the sugar and cream of tartar to the water, and after the sugar has dissolved boil without stirring till it crackles when dropped in water. Cool, and cut in squares.

Marshmallow Fudge—One-half pound of marshmallows, one cupful of water, two cupfuls of brown sugar, two ounces of chocolate, one cupful of powdered sugar and one-fourth teaspoonful of cream of tartar.

Cook all the ingredients, except the marshmallows, and beat until it stiffens. move from the fire, add the chopped marshmallows, and beat until it stiffens. Pour in buttered pan, and mark in squares.

Chocolate Caramels—One and one-half cupfuls of granulated sugar, one-fourth pound of chocolate, one cupful of molasses, one scant cupful of milk, one-fourth cupful of butter and one teaspoonful of vanilla.

Boil all the ingredients together, except the vanilla, until it crackles when dropped

in ice-water. Add the vanilla. Pour in buttered tin, and when nearly cool cut into squares.

Maple-Nut Fudge—Two cupfuls of brown sugar, one cupful of milk, one tablespoonful of butter, one teaspoonful of vanilla, one-half pound of chopped walnuts, and white of one egg well beaten.

Cook milk and sugar to the soft-ball stage. Add butter, vanilla and nuts, boil one minute, and remove from the fire. Beat until thick, then add the white of the egg. Stir well, and pour into buttered mold.
MARY ELEANOR KRAMER.

Pictures for Gifts

By Sidney Morris

IF YOU want to give pictures for Christmas, there are two or three rules which, if observed, will be very likely to bring you success in your giving.

First of all, reproductions of famous paintings are usually most acceptable. Second, if they're brown or sepia prints, they're apt to be much more artistic than if a colored reproduction is purchased. Third and last, a plain brown oak, dull mahogany or black frame is, nine times out of ten, preferable to a gilt frame, no matter how expensive the latter may be.

The list of pictures given below includes some of the most noted in the world. Of course, a list of ten thousand titles would not include all of the great pictures painted since the year 1 A. D. However, in this limited number will be found examples of some of the most noted pictures of all times.

A simple reproduction of one of these pictures, bought, perhaps, for less than a dollar, will be far more worthy as a gift than the bright-hued, gold-framed chromo, which, at first glance, outshines the quiet beauty of a sepia print.

Such prints may be purchased, framed or unframed, some of the latter being sold for as small a sum as ten cents. No lover of beautiful things, no housewife with a cherished living-room, hall or sitting-room, will fail to appreciate the gift of a reproduction of one of these masterpieces.

Here is a suggested list: The Angelus, by Jean Francois Millet; The Madonna of the Chair, by Raphael; The Ashtree Avenue, by Meyndert Hobbema; My Mother, by James McNeil Whistler; The Horse Fair, by Rosa Bonheur; Dance of the Nymphs, by Corot; Spring, by Botticelli; Angels, by Fra Angelico; Mona Lisa, by Leonardo da Vinci; The Great Mirror, by Thomas Alexander Harrison.

The quickest way to attain happiness is to make someone else happy. A. F. B.

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The ADVENTURES of a BENEFICIARY

by W. J. Nichols
Illustrated by W. C. Nims

Synopsis of the Story

EMERY WRIGHT, a young city man whose claim to his Uncle Nathan's fortune depends upon his successfully managing a Revolutionary relic in the shape of a man-propelled river ferry in New Hampshire. PETE, a half-witted youth, who seems to "come with the ferry."

When Emery Wright arrives at the ferry, his adventures begin.

Chapter III.—A First Voyage

EMERY WRIGHT stood in a corner of his living-room and surveyed the apartment. There was a dogged look on his face, and with it a gravity which set oddly upon him. Pete, grinning with unfailing amiability, staggered in with an armful of wood and, stumbling at the threshold, gave him fresh cause for gravity. It was borne in upon him that Pete was disposed to affect his society; and should this prove to be the case, the boy's habit of falling over anything or over nothing bade fair to become one of the burdens of existence. Pete's toe had caught on the same lintel when he helped to bring in the trunk, and again when he aided in the transfer of the cases, the basket and the paper box; and Pete's body had collided with table, chairs, stove and sink when he essayed little journeys about the room. Now, as he brought wood for the stove, he contrived to drop his burden with a fine crash, half upon the stove and half upon the floor.

The noise was as a blow to Wright's nerves, but he bore it stoically. There had been other incidents to school him in repression. There had been a solemn tour of inspection of the old house; there had been discoveries of dust, cobwebs, broken furniture and general decay. The very air of the place had been stifling, and he had exerted all his strength to throw open windows and to swing old doors, that might have rusted their bolts and hinges into the solidity of welded metal. Two or three windows had lost a pane or two in the course of his attentions, and three or four others had been forced open, but the other sturdy veterans had resisted his efforts. Broken glass had gashed his fingers, and these now being protected by his handkerchief in lieu of bandage, and his coat being off and his cuffs and collar discarded, a great change had been made in his appearance.

Pete, looking up from his task of reassembling the sticks, plainly was impressed, for he began to whimper.

"Never mind; no harm's done," Wright told him; but the lad, instead of being heartened, showed signs of a tendency toward more vociferous blubbering.

"Don't cry!" Wright said, dully perhaps, but with a shade less pessimism. "It doesn't matter. Only try to remember that if you were not so heedless you'd save yourself a lot of bother."

"Huh?" It was a question, and Pete was sufficiently interested to cease weeping and fall to rubbing his eyes.

"You should be more careful; that's all."

"That's what they all say."

"Then why aren't you?"

"Huh!" Here Pete merely marked time.

"Why don't you do as you're told?"

The boy scratched his head in the effort to meet this query.

"Just do your best," Wright explained. Somewhat against his will the welfare of this volunteer assistant was beginning to insist upon a place in attention.

"I do try, Mister. Somehow, though, somehow—" Pete's opening was brave enough, but all too soon he came to an inglorious pause.

"Results not encouraging?"

"Huh?" Pete was puzzled. His big mouth worked spasmodically.

"It doesn't come out right? Never mind; it will; keep on trying. Go right on!"

"I do, Mister; I do!" Pete cried with sudden vigor. "There ain't anything else to do, is there?"

Wright hesitated a moment. A degree of embarrassment was to be detected in his manner, as he said:

"Pete, I suspect you underrate your cleverness. It seems to me you've a very sound notion or two in your head. And, by the same token, it would do other people no harm to get them into their heads, too."

"Huh!" Pete's ear had caught the spirit, if not the meaning, of the words. And then came an interruption to their dialogue in sounds of a male voice, raised to a pitch denoting temper. Man and boy moved to the door together. Looking out, they saw a horseman, a very well turned out person in baggy breeches, puttees, a coat without a wrinkle and a stiff hat. He was mounted on a clean-limbed sorrel mare, groomed to the last hair. There was a scowl on his face, and his bridle-hand was reining in his mare a good deal more sharply and unkindly than her tender mouth deserved.

"I say, you there!" he called out imperiously. "Why don't you answer when you're spoken to? Want to keep me waiting half the day, shouting at a blank side of a house?"

"Not at all," Wright replied. "I don't care for your shouting. In fact, I'd rather do without it, if it's all the same to you."

"Damn you and your likes!" was his offering to the conversation. "If I choose to shout, you'll choose to listen. Where's the old man? He knows enough, anyway, to answer a question."

"Very likely; he impressed me as sufficiently intelligent. Unfortunately he isn't here."

"Then who is?"

"I am," Wright said placidly. "In this instance, at least, you can trust your eyes."

"So you're in charge?" he said sourly. "You'll be the new ferryman, I suppose. Oh, I know who you are."

"Really, it hadn't occurred to me to introduce myself," Wright explained. The young man's eyes snapped.

"Needn't trouble to do so now," he said. "If you'll tell me whether or not a pony-cart has crossed the river in the last hour, it'll be all that's required of you."

Wright doffed his hat in a gesture of humility, which failed to be convincing.

"It is a joy and a delight," he said, "to be able so easily to meet requirements. No vehicle of any kind has passed within that time."

"Hell!"

"Oh, don't mention it; no trouble at all. Pleased to be of service at any time," Wright said easily.

The rider's ruddy face grew redder, and again he swore, as Wright supposed, although the leap of the mare under a prodding spur made certainty on the point impossible. The ferryman followed the flight with eyes that twinkled.

"Pete," he said very cheerfully, "there goes a young gentleman of fashion, whom it may be a privilege and

the moment I'd forgotten the charming rôle I'm to enact. Somebody desires to cross the river, and so somebody blows a horn. That's my cue, eh?"

Again the horn was blown, and an imaginative mind might have caught a note of impatience in the blast.

"Coming, sir; coming!" Wright ejaculated. He cast off the loop of rope which had been thrown over a convenient stump, and sprang on board the scow. On one side of the boat lay a huge oar, and on the other a pole. For the very good and sufficient reason that he did not know how to navigate with a single sweep, he picked up the pole, set one end against the bank, and gave a vigorous shove. To his surprise the scow, heavy and clumsy as it appeared to be, moved away from the shore, by no means swiftly, yet with far more ease than he had dreamed possible. His next shove was with the pole's end in the river sands, and the first voyage of the hereditary ferryman was begun.

Chapter IV.—A First Plunge

WRIGHT'S notions of the art of the successful ferryman were most primitive, but one or two principles might be counted self-evident. There being, of course, some current, despite the smooth and unruffled surface, it was his business to head a little up-stream, in order to avoid being swept below his landing-place. Sooner or later he would transport all manner and condition of men, and the personality of the first would be of slight concern to himself or anybody else. Nevertheless, he was in no mind to cut a more sorry figure than was necessary in the sight of No. 1, no matter who No. 1 might be; and so he was content to pay attention strictly to the task in hand. Presently certain erratic shifts of his beacons warned him that there was more variety in the river than its appearance suggested. Once it was clearly a case of eddy, that set him considerably up-stream.

Then it was a sharply defined current in the normal direction, coincident with an increase in the depth, that told him he was in the channel and added to the complications presented by a swerve of the scow and a shortening, so to speak, of the leverage furnished by his pole. Thrusting with all his strength, he passed this test of watermanship, and when, encouraged by the docile advance of his barge, he turned to look at the shore, he found himself close in, a little above the landing, yet, as he felt, nearing the close of a highly successful maiden voyage. A neat push with the pole, a twist of the wrist he could not but regard as deft, a moment or two of gentle drifting, and his task was done. The sloping bow of the scow touched the bank within a couple of feet of the spot where the wheel-tracks ended at the water's edge. Another shove drove the bow a little farther, and then the scow stood still, safely grounded.

Wright now had time to look at his first passenger. He saw first a pony, then a trim cart, then a girl. And then his hat came off, and he was stepping ashore. For the girl was very pretty and a maiden any gallant ferryman must esteem it a privilege to serve most courteously. She was dressed in white, simply but very daintily, and the sunshine that stole through the trees beside the road flecked with gold brown hair that scorned the protection of hat or parasol. There was brown too, a beautiful even brown, upon the arms bared to the elbow; while a glance at her face was enough to proclaim that here was one of the blessed damsels of the open air, for whom the kisses of the breeze and sun had no terrors. At the moment, however, Wright was more concerned in the look of surprise and embarrassment which had come into a pair of clear, dark eyes. The girl had been busy with a book while she awaited the arrival of the boat, and it was not until Wright made his landing that she looked up and caught sight of the ferryman.

Wright stepped forward and laid a hand upon the pony's bridle. "Perhaps I'd better lead him aboard," he said with what he hoped might be proper professional gravity, but the girl cried "Please don't!" in a way at once to delight him with the voice and distress him with the earnestness of the protest.

"I think I can promise you the trip shall be safe," he said hastily. "It's my first—er—er—run, but I'm sure I can manage it. Of course, I shall be very careful."

"Oh, it isn't that; I'm not at all afraid," she told him, so kindly that he knew she was hastening to soothe what she would naturally regard as wounded pride of performance. "It isn't that at all. But—but I expected Mr. Nettles—he carried me across this morning."

"Mr. Nettles?" Wright repeated deferentially. "I'm afraid I don't know who he is. Oh, yes, I do, though"—deference yielding to something akin to sheepishness with quickened recollection—"I know Mr. Nettles. I didn't quite identify him at first. We hadn't a very protracted acquaintance. He isn't here now. I'm his successor."

[CONTINUED ON PAGE 30]



the ferryman, failing to meet the expected resistance, plunged over the stern and disappeared"

a pleasure to meet. Yet my thumbs are pricking, my son. I have an idea the phenomenon is not limited to the approaching stranger, as is commonly supposed; in which case, as one might say—

"Huh?" quoth the youth, blinking with extraordinary rapidity.

"Exactly; my sentiments in a monosyllable," Wright hastened to add. Before he could say more there came from the other bank of the river the hoarse note of a horn, which even distance and transit over water could not rob of a peculiarly rasping note.

"What's that?" Wright asked. "Some peddler chap?"

Pete ceased blinking and opened his eyes wide.

"Why—why—" he began, "why—it's for the ferry!"

"Well, the ferry's here fast enough. What's wanted?"

Pete triumphed over a violent attack of stammering.

"You are!" he achieved explosively.

"Oh!" Wright threw a world of meaning into the little word. "That's the case in a nutshell, is it? For

Sunday Reading

Make Your Opportunities

By Pearl Howard Campbell

"YES," said Helen to the new minister, "I would dearly love to do church work if I only had time; but I have no opportunity for it. I am in the school-room from eight until five, and my evenings are mostly spent in correcting papers and looking up the lessons for the next day. I go to church of course, but I'm so fagged out I don't feel like taking an active part in Sunday-school or young people's meeting."

"Let me see," said the minister, "I believe you told me you have the seventh grade. How many children have you?"

"Forty-five," replied Helen, congratulating herself that he had changed the subject. "There are twenty girls and twenty-five boys at the very worst age possible."

"Then," said the minister, smiling brightly, "it seems to me that you have forty-five opportunities for the very best kind of church work offered you daily."

He held out a cordial hand and took his departure, leaving Helen to reflect over the sermon he had just preached her. She loved her boys and girls, but she had been accustomed to think of them as forty-five problems rather difficult to solve, not as so many opportunities. True, one might not talk religion during school-hours, but she could live it. Then the care she could exercise over their reading, their amusements, their ideals! It was her privilege to guide them through the dangerous years of adolescence and to make them immune from temptation.

"I have been blind as a bat," she said. "Bless that man for opening my eyes."

The opportunity to do really great deeds for the faith we profess is given to very few people. Instead, we are privileged to do the countless small things which make for character, the tiny acts of self-denial, the bearing and forbearing to which our Lord must have had reference when He bade one of old, "Take up thy cross and follow Me."

We know very little of the fisherman, Andrew, whom Christ called to be one of His twelve apostles, but there is one all-illuminating sentence in the Gospel of St. John which gives more of the real character of the man than a whole biography could. We are told that he first found his own brother.

Suppose he had been like so many Christians of to-day who find Christ but never mention the fact to their own households, who never speak of Him to those who are nearest them. Andrew did not go about hunting for some great work to do for our Lord. He told his brother who was close at hand.

In the Episcopal Church there is an organization of men and boys, known as the Brotherhood of St. Andrew. The obligations are the two so closely related, prayer and service. Each brotherhood man promises to try to get someone to attend church with him each Sunday in the year.

The story is told of a member who was

so engrossed in business during the week he had neglected to get his laundry. He that he forgot all about his promise until went around the corner to the little Sunday morning. He also discovered that Chinese laundry, and as he opened the

door the thought came to him, "Why not ask this Chinaman to go to church with you? Here is a missionary opportunity close at hand."

After a few moments' conversation, the laundryman promised to come, and occupied a seat in the brotherhood man's own pew.

He was made to feel that a welcome awaited him in his Father's house, and came each Sunday. After a little he was baptized, and finally he went back to China as a missionary.

Not every invitation to attend church will, of course, bring about such far-reaching results, but it should make us mindful of the opportunities for service which lie all about us.

God and Nature

By G. Henry

LOOKING out upon parched fields, we see nature; and as we look rain comes, and the thirsty ground drinks eagerly the rain-drops—and we see God: God has put nature to work helping nature keep green and bountiful and pleasing to the eye.

The sun rises: God. The sun sets: God. A fire-and-smoke mountain breaks into discordant roaring and breathes brimstone, and the earth trembles; perhaps the earth splits and a village or two disappear, and survivors wail and mourn for departed ones: nature at work, quite likely, to benefit millions in future ages, but for which a present few had to be temporarily sacrificed; nature working according to God's law.

A child is born, a pretty, helpless, innocent child, and a woman is mother, and more beautiful than any woman not blessed by maternity: God's supreme work here on earth, creating in His own image, breathing life into another of His children, to perpetuate His scheme and incidentally to bind closer together a man and a woman, for by the birth of their child shall they be made better and purer and holier.

A bird sings to awaken you in the early morn: God.

A cricket will sing you to sleep to-night: God.

You go out into the night and look at the myriads of stars, and if you see clearly you realize that these are others of God's worlds, compared to which this earth of ours is as a grain of sand on the sea-shore; and you are lost in wonderment at the immensity, the great power and greater goodness of God, who created all of these worlds on which we can be so happy if we will but obey His command.

And then a woman who has lived eighty years and worked and prayed for herself and hers lies down to pass into another world.

And the man who has worked and prayed with her gets on his knees by her side and he says, "Please, God, take me too when my day is come, for I would be with her—and You, if I am worthy."

And immediately he is happy and content to wait, for he has become personally acquainted with God and His works.

God's Place

By E. M. Rodebaugh

"DO SHOW me God," I cried, and walked beside my friend;
 "I wish to feel, to realize, to know, God's place with Man below."

We entered a cathedral vast,
 With gilded spires and minarets and dome
 And golden cross raised high in air.
 We watched the worshippers afar; God was not there.

Within a mosque we heard the prayers,
 Scented sweet incense floating there.
 We saw Him not.

A church we entered, organ tones
 With vibrant harmony did roll,
 Seizing the tender human soul to carry it aloft;
 Our senses it inspired with hope,
 But truth must still in darkness grope.
 It was not God.

We walked the country dark and drear.
 No stars shone forth.
 A blinding flash, a roar, a gleam;
 Two from the steely tracks were thrown.
 One stooped to bind the other's wounds,
 And God was there.

We stood within the tents of war,
 A sweet-faced angel flitted round;
 A drink of water here she passed,
 To speak kind comfort to the next,
 Writing a letter for a third.
 I looked; I dared not speak a word,
 For Christ walked by her side.

The city street with traffic filled,
 The cry of "Fire" our bosoms thrilled;
 We watched the run, the ladders high,
 Flame-clouds were mounting to the sky;
 There one appeared at window clear,
 Saving a life to someone dear,
 Losing his own—I looked again,
 Behold, it was the Christ.

We viewed an awful night of pain,
 Recurring and again, again;
 At last exhausted sinks to rest,
 The babe lies pillowed on her breast,
 The hovering wings of angels near,
 And Christ, aye Christ, is always there.

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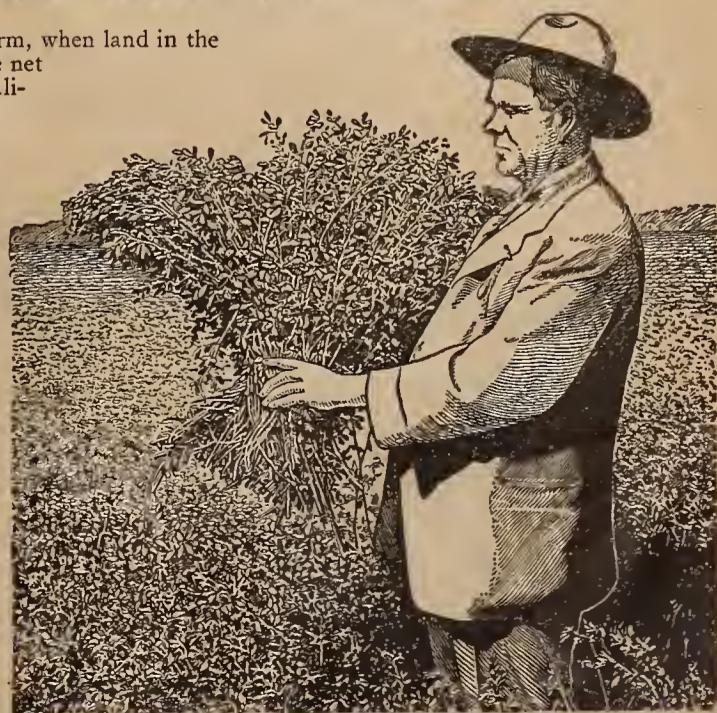
Alfalfa	\$ 60 to \$100	Lemons	\$150 to \$300
Almonds	80 to 100	Loganberries	150 to 300
Apples	100 to 300	Olive	100 to 200
Apricots	100 to 150	Oranges	200 to 400
Asparagus	100 to 250	Peaches	200 to 300
Beans	60 to 100	Pears	150 to 300
Blackberries	150 to 300	Plums	100 to 200
Cherries	150 to 300	Potatoes (Irish)	100 to 150
English Walnuts	125 to 300	Potatoes (Sweet)	100 to 150
Figs	100 to 200	Prunes	125 to 200
Grapes (Raisin)	80 to 150	Strawberries	200 to 300
Grapes (Table)	75 to 150	Sugar Beets	40 to 75
Grapes (Wine)	90 to 150	Tomatoes	100 to 150

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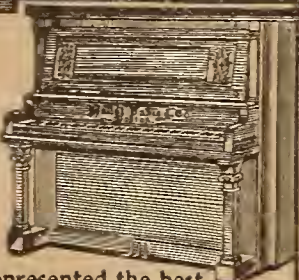


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Grace and I Hold High Festival

The Story of a Christmas Dinner—By Georgiana Curtis

WHEN Mr. and Mrs. Romney Worthington Sanderson promised to come to us for their Christmas dinner, Grace and I were delighted. You see, they had been with us for Thanksgiving, and everything had been so pleasant that we felt that their coming for Christmas, too, was a distinct triumph for the farm and our own home-cooking.

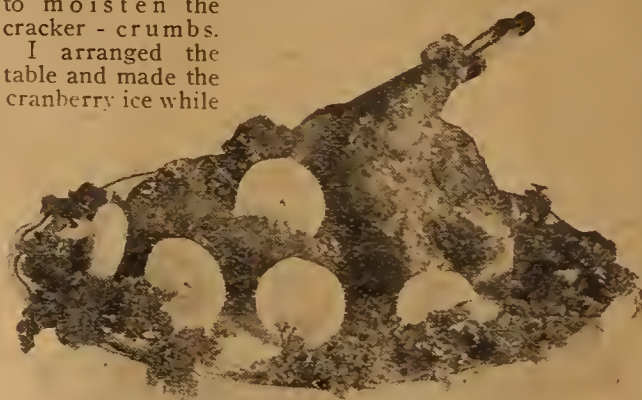
Again we determined, as far as possible, to use "home-grown" things. But this time we would have a feast. If Thanksgiving's meal had been simple, we would have as elaborate a dinner for Christmas as two women, with no kitchen help, could manage.

First of all, the dining-room table, covered with shining, satiny linen, was decorated with a tiny spruce-tree, not over a foot and a half tall, as a centerpiece. On this tree were hung tiny red glass balls, such as may be bought for ten cents a dozen and which are sold for tree-decorating purposes. A star of silver paper surmounted our tree. At the base of the tree was a mound of crumpled red and green crepe paper, plentifully frosted with mica. It made a lovely centerpiece.

At each place were beautifully laundered napkins, placed between the knives on one side, and the forks

fuls of oysters. She added the salt, pepper and butter to the cracker-crumbs, then added oysters and lemon-juice, and enough of the liquid from the oysters to moisten the cracker-crumbs.

I arranged the table and made the cranberry ice while



The turkey, about which the feast was built

Grace pared the potatoes and prepared the cauliflower. The cauliflower was put on the stove in salt water and cooked until it was tender.

For the ice I used four cupfuls of water, two cupfuls of sugar and two cupfuls of cranberry-juice. I boiled the water and sugar for fifteen minutes, then added the cranberry-juice. I let this cool before I strained it, then froze it.

Grace made the corn soufflé while I made the salad. She used two cans of corn (we had put it up ourselves), one cupful of crackers finely rolled, three eggs, salt and pepper, one pint of rich milk and one-half cupful of butter. The yolks and whites of the eggs were beaten separately. The corn, crackers, eggs and milk, together with the seasoning, were mixed together, with pieces of butter added. The time required for baking this was about half an hour.

For the salad I used about half a dozen Grimes' Golden apples, pared, cored and cut into rather small pieces; one small bunch of celery, cut up; one pound of white grapes, seeded and cut in two; ten cents' worth of peanuts hulled and rolled finely, and mayonnaise dressing.

Meanwhile I had been taking turns at basting the turkey, and Grace had made the hard sauce for the plum pudding. She creamed one-half cupful of butter with one cupful of powdered sugar. The cauliflower was drained when cooked, and Grace made the sauce for it while I made the tomato soup and mashed the potatoes. For the cauliflower sauce she melted three tablespoonfuls of

butter; into this she browned one tablespoonful of flour and added one-half pint of cream. This was delicious. For the tomato soup I used one pint of tomatoes, one-fourth teaspoonful of soda, one tablespoonful of sugar,



The salad, a triumph of art

one quart of milk and cream mixed, one slice of onion, three tablespoonfuls of flour, one teaspoonful of salt, one-eighth teaspoonful of pepper, one-third cupful of butter. I scalded the milk and onion, then added the flour, which had been mixed with cold water. The tomatoes and sugar were cooked together, the soda added to them. Then the two mixtures were combined, and the salt, pepper and butter added.

When Grace finished the cauliflower, she made the gravy, and then I made the coffee. The heart, liver and gizzard had been cooked separately, and the stock saved. The giblets were chopped finely. When the turkey was done we made our gravy, using the stock and giblets.

"That was a dinner," said Mr. Sanderson, beaming at us, as he swallowed the last portion of plum pudding on his plate. "It beats me how good everything tastes. Why, we buy the best of everything, yet the things down here are so good— Do you know, I was going to invite you all up for New Year's dinner and the opera, but if I could just come down here for one more dinner!"

"No, indeed!" interrupted his wife. "We'll have them up for New Year's, but Romney's birthday is February fifteenth," and she glanced at us in a merry sort of way.

"Oh, do come," said Grace, "and we will show you a between-season dinner." And they are coming.



The corn souffle, a perfect dish

and spoons on the other. On each napkin lay a tiny bouquet of holly and mistletoe, tied with green-and-red baby ribbon. Indeed, the dining-room was so suggestive of Christmas that a blind man, most, could sense it. The

low buffet had two brass bowls filled with holly and mistletoe, and all the scarlet geraniums we could bribe into blossoming by means of heat, warmth and sunshine, were blooming on the two window-ledges. Grace had a new green dress, and I had an old red one (which did very well with a new guimpe), and each of us, almost enveloped in a huge white apron, helped along the white-and-green-and-red color-scheme.

Of course, we divided our work just as we did for our Thanksgiving dinner. Our mince-meat had been made the week before. We used three pounds of boiled beef, one pound of suet, three pounds of brown sugar, one-half peck of apples, two pounds of raisins, one pound of currants, one-half pound of citron, one grated nutmeg, five cents' worth of powdered mace, and allspice and cinnamon. We put the beef, suet and apples through a food-chopper, then added the seasoning. The allspice and cinnamon we put in until it suited our taste. The citron was sliced very thin and added to the mixture. Then enough sweet cider was used to make a thick batter. The mince-meat was thoroughly heated and set aside until we were ready to use it. Grace made the pies the day before Christmas.

I made the noble plum pudding, for without it our Christmas dinner would be incomplete. For this I used nine eggs, one pound of sugar, one pound of chopped suet, one pound of seeded raisins, one pound of dried currants, one-fourth pound of dried citron, one pound of flour, one tablespoonful of mixed spice. I beat the eggs, added the sugar, then the suet, then the rest of the ingredients, adding sufficient milk to mix it quite stiff. I took a square of strong white cloth, turned the pudding into this, tied it securely and put it into a kettle of boiling water. It required between five and six hours to boil it. This I made the day before and heated it in the oven for dinner Christmas day.

Christmas morning we were quite busy, for preparing a Christmas dinner is no small task. But with our pies, plum pudding and bread all made, we felt that we had



The plum pudding, proper ending of a feast

a good start. Our turkey was almost the same size as the one we had for Thanksgiving (ten pounds) and took about as long to roast. Grace made the oyster stuffing, using two cupfuls of cracker-crumbs, one cupful of melted butter, one teaspoonful of lemon-juice, two cup-

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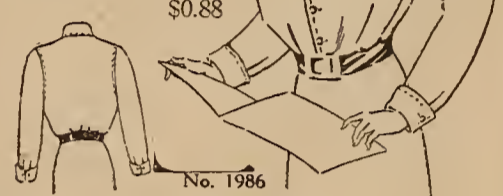


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- \$0.66**

\$2.00 Waist for 88c

THIS shirt-waist of Scotch flannel could not be bought in the shops for less than \$2.00. With a WOMAN'S HOME COMPANION pattern, good Scotch flannel and a few nice pearl buttons you can easily make it for 88 cents.

- Flannel Waist
- 2 1/2 yds. flannel, 36 in. wide, at 27c..\$0.68
 - 1 doz. pearl buttons .10
 - 1 WOMAN'S HOME COMPANION pattern10
- \$0.88**



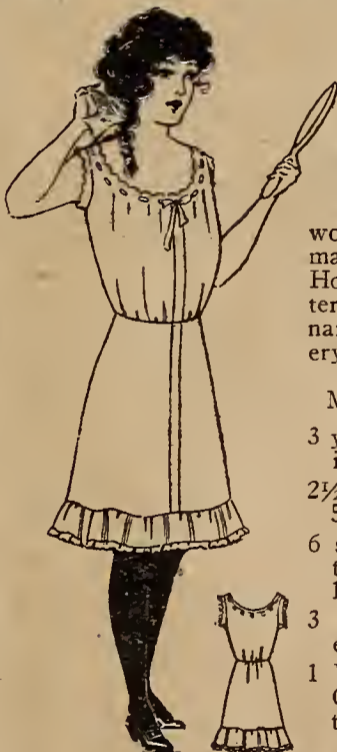
\$2.75 Waist for \$1.06



THIS white madras waist, including satin collar, would cost in the shops \$2.75. You can make it with a WOMAN'S HOME COMPANION pattern for \$1.06.

- Madras Waist
- 3 1/2 yds. madras, 36 in. wide, at 15c..\$0.47
 - 1/4 yd. satin, at 59c15
 - 34 small pearl buttons, per doz., 12c..... .34
 - 1 WOMAN'S HOME COMPANION pattern10
- \$1.06**

\$2.00 Combination for 76c



A DAINTY combination of fine nainsook which will appeal to every young girl, and in the shops would cost \$2.00, can be made with a WOMAN'S HOME COMPANION pattern, a few yards of nainsook and embroidery-cotton for 76 cents.

- Misses' Combination
- 3 yds. nainsook, 40 in. wide, at 15c..\$0.45
 - 2 1/2 yds. ribbon, at 5c13
 - 6 small pearl buttons, per doz., 10c05
 - 3 skeins embroidery-cotton, at 1c .03
 - 1 WOMAN'S HOME COMPANION pattern10
- \$0.76**

\$5.00 Child's Dress for \$1.80



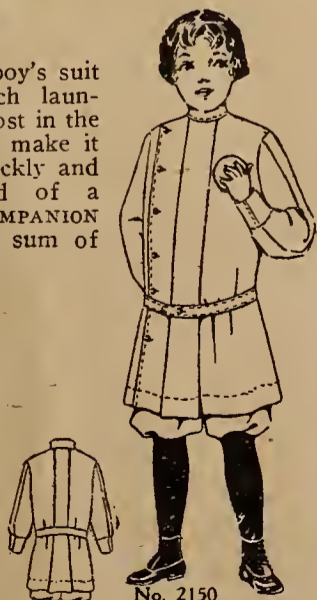
ARE you interested in a school dress for your little girl? This is one of the new winter models for the little girl. Developed in blue serge and trimmed with black satin, it would cost you in the shops \$5.00, while with a WOMAN'S HOME COMPANION pattern you can make it for \$1.80.

- Child's Dress
- 1 7/8 yds. serge, 50 inches wide, at 59c\$1.11
 - 1 yd. satin..... .59
 - 1 WOMAN'S HOME COMPANION pattern .10
- \$1.80**

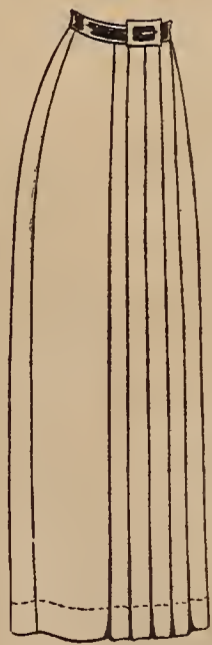
\$1.89 Boy's Suit for 88c

THIS good-looking boy's suit of galatea which launders perfectly would cost in the shops \$1.89. You can make it in any color, both quickly and easily, with the aid of a WOMAN'S HOME COMPANION pattern for the small sum of 88 cents.

- Boy's Suit
- 4 1/4 yds. of galatea, 24 in. wide, at 16c..\$0.68
 - 8 pearl buttons, per doz., at 15c10
 - 1 WOMAN'S HOME COMPANION pattern10
- \$0.88**



\$5.00 Skirt for \$3.20



IN BLACK, or a dark shade of blue, green or brown, the separate skirt of a soft wool mixture is indispensable to every woman. This skirt in the shops would cost you \$5.00, but with a WOMAN'S HOME COMPANION pattern you can make it for \$3.20.

- Separate Skirt
- 5 1/4 yds. wool mixture, 36 inches wide, at 59c....\$3.10
 - 1 WOMAN'S HOME COMPANION pattern10
- \$3.20**

- No. 2143—One-Piece Dress. 32 to 46 inch bust.
- No. 2154—Tucked Waist with Robespierre Collar. 32 to 42 inch bust.
- No. 2150—Double-Breasted Suit. 2 to 6 years.
- No. 2079—Wrapper Buttoned in Front. 32 to 46 inch bust.
- No. 1947—Misses' Combination: Corset-Cover and Petticoat. 12 to 16 years.
- No. 1986—Tailored Waist with Large Armholes. 32 to 44 inch bust.
- No. 2177—School Dress with Front Panel. 6 to 12 year sizes.
- No. 2119—Gored Skirt: Plaited Panels. 22 to 34 inch waist.

Order Patterns from Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado



LAST CHANCE FOR A CHRISTMAS BOX

YOUR last chance to get one of the big Christmas Surprise Boxes we have for you. Every article in this big collection has been especially designed for our FARM AND FIRESIDE folk, and is something you will need during the Christmas season. The illustration can only give you a slight idea of all the handsome and exquisite articles in your Christmas Surprise Box. You will surely think this is the greatest gift of all FARM AND FIRESIDE presents.

100 SURPRISES IN A BEAUTIFUL HOLLY BOX

THERE are one hundred different articles in each Surprise Box. Here are some of the things that you will find—twenty-five beautiful Christmas and New Year post-cards, the very finest and most exquisite designs and colorings. Besides post-cards you will find many special dainty Christmas Gift Cards, dozens of Santa Claus seals for you to stick on your Christmas packages, tags, stamps, stickers and many other articles, all of which will add decidedly to the spirit of the Holiday season.

1913 Calendar

EACH Christmas Box contains a pretty and artistic 1913 panel calendar. This is the daintiest calendar we have ever seen. It is panel shape, 16 inches long and 4 inches wide and printed in ten different colors. This calendar is exceedingly pretty and unique and will look very ornamental on the walls of your parlor or living-room. Remember, this calendar is included in your Christmas Box Collection.

Great Christmas Offers

Offer No. 1. Send \$1.00 for the renewal of your subscription to FARM AND FIRESIDE three years—78 numbers. You will receive our Christmas Box, all charges prepaid.

Offer No. 2. Send 50 cents for a one-year subscription to FARM AND FIRESIDE—26 numbers. You will receive our Christmas Surprise Box, all charges prepaid.

Offer No. 3. Send 80 cents for two different yearly subscriptions to FARM AND FIRESIDE at 40 cents each. One of these subscriptions may be your own. You will receive this Christmas Surprise Box as special reward.

No more boxes will be sent out after Dec. 20th.

FARM AND FIRESIDE, SPRINGFIELD, OHIO



A Christmas Gift

That Involves Some New and Fascinating Ideas

By Georgina C. Davis

FOR an attractive and inexpensive dresser-set including a washstand-cover, we think our design will appeal to the majority of our readers. The set is composed of a dresser-cover, washstand-cover and pincushion to match, the latter being filled with lambs' wool, which is a great improvement on the old-fashioned bran or sawdust filling, inasmuch as the cushion is much lighter and much easier to handle in the making and forming. Another important feature is the fact that pins or needles do not rust in a lambs' wool cushion.

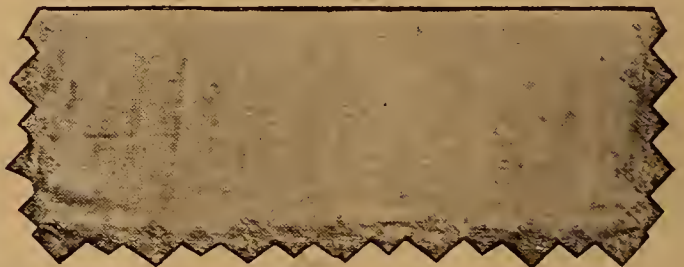


A new sort of pincushion

The material required for the set as shown in the design is one and one-half yards of cream cotton voile, one yard wide; two and one-half yards of silkline (pale blue), twenty inches wide; four and one-half yards of medallion lace (cream-colored) for outer edges, ends and the top of the cushion; one spool pale-blue washable crochet silk; one spool of white sewing-cotton; lambs' wool sufficient to fill cushion; four yards of light-blue baby ribbon, and one yard of cream lace, one inch wide, for edge of cushion.



Bureau and washstand covers



and treat in the same way. In the design the lace medallions used have holes in the center, in each of which is worked a spider-web of the blue washable silk. These spider-webs are worked by crossing the threads from side to side, and from the intersection of these threads darning around until the size required is made. The covers are then lined with the silkline. A light-colored lawn or other material may be used as a substitute for this lining. Wash materials are best, however.

The pincushion is made by cutting two circular pieces of China silk about ten inches in diameter. Join these pieces of silk together to form a bag, which can be filled with the lambs' wool to form a cushion somewhat flat. An inside bag of the same size is made of the silkline or any other light-weight blue material. This is done to give a prettier shade of blue over the white lambs' wool. Divide the cushion into four sections by stitching through the center of the cushion with a strand of the washable silk, carrying the thread over the edge of the cushion to the center on the lower side, bringing needle through to the top side and drawing slightly tight. Repeat this by putting the threads at equal distances from each other until the cushion is divided into four equal sections. Then arrange four of the medallions on the top of the cushion, and work the spider-webs in the holes of medallions same as on the covers. Gather the narrow lace, and sew around the cushion seam where it is joined together.

A Needle-Book for a Christmas Gift

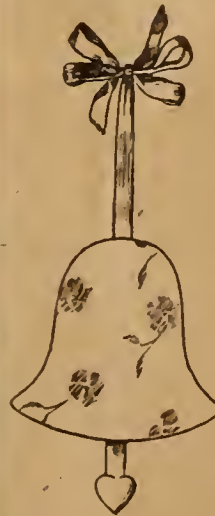
By Pearle White McCowan

THIS little Christmas-bell needle-book, besides being useful, is one of the daintiest little gifts imaginable. To make it, cover two bell-shaped pieces of cardboard, about four and a half or five inches long and of a corresponding width, with any pretty light-colored, flowered ribbon or silk. Fit these two covered pieces together, and overcast the edges very neatly with silk thread, all up and down both sides, leaving the bottoms free, and also a little three-quarter-inch space just in the center at the top.

Next cut three or four pieces of white or cream-colored flannel, a size smaller than the bell already made, and buttonhole edges with silk or mercerized thread. One of the charms of this little gift is the practical use it affords for odd bits of silk, satin and messaline, too pretty to discard and too small for any larger undertaking. The pictured needle-book was covered with white taffeta on which

was a flower spray in pink and green. The ribbon rosette was a pretty dark green.

Procure a little silken heart-shaped emery (these may be purchased at any dry-goods store or bazaar), and sew it to one end of a half-yard of No. 2 ribbon, matching in color the covering of bell. A couple of inches above the emery sew the leaves fast (the back one all up and down its length), and slip the long end of ribbon up through the bell and out of the little opening left at the top, gently drawing the leaves of the booklet up inside the bell. A little bow with a brass ring at its back, by which to hang the trinket, completes the gift, and one has but to pull the clapper (that is, the heart-shaped emery bag) to draw the leaves down where they are easily accessible, or pull the bow, and they will slip up inside where they are quite covered from view.



The Gift Club

For All Farm and Fireside Girls

Conducted by
Jean West, Secretary

IT'S almost time to wish you a Merry Christmas, my dear Gift Club girls! And what a Merry Christmas it will be, indeed, for through the Club we have all of us earned so many beautiful gifts for our dear ones. Christmas seems so different if we are able to remember all our friends, doesn't it?

I wish that I could pay each of you a little personal call on Christmas morning and tell you how glad I am that you are a member of our big Gift Club, and that I hope you will do even bigger and better things in 1913 than in 1912.

It does seem so wonderful to me to watch the growth of our Club! We started, you remember, with just a handful of members a little over a year ago, but since then! My, what seven-league strides we have made! And I do think it is astonishingly generous of our editor to let me have this Club for you here in FARM AND FIRESIDE and to offer you so many splendid gifts which cost you nothing! But you see he has the best interests of all our FARM AND FIRESIDE readers at heart, and he agrees with me that The Gift Club fills an important need in our big family.

I've had to enlarge my Gift Cupboard to hold all the new treasures that I have been gathering for you from all corners of our country. I just wish you could see all the lovely things that I have in store for you Gift Club girls. There are shelves of new and fascinating books,—how I wish that I had time to steal away to some quiet nook and read them all! And there are dainty silver mesh bags and crisp, fresh lace curtains, lovely china dinner-sets and beautiful, shining silver. Next to them, if you could peek into my Cupboard, you would find exquisite gold rings and bracelets, lockets and chains and the prettiest brooches you ever looked at! I've all sorts of things for little boys and girls, too, in my Gift Cupboard—air-rifles, kodaks, dolls and toys of all kinds. To tell you the truth, there is something for every member of the family in this Cupboard of mine, and you need never puzzle about birthday or anniversary gifts so long as our Club is in existence.

You'll be interested, I know, in reading letters from a few of our most successful Club members. This one comes from a little Gift Club girl in Michigan:

DEAR JEAN WEST: The lovely pearl ring reached me safely, and I think it's the prettiest ring I ever saw! Pearl is my birthstone, and I never had a pearl ring before. B. M.

And here's another:

DEAR MISS WEST: To say I'm delighted with my Gift Club prizes is not saying half. I have never heard of such a lovely Club as The Gift Club, and I just wish that every girl in the United States could have every one of the beautiful gifts in your Cupboard! Lovingly, DORA M. NEILL.

Now read this:

I can hardly realize that I have earned that ruby ring, dear Miss West! You can't imagine how I've longed for it and hoped that I might get it, and now at last it's coming! Thank you a thousand times! The locket and chain that you sent me a month ago is just lovely! All my girl friends are wild to know where I got it. Long live The Gift Club and its secretary! MAY F. L.

From a little town in the Far West comes this bright note:

DEAR MISS JEAN: It certainly was the happiest day of my life when I discovered The Gift Club! Such wonderful things have been happening to me ever since! I do believe that you are a good-luck fairy and that all you do is to wave a wand when you want something particularly nice to happen. First of all, you sent me that charming little picture of the Venetian scene, next the

box of monogrammed stationery, then that darling manicure-set and the lovely enameled belt-pin, and now, best of all, comes the gold bracelet that I've wanted all my life! Nothing in the world could induce me to give up The Gift Club. It grows better and has more surprises all the time. NELLIE W.

Do read the following letter. You'll be interested because, perhaps, you have felt just the same way about the Club.

The first time I read about The Gift Club I made up my mind that it simply couldn't be true—that it would be impossible for anybody to give away so many beautiful gifts. But I was fascinated and kept on reading your articles, but still with much doubt in my heart. At last I made up my mind to find out all about it, and so I wrote you. And how glad I am now that I obeyed that impulse! Nobody could have been more skeptical than I about the Club at first, but now I am one of the most enthusiastic members! Count me a member as long as the Club lasts! It's simply great.

The Gift Club, one of the regular important departments of FARM AND FIRESIDE, was organized a year ago to supply a way for our readers to earn the dainty little things for their homes and themselves which they cannot afford to buy. I know just what it is to wish for the little luxuries of life, and I know, too, what it means to have only a slim purse to gratify those wishes! If there had been a Gift Club like this one of ours in existence when I was a girl, I would certainly have been a charter member!

To be sure, there is a little work that you must do to receive our beautiful gifts, but this work is just what makes the Club so interesting. It's always jolly fun to get a thing that we have earned through our own efforts, isn't it? You will not, however, have to spend a single penny to get started in The Gift Club work or at any time thereafter! I want to make this very plain. Here is a letter from one of our married "girls" who last year earned Christmas presents for her whole family through The Gift Club. I have saved it for nearly a year to show you.

I must thank The Gift Club for the happiest Christmas that I have had for many years! I surprised my husband and the children by being a regular Santa Claus on Christmas morning. They did not know a thing about our splendid Gift Club and wondered how I managed to get all those lovely presents for them. My sister Florence was delighted with the bracelet, and so was Nellie with the ruby ring. She has wanted one ever since she was a little girl. I gave the seal hand-bag to my niece who spent Christmas with us, and I just wish you could have seen her delight! Little John was wild over his drum, and his baby sister has scarcely had her dolly out of her arms since Christmas. If you only knew what a godsend this Gift Club has been to me, you would be glad that you started it! I can tell you that this family would not have been anywhere near so happy at Christmas if it hadn't been for The Gift Club. Next year I'm going to get my children gifts from the Club too.

There is still room in our Gift Club for more members. There are no dues or expenses of any kind, and the work that our Club girls do to earn all our magnificent gifts is very simple and delightful. Any girl can do it, and it does not take any previous training, either. Did I say that married "girls" are welcome in the Club, too? I'll be glad to send you our Gift Club booklet if you will write for it. A line on a postal card will do.

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Jean West
Secretary, The Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.



"The locket and chain that you sent me a month ago is just lovely! All my girl friends are wild to know where I got it"

Books Old and New

By Sidney Morris

ARE you going to give books to some of your friends and relatives? And would some lists suitable for their various and varied tastes help you a bit? Here are a few, arranged for your convenience.

If you wish any or all of these books, an order to a publisher or a book-store will be sufficient. It really isn't necessary to send direct to the publishers of that certain book. Any bookseller will be glad to have your order. Also any of the large department-stores or mail-order houses will send you books, if you so desire.

For the Literary Member

- Adventures in Contentment.....By David Grayson
- Poems of Country Life.....Edited by George S. Bryan
- Poems.....By Sidney Lanier
- How to Live on Twenty-Four Hours a Day.....By Arnold Bennett
- The Blue Bird.....By Maurice Maeterlinck
- The Playboy of the Western World.....By J. M. Synge
- Marriage.....By H. G. Wells
- Cabbages and Kings.....By O. Henry
- A Certain Rich Man.....By William Allen White

For the One Who Loves the Classics

- The French Revolution..By Thomas Carlyle
- The Essays of Elia.....By Charles Lamb
- Romola.....By George Eliot
- Vanity Fair.....By William Makepeace Thackeray
- David Copperfield.....By Charles Dickens
- Lorna Doone.....By R. D. Blackmore
- Essays.....By Lord Macaulay
- Poems.....By Matthew Arnold
- The Tragedy of King Lear.....By William Shakespeare
- Diana of the Crossways..By George Meredith

For the Boy Under Sixteen

- With the Indians in the Rockies.....By James Willard Schultz
- The Young Minute-Man of 1812.....By Everett T. Tomlinson
- The Captain of the Nine.....By William Heyliger
- Hike and the Aeroplane..By Tom Graham
- Track's End.....By Hayden Carruth
- Pluck on the Long Trail..By Edwin L. Sabin
- The Boy Electricians as Detectives.....By Edwin J. Houston
- Crofton Chums...By Ralph Henry Barbour
- Jim Davis.....By John Mascfield
- The Boy Scouts of Bob's Hill.....By Charles Pierce Burton

For the Girl Under Sixteen

- The Lucky Sixpence.....By Emilie Benson Knipe and Alden Arthur Knipe
- Curiosity Kate.....By Florence Bone
- Every-Day Susan.....By Mary F. Leonard
- Sue Jane.....By Maria Thompson Daviess
- How Phoebe Found Herself.....By Helen Dawes Brown
- Nora-Square-Accounts.....By Fanny L. McKinney
- Little Women.....By Louisa M. Alcott
- Alice in Wonderland...By Lewis M. Carroll
- Through the Looking-Glass.....By Lewis M. Carroll
- The Beetle Goes on His Travels.....By Hans Christian Andersen

For the Housewife

- Canning and Preserving....By S. T. Rorer
- Home Candy-Making.....By S. T. Rorer
- Practical Cooking and Serving.....By Janet McKenzie Hill
- The Fireless Cook Book.....By Margaret J. Mitchell
- The Boston Cooking School Cook Book.....By F. M. Farmer
- Standard Paper Bag Cookery.....By P. T. Barnes
- House Plants and How to Grow Them..By P. T. Barnes
- Leftovers Made Palatable.....By Isabel Gordon Curtis
- Home Nurse's Handbook of Practical Nursing.....By Charlotte A. Aikens
- Soyer's Paper Bag Cooking.....By Nicholas Soyer

For the Agriculturist

- The Business of Dairying.....By Clarence B. Lane
- Breeding and the Mendelian Discovery..By A. D. Darbishire
- The Cereals in America..By Thomas F. Hunt
- The Horse, His Breeding, Care and Use.....By David Buffum
- Familiar Trees and Their Leaves.....By F. S. Mathews
- Insects and Insecticides.....By Clarence M. Weed
- Farm Accounts.....By J. A. Vye
- Practical Farm Drainage...By C. A. Elliott
- Home Floriculture.....By Eben E. Rexford
- Barn Plans and Outbuildings.....By E. C. Powell

Children's Books

- The Fairies and the Christmas Child..By Lillian Gask
- Donald in Scotland.....By Etta Blaisdell McDonald and Julia Dalrymple
- Frank and Bessie's Forester.....By Alice Lounsberry
- Their City Christmas.....By Abbie Farwell Brown
- Nixie Bunny in Manners-Land.....By Joseph C. Sindelar
- Legends of Our Little Brothers.....By Lillian Gask
- The Bunnikins-Bunnies and the Moon King.....By Edith Davidson
- Wonder Tales of Old Japan.....By Alan Leslie Whitehorn
- The Beard Birds.....By Adelia Belle Beard
- Billy Poptun.....By Milo Winter

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—Martha E. Bare, Harper, Kan. (portrait)

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"Trimming" the Xmas Tree
By Annie L. Sheperd

When the Christmas dinner's done,
Here's the way to have some fun.

BOYS, if you want to help sister get ready for some after-dinner Christmas fun, see if you can find a tiny cedar in the woods, about two feet high. Securely fasten it so it may be set upon a stand or table. An artificial tree is good, also. The size of the tree is determined by the amount of "trimming" used.

Each one of the company may put on one article. Hand to each one, for the answers, a sheet of paper cut out and shaped like a Christmas tree, colored with wax crayon or water-color, or else give them a plain page bearing a tiny tree drawn in one corner.

Number each sheet according to questions used. A "reader" may describe each gift, and only the gift name need be recorded, or each sheet may bear in full all of the descriptive sentences, leaving a space for the name to be placed in it.

Limit the time for the "trimming" to fifteen minutes, or less. As the "reader" describes, each guest places his gift (answer) upon the tree. This gift, with all others, is conveniently hidden from the remainder of the guests.

If no "reader" is indicated, let each guest in turn read (place) the gifts.

Or, the older folks, only, may write and the children trim.

A cane, candy ring or toy could be given as a "Christmas treat," for best answers.

The "Trimmings"

1. Star (The Wise Men's Guide).
 2. Tinsel (Rope of silvery light).
 3. Pop-corn (Grew in the field, but loves the fire).
 4. Candles (The parlor light of olden days).
 5. Canes (Staff of old age).
 6. Apples (William Tell's target).
 7. Nuts (Jack Frost's crop).
 8. Doll (A little girl's idol).
 9. Book (A student's love).
 10. Kerchief (A pocket's "chief" content).
 11. Horn (Little Boy Blue's musical instrument).
 12. Drum (The fife's companion).
 13. Knife (A sharp fellow).
 14. Ring (Love's pledge for a bride).
- The "trimmings" may be increased at pleasure.

How One Girl Managed

By Helen Blair

THERE is a young girl among my acquaintances who likes to remember her friends at Christmas. "Pshaw," say you, "there's nothing unique in that."

But she has only, on an average, twenty-five cents to spend on each one of them. "Pshaw," say you again, "many of us are as pinched, and it's a pretty poor gift you can buy for twenty-five cents."

Well, it's just for such people who believe that, that this article is written.

You see, there are loads and loads of really worthy things to be bought for twenty-five cents or less. Let me tell you what this girl discovered in doing her Christmas shopping.

In one shop she discovered that four large pieces of sandal-wood, prettily wrapped in Oriental paper and tyings, were to be had for a quarter of a dollar. And such a packet is sufficient to scent four bureau drawers for a life-time.

Then, on a shelf in the pantry there were glasses of a certain irreproachable brand of currant jelly. A glass of this jelly, wrapped, tagged and properly holly-sprayed, was sufficiently Christmasy to make it an appropriate gift.

To a business friend in the city who always prepares her own lunch in her tiny stenographic office, she sent a jar of an orange marmalade made from a famous recipe. The marmalade jar in red tissue paper, red tyings and wearing a spray of holly over one ear, was a sight to delight anyone who believes in Christmas gifts.

A friend in California who hadn't seen the giver for two years, received a tiny sterling silver frame containing a kodaked head of the giver. The silver frame was two inches high and cost twenty-five cents.

There was one girl friend about to be married, and her trousseau was her principal thought. She was sent a silver ribbon needle, intended to thread blue, white, pink, yellow or green ribbons in the beading of the wonderful hand-worked lingerie of the trousseau. This ribbon needle cost fifteen cents.

You see, every present was selected with a view to the personality of the owner-to-be. Every one was useful. Remember, there are useful luxuries as well as useful necessities. But, as soon as a gift becomes a useless luxury, then it is not worth the name of a gift. And it's not the money value, but the generous, friendly thought value behind it that makes it worth while.



OUR YOUNG FOLKS' DEPARTMENT

CONDUCTED BY COUSIN SALLY



Christmas Toys

That May be Made by Cousin Sally's Girls and Boys

By Virginia B. Jacobs



Here's a fairy for your Christmas tree. Any boy or girl can make one



The fashion page of Farm and Fireside furnishes the picture, and tissue paper, the skirt



Here are colored balls to hang from the Christmas-tree boughs



Here's a lovely infant whose face is surely that of Dotty Dimple. Someone cut her out of a Farm and Fireside page



Here's a cute youngster, ready to smile at you from the Christmas tree—and he never cries nor fusses nor wants amusing



Here are a photograph or picture frame and a match-scratch that will make lovely gifts



In a row are a shaving paper rosette, a home-made moving-picture show, a Santa Claus (who lives on a talcum box), a peep-show, a penwiper and a fan. And you can make every one of these toys yourself



Here are four ornaments to hold candy, pop-corn or nuts



A string of colored balls, and made of paper, too



A Santa Claus you can make at home. Isn't he cute?

DEAR COUSINS—Here are toys that you can make at home! I know you can because a well-known kindergartner has arranged them with the help of lots of tiny boys and girls. All you'll need will be the bits of paper, lace, string and colored material you can find at home. You'll need some flour-and-water paste, and the pages of Farm and Fireside will provide you with all the pictures you'll need. Get busy now and you'll have some lovely Christmas toys.

PERHAPS you'll be able to make all these pretty things yourself. But if you want help, send me four cents in stamps, and I'll send you full directions for making them, besides eighteen diagrams showing you just what to do. Perhaps your teachers or parents will want to make some, too. Address all your letters to Virginia B. Jacobs, care of Farm and Fireside, Springfield, Ohio. And don't forget the stamps. Affectionately, COUSIN SALLY.

When You Send Your Christmas Gifts

By Catherine Farmer Peck-Wylde

IT IS the second week in December. Let us assume that you have made your list early and that practically all your shopping is over except the buying of the Christmas greens, the fresh candies and other goodies which most of us like to make one last plunge into the very human holiday crowd to procure. This is the first year you have really done it, and, as you sit back in your chair and survey the table loaded with gifts, you sigh happily. You think you are through, but you are not. You are only half done, my dear.

Have you never heard a well-meaning but tactless, blundering person try to convey some sentiment to a friend? Where was the trouble? Not with the intention or the thought, but in the manner in which it was expressed; in other words, in its dress. Did you ever receive a Christmas gift that, in spite of the thought it showed, did not impress you very pleasantly at first? Was it the gift itself? Possibly, but more likely it was its dress. You have given thought to each gift, but you still have it in your power to determine the atmosphere of its reception.

I shall never forget two gifts that came to me by the same mail: The larger package had come but a short distance, and yet its string was slipped over one corner and had not a thoughtful mailing-clerk tied it with twine it is more than probable that it would have found its way to the Division of Dead Letters. The address was none too legible, there was no inner wrapping, nothing save a hastily scribbled "Merry Xmas" to indicate the sentiments or the giver and, although the remembrance was a costly one, it sent a chill to my heart. The other parcel, which had come from clear across the continent, had been mailed with due allowance for the time it would take to reach me before the holiday. The package was neatly covered, and the cords tightened and reinforced, making a neat, compact parcel. My address was unmistakable; in one corner was the name of the sender, in another a gay little Santa Claus sticker. When the outer wrapper was removed, there showed a second wrapper of white tissue paper, tied with red and green ribbon, and affixed to this was a holly tag bearing my name and address as a further precaution. Unnecessarily careful, did you say? If you had witnessed, as I have witnessed, mail-pouches dumped on the mailing-table and had seen packages burst open and addresses gone, you would realize that any gift that is worth mailing is worth sending out prepared to withstand the rough handling necessarily attendant upon the holiday rush and confusion. My second present had been thus prepared. Within was a dainty little jabot (exactly the shade of my new suit) and a personal greeting from the sender. Hand-work, to be sure, had been put upon the present, but the bit of linen and embroidery cotton used upon it had not cost more than five cents, yet the gift went straight to my heart. Not only the making but the sending had been a labor of love.

Now my little lecture is over shall we return to your gifts? Before another sun has set provide yourself with twice as much white tissue paper as you think you shall need, several boxes of wafers, tags, stickers and fastenings. Do not forget the Red Cross stamps costing one cent each. They do not pay postage, but the receipts from their sale help to fight the white plague. The holly ribbon is always pretty, although the red or the green is somewhat cheaper. The silver and gold cords are newer, but newest of all is the gummed paper ribbon. This comes on a spool and, besides being inexpensive, is easily adjusted and perfectly secure.

Every year brings dozens of cords and ribbons, and it is one of my little economies to press these and tuck them into my Christmas drawer—for I really have one!

The holly boxes can be had in almost every size and shape and, besides being a great protection, give shapeliness to your package. For photographs buy the heaviest cardboard; for engravings, etc., mailing-tubes are best. All book-stores carry corner-protectors to use in mailing books.

No matter how well they are wrapped, it is very risky to send glass or china by mail; express is better, but when there is such unlimited variety why not select something unbreakable?

The outside wrapping should be of very heavy paper. Put the name and address in several different places, and your own in one corner. Use stout cord, and tie securely. Red raffia looks "Christmasy."

Valuable packages should always be registered, which costs but ten cents in addition to the regular postage. If the article is prepaid at first-class rates (two cents per ounce or fraction thereof), the Government will pay to the sender, in case of its loss, full value not exceeding fifty dollars. During 1910 but three hundred and thirty-eight out of a total of sixteen million letters and parcels registered were lost. Registered mail travels more slowly than ordinary mail, so allowance must be made.

If one has accurate scales and is familiar with the rates of postage, time can be saved by weighing and stamping it at home.

It is astonishing, however, how few people do know the postage rates and regulations. There are four classes of mailing matter: the first class comprises all matter sealed against inspection or containing writing. If your package is sealed, it is first-class matter, although it may contain no more writing than the few words of greeting permitted by law in any package. The rate for this class is two cents per ounce or fraction.

The second class is a class for publishers.

The third class comprises all printed matter; that is, books, circulars, prints and proof-sheets, also photographs. The rate is one cent for every two ounces or fraction.

The fourth class is called "merchandise" and takes in all not included in the first three classes. The rate is one cent per ounce or fraction thereof, but the package must not weigh over four pounds.

Write the class of the contents upon the outside of the package.

A great deal has been said and written of late years about the overworked clerks, and this has started a much-needed trend toward early shopping, but my plea is for the post-office employees (in whose ranks I once worked), the mailing-clerks and



"Provide . . . tissue paper, wafers, tags, stickers . . ."

the postman. No one has a right to a "Merry Christmas" who, by thoughtlessness and procrastination, has prevented someone else from having one.

During the fiscal year ending June 30, 1911, there were received at the Division of Dead Letters 13,614,416 pieces of mail matter, of which 6,769,608 pieces were restored to the owners. For the same period there were received 340,298 parcels, including 64,993 articles found loose in the mails and 40,393 posted in foreign countries, and consequently returned there for disposal. Of the 249,725 parcels posted in the United States for delivery therein which were sent to the Division of Dead Letters during that period, 66,764, or twenty-six per cent., were delivered to the owners.

If your package is lost, do not fail to write to the Division of Dead Letters, giving full particulars, for packages are held one year and can be claimed any time within that period. After that they are sold at public auction and the proceeds turned into the United States Treasury.

The postal system is wonderful, but it cannot compel you to mail your things early, and in the wind-up it is a case of "the survival of the fittest."

So wrap your gifts lovingly, tie them securely, put on "Please do not open until Christmas" wafers, and mail them now.

For Christmas **For Christmas**

She Gave Them

Shirley PRESIDENT Suspenders

She was not partial—she presented all with PRESIDENT Suspenders. No other suspenders are so delightfully comfortable—respond to every move of the body—and wear a full year.

Give PRESIDENT Suspenders in Christmas Boxes to the men of the family—they'll appreciate them more than ties or socks.

If you can't buy them in your town we will fill your order postpaid on receipt of price. Try your stores first.

50 cents a pair, including Christmas box

The 1913 Shirley PRESIDENT Calendar mailed for 10 cents.

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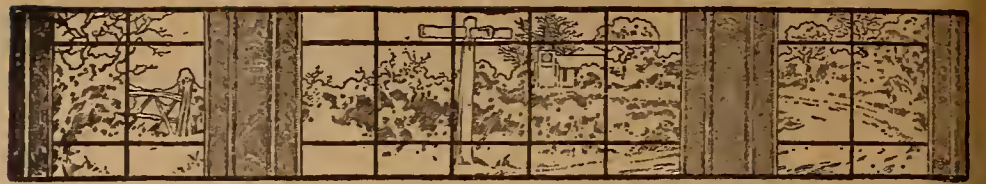
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Catalogue free at your dealers or by mail.



The Adventures of a Beneficiary

[CONTINUED FROM PAGE 22]

"Mr. Nettles gone!" She spoke with a dismay he could neither understand nor find flattering.

"He was here, and he is not. I don't know why he went away so hurriedly, but he insisted upon immediate departure."

"Oh, I am so, so sorry!"

"You will pardon me, if I am not," Wright said promptly, but, being stricken by doubt of the strictly ferrymanlike character of the remark, he was moved to add: "Mr. Nettles was not—er—exactly congenial. He didn't seem to care to meet overtures half-way. I don't think he was very—well, very gossipy."

"But he was very nice, for all that!" the girl cried, in loyal defense of the absent one. "We had an arrangement. We—" She hesitated, and a fresh color stole into the delicate brown of her cheek; "we—that is, he remembered it if I didn't happen to have any money; and now I haven't a penny with me," she concluded, with a rush of humiliation at the confession.

A load was lifted from Wright's bosom. "Oh, if that's all," he said joyously, "you're just as well off as if he were here, perhaps better. I don't believe Nettles was a man to carry much money, and I have—"

"He trusted me, you know," the girl broke in, evidently more intent upon explaining the precise serviceableness of Mr. Nettles than upon Wright's remarks.

"He couldn't trust you any more than I would!" the young man declared warmly. The girl looked puzzled, oddly puzzled, it seemed to him.

"I don't quite understand, I'm afraid," she said. "It's always the same, isn't it?"

Wright felt that here was a proposition offering chance for debate. "Why, from one point of view I suppose that is undeniable," he said. "The essence is the spirit, not the amount. Still, the amount couldn't matter much. In such a spot as this—he waved his hand at the silent reaches of the river between its tree-fringed banks—"in such a spot as this, one could hardly need much money."

"The charge is always twenty-five cents," she said simply. "That is the regular rate, I think, for a vehicle with one horse, and Noddy always counts as a full-grown horse, you know, in a case like this."

"Oh!" Wright said, in the startled fashion of a man who perceives himself leaning over the edge of a deep ditch—or an abysmal blunder. "Oh, yes, as a full-grown horse! Quite so, quite so! To be sure, the charge is always the same. Has to be, you know—laws and rules and all that sort of thing. Regular rate; oh, yes, very regular! A vehicle with one horse, twenty-five cents—yes, that's it precisely." He pulled out a handkerchief and wiped the cold sweat from his forehead. Confound all ferries, and this in particular, with its barbarous practice of extorting vulgar coin from pretty girls; and more than all confound the idiocy that could lead one to the verge of making an unmitigated ass of oneself!

The girl was looking at him wonderingly, yet she came to his rescue like an angel, as he was prepared to maintain.

"I am Nettie Lansing," she said. "Our place is about a half-mile down the main road. I shall lose no time in seeing that you get your money."

"But you need not take the trouble—" Wright began, and then paused, reminded of his official rank and position in life.

"It will be no trouble," the girl said, calmly and quite determined upon the swift settlement of the debt. To dispose of this phase of the negotiations, the young man laid hold of the pony's bridle and led him toward the scow. Of a sudden it became apparent that what he had supposed to be the overhang of the craft was at least a foot above the ground. To lead the pony over the obstruction would be easy enough, but the cart could follow only at cost of a tremendous jolting for its fair occupant.

Miss Lansing perceived his difficulty. "You might drop the apron," she suggested.

Wright for a second had an awful suspicion that she was making game of his inexperience, but the glance that met his was frank and free of guile.

"I beg your pardon, but I don't quite understand," he said humbly. "I'd drop an apron or anything else, but I don't happen to see one anywhere about. The

boat's equipment seems to me—er—er—rather masculine in its simplicity."

"The shelf at the end—that is what they call the apron," the girl explained. If she were tempted to smile, she concealed the inclination like the heart of gold she was. "It swings on hinges, up and down, as you'll see, if you look closely. There is a lever that runs back and is caught by a hook."

Wright looked and saw—and blamed himself for a stupid owl that could miss the simple contrivance which served as a landing-stage. He sprang upon the scow, pulled back the hook, and the apron dropped till its end rested upon the bank. Whereupon the pony, who knew the routine of crossing the ferry, walked aboard and drew his cart after him.

Wright shoved off, and, picking up his pole, began to propel the scow on its homeward voyage. Certain vague misgivings were relieved by the conduct of his craft, which bore its freight with little change in trim, and which moved almost as easily as when it was flying light. The post he had taken was just abaft the cart, so that Miss Lansing, by turning her head, could look down upon his labors. Perhaps his knowledge of this circumstance led him to devote more attention to the style of his performance than to its intrinsic value, and he was poling away very rhythmically when his passenger broke the silence.

"I'm wondering if you're not Mr. Wright," she said pleasantly.

The young man gave an extra thrust with the pole, and straightened himself on the recovery.

"Yes, I am Emery Wright," he said. "Then it will be as if I had known you for ages. My cousin, May Lansing, has spoken of you often."

"Miss Lansing was very kind to remember me," he said heartily. "Her people have a summer place near by, haven't they?"

"It's just below ours," the girl told him. "But they are abroad now."

Wright looked up to her with a smile. "It sounds ungenerous to say I'm sorry they're where I don't doubt they are having a delightful time," he observed. "It would have been jolly to have them as neighbors, though. You see, as a stranger in these parts, I pine for a friendly face that I know."

"I fear you'll find the ferry lonely and poky and stupid sometimes," she said with gentle sympathy. "Even your uncle felt the isolation now and then, I think. Lately he had been away a good deal, you know."

"But I didn't know," he said almost defensively. "I'm sorry to admit I knew very little about my uncle. The family had drifted apart, you see; and somehow or other it never drifted together again."

"It's a bit remarkable," he went on, "that Uncle Nathan should have remembered me at all. I imagine there isn't a chap in the country, Miss Lansing, who knows less about a ferry than I do. It—well, it rather 'fazed' me at first, but now I'm wondering if it isn't going to be a pretty decent sort of experience." And he beamed upon her with the air of one who discovers alleviations and compensations in unexpected places.

"Of course, after the city, the ferry will appear a strange business," she said. "It will have its difficulties."

"Very true. Still, I can't but feel some of them are disappearing."

"You are managing the boat very nicely." "Thanks for the encouragement! But this poling is easy—just push down and keep on pushing until it's time to draw in the pole and begin over again. So much I've mastered, as you may have observed, and as you may now behold again."

Wright had spoken gaily, and he made a little burlesque exaggeration of the maneuver he had described. He swung his pole farther than might have been advisable, and he thrust upon it with an abandon which bespoke forgetfulness of that deeper channel the scow had to cross. Unluckily, in the interest of conversation, he had given no heed to the drift of the boat, which now chanced to be where the river was deepest. Miss Lansing saw the pole pierce the water with a splendid lunge, followed almost instantly by a mighty splash, as the ferryman, failing to meet the expected resistance and losing his balance, plunged over the stern and disappeared. [CONTINUED IN NEXT ISSUE]

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101 Christmas Gifts



The kind you make your-
self is the best kind to give



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101 Christmas Presents and how to make them—



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One of the ideas which makes the December Woman's Home Companion worth **15c**



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can be made for either a man or woman, and is welcome to both. You can make one by following these instructions.

One of the ideas which makes the December Woman's Home Companion worth **15c**



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New patterns in crochet and embroidery work, with many fresh suggestions for out-of-common gifts that will be welcome wherever sent.

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Fret work book trough

A boy or girl who can use tools can make this—one of the most useful presents imaginable.

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Books for Christmas

If you think so, here they are: "Christmas Gifts from the Land of Books;" book reviews of the best books for Christmas presents to give or to get.

One of the ideas which makes the December Woman's Home Companion worth **15c**



Christmas Dresses

The Fashion Department has something to say about Christmas also. For instance, a page of fancy dress costumes for holiday parties. Then there are things to wear which you can make for Christmas presents or for yourself to wear at Christmas, including a suggestion for a Christmas tie for some particular man.

Christmas fashion dress suggestions—one of the ideas which makes the December Woman's Home Companion worth **15c**



Christmas Celebrations

"Christmas Time Fun for Young Folks at Home;" or "Three Christmas Bazaars for Your Church;" "A Christmas Sermon" by Washington Gladden; "Decorating Your Church;" "New Gifts and Ways to Give;" "Christmas Gifts that are Good to Eat," are some of the ideas which are offered for making Christmas enjoyable.

One of the ideas which makes the December Woman's Home Companion worth **15c**



Stern Irene

Your children will be wild with delight at the new Kewpie page. Stern Irene is the Kutout member of the Darling family, and the Kewpie Gardener the Kutout member of the Kewpie Krew, ready for busy fingers, scissors and paste-pots.

One of the ideas which makes the December Woman's Home Companion worth **15c**



1500 ideas mostly about Christmas

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Address _____

Wilbur Stock Food Company, Milwaukee, Wisconsin.
Gentlemen: The Stock Tonic that you sent me several weeks ago works to perfection, as my stock is in much better condition with less grain than when I commenced to feed it.
Yours respectfully,
South Royalton, Vt. FRANK RAND.

Wilbur Stock Food Company, Milwaukee, Wisconsin.
Gentlemen: Enclosed find draft for \$13.00 in payment for Stock Tonic. I have used two pails of your Stock Tonic; it is certainly fine. I have used almost everything on the market, but nothing to compare with the Wilbur Stock Tonic. My milk

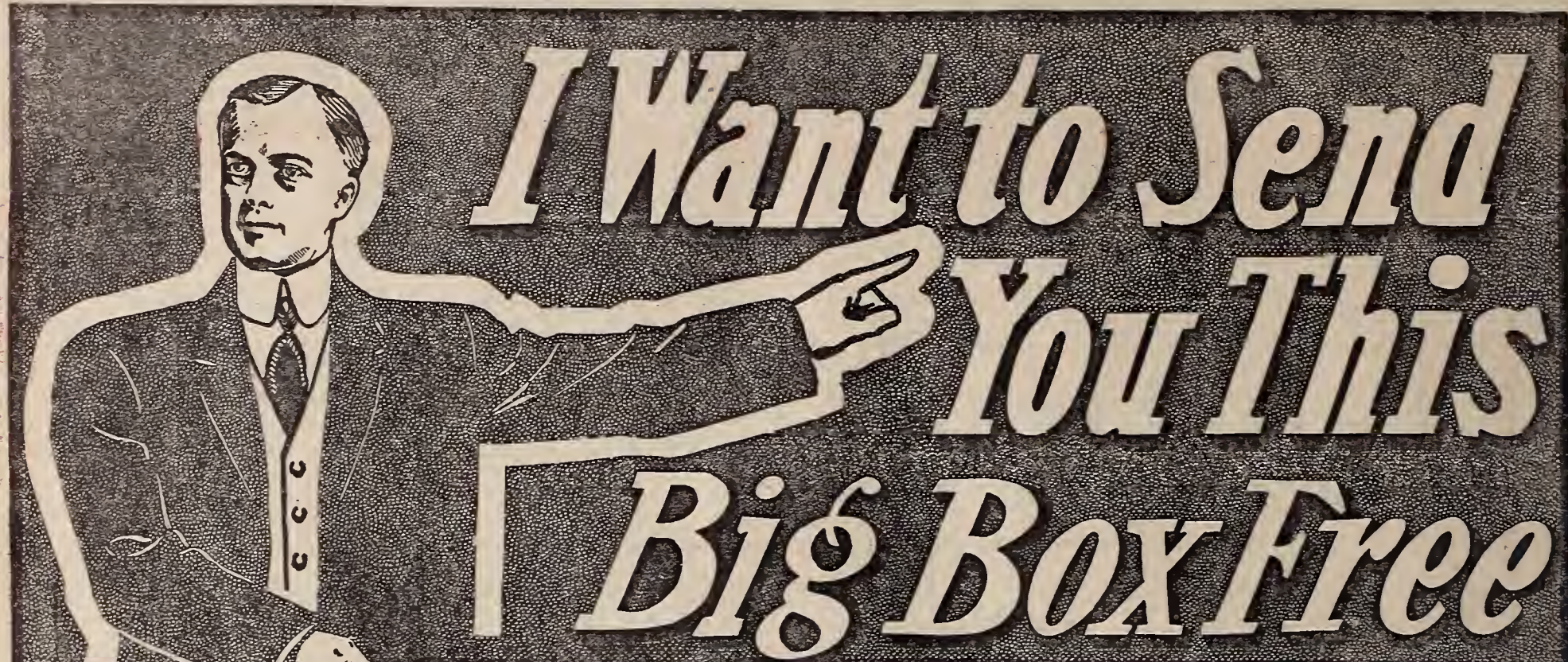
cows, calves, hogs and colts, after feeding three days, I noticed the change. It has saved me many a sack of grain. My horses are slick and nice, also are working hard every day.
Will enclose watch certificate and thanking you for past favors, I am,
Kremmling, Colo. Yours very truly,
CASPER SCHWAB:

Wilbur Stock Food Company, Milwaukee, Wisconsin.
To Whom It May Concern: I have used Wilbur Stock Tonic and can say I will use it as long as I have any stock, whatever kind it may be, to feed. Feed your chickens, and you get more eggs; feed your horse, and he will do more work; feed your cow, and she will give more milk; feed your hog, and he will give

more pounds of pork; and to make a long story short, you can't afford to be without it. So please hurry my five pail order to me.
Sincerely yours,
Williamsburg, Ohio. JAMES J. WAGNER.

Wilbur Stock Food Company, Milwaukee, Wisconsin.
Gentlemen: Received my watch in good condition and was surprised to find it so nice, and I appreciate it very much. It has kept good time ever since I got it and don't see how you could have sent it.
I think your Stock Tonic is the best made. Have used several different kinds of Stock Tonic, but never found any that will do as much as yours. I have sold ten pigs (would have been

six months old the middle of February) and they weighed 200 pounds apiece. Some wanted to know how I fattened them and what I fed them that made them grow so fast, and, of course, I had to tell them it was Wilbur Stock Tonic.
I have seven head of horses and they are rolling fat. When I hitch them up they are so high-lived, that I can hardly do anything with them. They are always up and ready to go. Everybody wants to know what keeps them in such good condition and I tell them it is your Stock Tonic that does it. I have a team that is equal to your champion team on your envelope. They are fine and eat Stock Tonic three times a day. I thank you for your past favors and remain, Your agent,
Arcadia, Oklahoma. W. M. RANDLE.



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is fed by 500,000 stock raisers daily. I want you to see what it does for your horses, your milch cows, your hogs, your sheep and your poultry.

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prove to your own satisfaction that it is a feed saver and money maker for you. Is my offer fair?

Do you risk one cent by accepting this big box free? Is it worth a two-cent stamp? If so, just fill out the coupon below, and mail today.


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I don't want you to do anything to earn it.

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Wilbur Stock Food Co., Milwaukee, Wis. Madison, Ind., June 29, 1912.
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Cor. 2nd and Walnut Sts., Madison, Ind.

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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, DECEMBER 21, 1912



Yule-tide motto: "This day shall change all griefs and quarrels into love"

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Our Subscribers' Service

I doubt if a majority of the readers of *Farm and Fireside* either take advantage of all the opportunities which we offer our readers, or really know what they are. And I believe I can do nothing better in this space than to introduce them to our Subscribers' Service a little more fully.

A glimpse into our correspondence may serve to do this. Not long ago we received from one of our readers, who happened to live in Sebring, Ohio, the following letter:

A Typical Inquiry

I have been reading the articles on poultry very closely, and you certainly have some good ideas. I raise poultry on a small scale, having about a hundred to a hundred and twenty-five Rhode Island Reds. These are not prize-winners, but good layers.

In the last week or ten days my flock has developed colds which, in one or two cases, have taken root, and the fowls' throats and tongues become coated with a yellow substance, and in time this disease kills the fowls. Have you any suggestions to make as to what kind of medicine to give to a flock which is suffering from cold?

Yours truly,
W. E. THOMSON.

Now this letter, as a matter of course, went to one of the editors of the paper who is skilled in such matters—Mr. B. F. W. Thorpe, whose writings often appear over the initials "B. F. W. T." Mr. Thorpe has been through almost every phase of farm life, was for years editor of the *Maine Farmer*, and is pretty well known to the farmers of the State of Maine, as they always call it down East, and of Pennsylvania. He came to the paper from Ithaca, New York, where he was pursuing special studies in fruit-growing and plant-breeding. His greatest pride, just now, lies in the fact that he possesses a hen rejoicing in the name of Sairey Gamp, which, in her third production year just ended, laid 217 eggs. She is a Barred Rock, and a wonder.

Mr. Thorpe has in his charge our Subscribers' Service, though we frequently refer inquiries to specialists outside the office. We are pretty well equipped to handle questions right here, however. Mr. Dallas S. Burch is also here, and those who know of his work as State Dairy Commissioner of Kansas and a writer of bulletins for the Agricultural Department at Washington will recognize in him a dairy and live-stock specialist of some standing. We pried him off his New Hampshire farm to bring him here, though he is more familiar with conditions in the West than the East. He is a graduate of the Wisconsin College of Agriculture.

But Mr. Thorpe took charge of Mr. Thomson's query as to what was the matter with his chickens, and wrote him this letter:

Mr. Thorpe's Reply

Mr. W. E. Thomson, Sebring, Ohio.

From your description it seems evident that your birds are suffering from some trouble that is of the nature of bronchitis, catarrh, or incipient roup. These diseases are very similar in nature, and frequently a bad cold may develop into one or other form of these diseases. These poultry troubles nearly always result from exposure to cold, and particularly to drafts of air, when the atmosphere is damp and cold.

With strong, healthy stock it is usually only necessary to remove the cause and give some simple treatment in order to effect a cure. It is a good practice, however, to give some red pepper in moist, mashed food for several days, and to place some crystals of permanganate of potash in their drinking-water—just sufficient of these crystals to color the water a rather deep pink. Then give no other drinking-water for two or three days than the permanganate water, and of course separate the sick birds from the well ones.

The birds which have the sore eyes and affected throats should be treated with peroxide of hydrogen, using a small oil-can to squirt the remedy into their mouths and nostrils. Also the eyes and head should be treated with a fifty per cent. solution of this remedy, making sure to have the solution enter the eyes and all sore places on the head.

By giving treatment of this kind and making sure that the birds are well protected from all drafts, and at the same time giving good ventilation in their quarters, I think that you will overcome the trouble.

Sincerely yours,
B. F. W. THORPE.

Mr. Thomson's Acknowledgment

Your favor of the 7th inst. received, and I want to thank you for the information contained therein, also wish to state that this is the first letter that I have ever written of its character and received an answer with as much good sound common sense in it as yours contained. In the majority of cases you receive an answer with a lot of information that you are no better off after you get it than before, and it winds up by recommending some kind of dope that somebody else makes, but your letter gives all the information desired, and, as stated above, is the best letter of its kind I have ever received. Thanking you for your courtesy and for the information contained in the letter, I remain,

Yours truly,
W. E. THOMSON.

We Hope So

Now this is one exchange of letters of literally thousands which we have had with readers—and which are going on all the time. Whether in poultry, horsemanship, live stock, dairy, garden, orchard, or soil management, we offer our readers the best judgment, not only of this editorial staff, but of the practical agricultural world. And the number of women and girls who are aided by Mrs. Coan Josaphare in her *Fireside* departments is legion.

This is the first glimpse I have given our readers into the editorial rooms of *Farm and Fireside*, I think.

Why do it now? Well, it has long seemed to me that you might be glad to know something about these things. This column is a sort of thinking aloud anyhow, and I thought that Mr. Thomson's experience with us might be something of a revelation to a lot of you who are not living up to your opportunities.

Some of you will ask why we don't print more of these letters. It is one of our problems—to find space for them. Many are so personal that they would be of importance to few, but many others are of general interest. Perhaps we shall in the future find room for more of them in the greater *Farm and Fireside* which every month realizes for all of us. We hope so.

Robert Guier

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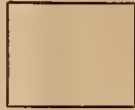


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Forgetting Mother

IN A mission in Chicago there is posted in letters two feet high this legend: "HOW LONG SINCE YOU WROTE TO MOTHER?" The missionary who deals all the time with wandering boys and men knows that neglect of mother is one of the commonest sins of the wanderer.

A letter to the editor reminds us of this. It is from Mrs. Ida Garfinkel, 199 Forsyth Street, New York City.

"On July 19, 1909," says this mother of a wandering son, "when I lived in Providence, Rhode Island, my son, Samuel Garfinkel, left home and has not been heard of since. His ambition was to become a farmer. He was eighteen years old, and is now twenty-two. By giving a sick and aged mother space in your paper, asking him to return to my present address before it is too late, you will oblige a poor and blind mother."

Before it is too late!

These are the words which should ring in the ears of Samuel Garfinkel—of all the Samuel Garfinkels who may be putting off from day to day a duty which may be too long delayed.

The Professors and the Page Bill

WITH what seems to us a curious short-sightedness, the recent conference of agricultural experiment station men maintained its attitude of coldness toward the Page Vocational Education Bill. This body is now about the only national organization of an altruistic character which has not lined up for the Page measure.

It is probable that the experiment station men, feeling that they now have a code of relations satisfactorily worked out and working with the national Department of Agriculture, are reluctant to have things disturbed by the setting up of a new status. They want things left as they are. Notwithstanding the fact that under the Page Bill's provisions the experiment stations would still be in control of agricultural education under it in the various States, these good men might be excused for desiring the perpetuation of the present condition of things if that were possible.

But they ought to see that it is not possible. The danger to the leadership of the experiment stations in agricultural education and progress does not lie in the Page Bill, but elsewhere. A great manufacturing corporation has just given a million dollars to create a fund to teach agriculture and placed Prof. P. G. Holden at its head. A great fertilizer company has just placed Dean Wheeler of the Rhode Island station in charge of work essentially educational. A great mail-order house has given a million dollars to a fund for agricultural education. All these, and dozens of other enterprises of somewhat less scope, are competing with the experiment stations, not only for agricultural experts, but for public attention as well.

Moreover, the status between the National Government and the experiment stations trembles in the balance. The Agricultural Department itself is likely to be thrown out of harmony with the state stations by forces beyond its control. Already the statesmen in Congress are beginning to develop a new pork-barrel from the new activities in agricultural education. It was through congressional action, and not by any desire of the Department of Agriculture, that the last Congress appropriated \$125,000 and an annual item of \$50,000 for the purpose of establishing a United States experiment station "to demonstrate the kind and character of plants, shrubs, trees, berries and vegetables best adapted to the climate and soils of the semi-arid lands of the United States."

It is an open secret that this bill is a mere pork-barrel measure meant to satisfy the local ambitions of Mandan, North Dakota, for the possession of some sort of public institution and a pull at the public treasury. The new station will duplicate the work already in progress at the state experiment stations of the semi-arid States

and will plunder the faculties of the colleges for good men to carry on the duplication. The Department at Washington is not to blame. It is the pork-barrel propensities of localities and congressmen.

The old status is no longer possible. The passage of the Page Bill will place in the hands of the experiment stations a great deal of new work which they should be eager to undertake, and which would greatly strengthen their hands. We want their hands strengthened. We think they need it. We believe the headship of the experiment stations to be in danger—a danger which might be turned aside by a new and progressive policy on the part of every one of them, and an eagerness to accept and perform the new work which, in one way or another, the nation will have done.

Another Tuberculosis Cure

SINCE Koch discovered tuberculin, thinking it a cure for the great White Plague, and was disappointed in finding out that it was only a test for the disease, the search for an anti-tuberculosis serum has gone steadily on. The serum developed by von Ruck was recently mentioned in these columns.

Now comes from Germany an account of a serum developed by Doctor Friedman of Berlin. A reliable writer, W. G. Shepherd, asserts that he has spent many hours with Doctor Friedman, and has seen many people who have been cured of consumption by his serum. Doctor Friedman asserts that he has cured six hundred cases of tuberculosis during the past two years, and knows that he has a sure cure, the injection of which into the blood kills every germ in one or two treatments. The serum is a preventive as well as a cure, if these accounts, which seem to be reliable, are really accurate.

Doctor Friedman asserts that the ordinary case of tuberculosis can be cured by his serum "in a few weeks at most." The serum may be manufactured at a cost of not more than a dollar a dose, and one dose usually cures. "From a small vial of the germs," says Doctor Friedman, as quoted by Mr. Shepherd, "enough could be produced in two weeks to supply a million patients with a dose each."

If the Friedman cure be not one of those scientific mirages which sometimes deceive the research worker, the news is the most important of the year—far more important than the Balkan war, or even the now impending general European war. For this discovery is a victory of peace which will bless the race after the curse of the war has ceased. If this anti-toxin is really what it is claimed to be, we may confidently look for action on the part of every state providing for the free treatment of tuberculosis cases, in both man and beast. We may expect to have a year of jubilee of healing.



"I wonder what sort of a hatch we'll get?"

The Kinds of Fertilizers That Pay

ANY farmer who had tried out different sorts of fertilizers for eight years would think his experience valuable. But how much better to start in with eight years of someone else's experience? Therefore, farmers ought to study the results of fertilizer tests wherever possible. Here is some experience at the Indiana Station.

On clay and loam soils the complete fertilizers made the greatest increase in yield. But a smaller yield with potash and phosphoric acid and no nitrogen paid best. In other words, for corn, the nitrogen cost more than it was worth. The best paying corn fertilizer was phosphorus, with potash second.

Applied to wheat, the complete fertilizer not only made the best increase, but paid best. Each element paid, but, as in corn, nitrogen gave least profit, potash next, and phosphoric acid stood at the head of the class. It paid better to use two hundred pounds of complete fertilizer per acre on wheat than one hundred pounds. Fertilizer paid better on wheat than on corn. The results on oats were very much like those on wheat, in bushels of increase, but not necessarily in profit.

On timothy the complete fertilizer gave better results than nitrate of soda alone, especially the second year.

Heavy purchases of nitrogen for wheat and corn did not seem to pay. Heavy applications of fertilizers seemed to last, like manure, and raw rock phosphate did not seem to do much good until the second year. In nearly all these experiments phosphorus seemed the best to buy.

Here are eight years and 225 separate tests all ready to hand. Well worth studying. Buying fertilizers blindly is about as foolish as trading horses at midnight in the dark of the moon. Select the kinds that pay.

Our Interests and the War

THE Balkan war, as this is written, trembles between a treaty of peace to be signed, Turkey and the Balkan allies on the one hand, and a general European conflict on the other. In fact, both of these things may take place before this reaches the reader—that is, the allies, Greece, Bulgaria, Serbia and Montenegro, after a wonderfully brilliant victory over Turkey, may be set upon by Austria in a quarrel over the territory to be divided. Russia may back up the allies. Germany may come to the aid of Austria. France may leap upon Germany's back, drawing the fire of Italy as the ally of Germany, and then England, as the ally of France and Russia, will throw her mighty navy into the bloody game for which the powers have been preparing for a number of years.

The war already fought has seriously affected the power of the grain-growing regions of the Danube Valley to grow wheat, corn and other grains next year. If the conflict spreads to the great powers, our surplus, the surpluses of South America, Australasia, India, Canada and South Africa will have to do for the support of the greatest armies ever put into the field. Prices will be high with us—temporarily.

And yet, aside from the awfulness of the war, we should all hope for selfish reasons that the horror be turned aside.

The poverty of Europe will be made deeper and wider by such a war—as the poverty of Turkey and the Balkan states has already been deepened and widened. A nation exhausted by war is a poor customer for our grains and our manufactured goods. Starving peoples depress the general level of prosperity everywhere. Peace and plenty in Europe and Asia are better for us all than war and poverty. We want prosperous peoples with whom to deal: The untilled farm, the burned barns and dwellings, the trampled fields of Europe, are the property of plain farmers such as we are; and in the destruction of these farmsteads every farm home in the world suffers a financial loss, as well as a moral outrage. Let us hope for peace.

Protection From Pestilence

How the Black Death is Entering This Country Almost Without Opposition

By Dr. Leonard Keene Hirshberg

THE jovial lords and gay ladies of Boccaccio's day sought protection and immunity from the Black Plague of 1348 in an iron-gated, shut-in village only a few leagues from the lively court at Florence. Pepys in his "Diary" records the fearful ravages of the Black Death at that time in England, and there is not a doubt but what the absence of such isolated and stone-walled cities in England made the epidemic there wider in extent.

Coming down to more modern times, such outer guards as the Saragossa Sea, that whirling dervish of the Atlantic Ocean, filled with debris and derelicts from the Bahamas, helped by its wrecks to save the early



"An iron-gated shut-in village"

American ports from many tropical epidemics, not the least of which was the plague. But no more is it necessary for walled towns and the sea's toll of death to defend us from an undiscovered foe. Modern laboratory doctors with their test-tubes and microscopes, their incubators and gelatin plates, their antitoxins and vaccines, have spotted the tiny destroyer of a billion lives, have met them face to face, and "they are theirs." The germ unknown for two thousand years is now recognized by the veriest tyro of a bacteriologist.

Few Afflicted with the Plague Survive

Though the epidemic occurred in India, the East Indies and the South Sea Islands from time immemorial, it remained for a Japanese physician, Doctor Kitasato, and Doctor Yersin, of Paris, to discover the plague-microbe. Both of these eminent physicians hit upon the guilty bacillus at the same time, and Doctor Yersin set about immediately to perfect a preventive and curative vaccine in an effort to cut down the horrible death-rate of fifty per cent, which this contagion takes in toll of human lives. In the mild epidemics one person in every two attacked by the disease dies, while severe epidemics are not rare in which every person infected goes *zu Grunde*.

Gargantuan boils, or buboes, that appear in the armpits, upon the neck and in the groin give the name Bubonic Plague to this fatal malady. From three to seven days after exposure to the *Bacillus pestis*, as it is technically called, fever, headaches, nausea and chills appear. Then severe prostration begins, the buboes become evident by their size and pain, and the afflicted one falls dizzily into bed. All effort ceases, a fever of 104 degrees is noted, and the tongue becomes thickly coated and yellow. Three days more and the nurse is deceived by a slight drop in the fever, only to become more frightened as it rises to 105 degrees.

If he is destined to recover, after a week his temperature gradually subsides, but in most cases a fatal ending occurs during this week. The most favorable outcome, however, leaves such prostration, and such weakness of the heart and blood-stream, that death may even then supervene from exhaustion. Of the numerous other varieties of plague the form that resembles pneumonia is next in its dangerous symptoms. All of them are bad, none of them less fatal.

The Danger is Recognized

Well, what has all this to do with inland farms, with the country, with the city, with gophers and chipmunks, weasels and squirrels, ferrets and rats, mice and fleas, with you and me? Sad to say, it has much indeed to do with us.

The near approach of bubonic plague to the United States, by having become epidemic in Porto Rico and advanced to Havana, Key West and inland California, has caused medical authorities and commercial interests of practically all the towns and villages from Portland, Maine, to Galveston, Texas, from San Francisco to Cape Cod, promptly to respond to the warnings issued by Surgeon-General Rupert Blue of the Public Health and Marine Hospital Service.

The health authorities of New York, Boston, Baltimore, Philadelphia, Norfolk, Key West, Pensacola, New Orleans, San Francisco and Galveston have already notified General Blue that they have entered into cooperation with the representatives of that service in their cities for the purpose of making a crusade against every rodent of the gopher, squirrel, chipmunk and rat family, and the parasites, such as the flea, which infest such animals. That all of these must be exterminated is generally recognized.

When it is understood that the Black Plague killed the legions of Rome in vast numbers right out of hand as far back as the second century, and that it destroyed half of the Roman Empire in the sixth century, it is amazing that nothing much was really learned about this

malady until the present generation. In fact, it was in an epidemic at Hong Kong in 1893 and 1894 that two bacteriologists at work without each others knowledge—the Doctor Kitasato of Japan and Doctor Yersin of Paris mentioned—both independently discovered the microbe that causes the horrible ailment.

It would be out of place here to mention all of the peculiarities of this vicious germ. So suffice it to say that it is a minute, oval rod without legs, wings or other appendages. It cannot fly, neither can it crawl; so then, you wonder, how does it insinuate itself into the healthy human body? How is it able to maim and kill the high and the low, the slim and the sleek, the farmer and the forester, the banker and the business man? The answer to these vital questions has only been recently forthcoming, and, like the meshes of crime that have interpenetrated the whole New York Police Department, the track of plague-guilt leaves its hall-marks through numerous parts of the animal world.

"Rats," You Say—and You're Right

The full appreciation of this will begin to be realized when you are told that the plague-bacillus will live in the ground and in soil water, in potatoes and various foods, from one to four weeks after it has left the living bodies of man, insect or rodent.

Some fifteen or more years ago two Italian savants, Doctors Bandi and Stagnitta-Balistreri, discovered the germs of the Black Plague in a rat. This rat had made its haunts in the shack of a Chinaman, who was taken with the malady two months before. They soon learned that rat or flea bites always seemed to precede the onset of the disease; in other words, the plague always started in the skin of the person attacked.

This keen observation soon directed the sharp eyes and attention of the different investigators toward some blood-sucking animal or insect as the responsible parties that instigate every such contagious conflagration. All the evidence soon began to concentrate its direction toward the rat, or something that made a home with the rodent. Almost when the suggestion was made the flea was pounced upon, accused, tried, found guilty and persecuted, not prosecuted or executed, mark you, for

The big fleas
Have little fleas
Upon their backs to bite 'em,
And the little fleas
Have lesser fleas,
And so *ad infinitum*.

There are all classes, grades and conditions of fleas; they are too numerous and too ubiquitous for me at the moment to put my finger on them. Moreover, the only way you can intimidate a plague-infected flea is first to catch your flea, then train him in the way he should go,—like the educated circus fleas that are harnessed and exhibited at county fairs,—then inoculate him with your own home-made bacillus, and finally execute him.

How to Combat the Plague

That is your only chance. Needless to say, it is a bit less wearisome than stacking ninety tons of hay with the sun having a fever of 110 degrees.

What is then to be done? How can this pestilence which now knocks at our body's doors be kept, like a wintry wolf, from our very threshold? By ridding the country of every living thing that harbors the specious flea. Any animal, however much we love its kind, that may, or hopes to, entertain the plague-flea must be packed off, aeroplane-post haste, far from the maddening crowd. Now then, what animals act as unwilling or even hospitable hosts for the pygmy flea?

Unhappily, although the plague contagion enters a country upon the backs of water-rats by way of slum-laden seaports, it obtains its true foothold in the out-of-the-way places in the mouths of fleas of obscure field animals. The living creatures that browse in the farm homes, barns, growing grain and mountain fastnesses are the ones most apt to be unwittingly the source of a country-wide epidemic.

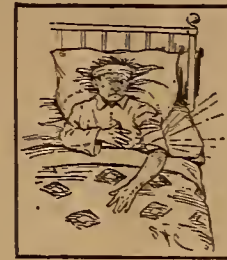
Animals That Carry the Plague Germ

Lulled asleep in the complacent confidence of false security, the people of the United States to-day scarcely recognize the conclusive signs and indubitable earmarks of this oncreeping pandemic of plague. The awful slaughter in past eras, such as occurred during the second, sixth, fourteenth and eighteenth century epidemics, when millions succumbed to its onslaught, may conceivably be soon duplicated, in spite of all of our newer knowledge of this disease, if the warnings sent out are not heeded.

Terror-stricken refugees from Havana, Porto Rico and Key West are at the moment of this writing landing from a poorly quarantined ship, at the port of Baltimore.

The squirrel and rat families, which include among their varieties the weasel, gopher, chipmunk and several other kinds of squirrels, seem to have a strong

susceptibility to the *Bacillus pestis*. As a divine notification, a sort of fair warning, just before the plague has successfully stolen upon the human population of a land, the rats, gophers, weasels, chipmunks, squirrels, and even ferrets, fall sick and are found dead. When attention was first called to this by the Hindoos and Chinese, little respect was given to the tales. Bacteriologists, however, associated with the United States Public Health and Marine Hospital Service took up this question seriously, and not only found the plague-microbe alive in the dead chipmunks and gophers, but were easily able to reproduce the fatal malady in well weasels, squirrels and rats, by administering doses of the captured bacilli. Thus all doubt was removed. The same trouble infects these lower animals; and man, who must dwell in peace together with them, must accept the stern decree of science and avail himself of the weapons at hand to rid the country of a calamity.



"True enough . . . a sore arm"

The Danger of Delay

Before long the experience that California is now undergoing may be repeated. Some village boy or farmer will recount a death or two among gophers and weasels.

Another farmer from a distant town will in blank surprise record the deaths of rats "without poison having been bought from nary a druggist." Then outlying neighbors will tell of squirrels found dead, and a city paper will tell of several deaths in the slums, among sailors or foreign folk. Suddenly some scary layman who has read the magazines will suggest to an amazed seventh son of a surgeon that one of the deaths "may be the plague." "Impossible," says the doctor, but he has been set thinking just the same. The next case he reports as plague, and the stand-pat newspaper of the benighted seaport and a whole raft of money-mad business men hoot him out of town. The freemasonry of big business, machine politicians and don't-print-the-news press soon bring their pressure to bear upon the old-fashioned political health board, and the plague rages at your feet at first without your knowledge.

But not for long. Even the allied forces of Hades itself cannot forever deceive the public, but when you do find it all out it is almost too late.

Then when the epidemic has assumed huge proportions, Dr. Rupert Blue and the National Health Department is yelled to for help. In one of our American cities the tropical method of burning down a whole quarter became necessary before the Black Death was safely under control. The best prevention of the plague is anti-plague vaccine, made just as the anti-typhoid vaccine is made, with the killed and carbolyzed microbes. During the Japanese-Russian war every Japanese soldier was thus vaccinated. True enough, the vaccine makes for sore arms and a mild headache of several hours' duration.

The Coming Plague is no False Alarm

The present plague epidemic, which began in Bengal and the Punjab in 1896, has its western foci in Porto Rico, Havana, Equador, Brazil, San Francisco and a southern port that is concealing its presence and doing little to eliminate it. Already three millions of lives have been sacrificed to this twentieth-century Black Death. It is no false alarm, this coming plague; no unnecessary scare, as some political doctors would have us believe: it is a dangerous, imminent epidemic that confronts the land. It is up to us to give enlightened publicity to the situation and a truthful facing of the facts.

We need a national department of health: one that will stand between our country and the firmament of disease and disaster that forever threatens our borders; a national bureau, with its health officer in the cabinet, ready to interpose his might and right between the selfish interference of Big Business and the narrow bigotry of Special Privilege. Thus will the menace and the danger of dire pestilence be moved back to remote vistas, and the intelligent defense of the country's sanitation be brought about with scientific precision.



"We need a national department of health"



"First catch your flea"



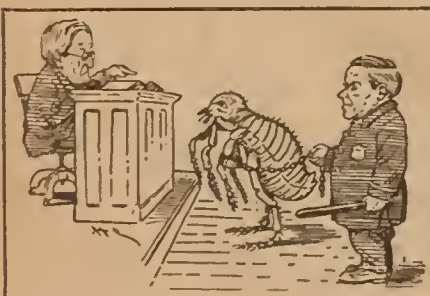
"Upon the backs of water-rats"



Let us not bar out enlightenment



"Some village boy will recount a death or two"

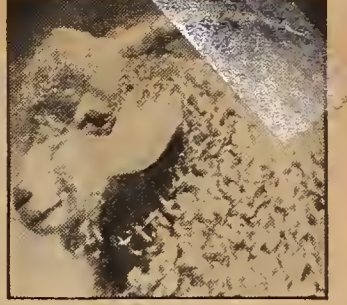


"Accused, tried, found guilty"



What Are Goats Good For?

By George H. Dacy



THERE are only about a million Angora goats in America, and we import annually over thirty per cent. of all the raw mohair in our domestic manufactures. There is no evident reason why our farmers cannot maintain enough goats to supply our domestic trade with superior mohair. It will surely be to our advantage to investigate the proposition.

The Angora goat came from the Province of Angora in Asia Minor. The country is rough and mountainous; its climate is severe; the result is that the Angora breed possesses a vigor and vitality much greater than the mutton breeds of sheep.

They Prefer Leaves to Grass

"Goats are browsers by nature, and there is no vegetation which they will eat in preference to leaves and twigs of bushes," said an expert goatman. "They eat brushwood, briars and weeds, but seem to be careful to avoid that character of vegetation which other kinds of live stock prefer. Every leaf and twig within their reach is greedily eaten. They will desert the finest clover and blue-grass pasturage for a thickety bramble of briars.

"Land can be cleared by Angora goats of the worst brush known to this country for a little less than nothing. How? Simply this: Angora goats will live on leaves and weeds, leaving the land cleaner and nicer than can be done in any other way. Many persons have the idea that goats bark the trees, and in that way kill them. They also think that goats wholly eat the hazel and other small brush. There is absolutely nothing in this. The manner in which goats kill brush is by continually cropping the leaves which serve as the lungs of the brush. This materially weakens the brush by decreasing its supply of nourishment, and ultimately this starvation penetrates to the extremities of the roots and prevents further sprouting. All kinds of brush are easily killed in this manner. Naturally, some varieties of bushes and stumps are more difficult to exterminate than others, but two years' continuous trimming usually stamps out even the most resistant classes.

"To clear the worst brush, do not cut down anything that the goats can reach or bend. The tallest or largest brush should be left uncut. All trees or saplings should be cut, and thereafter the goats will keep the sprouts down. In case stumps are allowed to sprout one year before the goats are turned in, the sprouts need not be cut. About two hundred goats for forty acres of brush will in two or three years make the land like a garden. If the pasture has only patches of brush in it, turn in a few goats, and more grass will result for other stock than if the goats were not in, as their manure is wonderfully rich. Goats eat very little grass when they can have access to leaves; in fact, they often let the grass in a pasture go to seed, without touching it, where there is an abundance of leafy growth."

A strong recommendation for this breed of goats is that they prosper in either hot or cold climates. They withstand heat quite as well as sheep do, although they require plenty of shade in hot weather. Angoras cannot endure extreme wet, and are susceptible to foot-rot, and even pneumonia, where they are pastured on low land. They will not remain on undrained land if they are able to escape from it.

Each goat is really his own veterinarian: he displays remarkable intelligence regarding the benefits to his individual health; he will eat until his hunger is satisfied, and then he quits; he will scent the approach of rough weather and will seek shelter before the storm breaks. In many sections of the country the goat is the most reliable barometer which the natives know of; he never fails in his weather predictions.

Results in Clearing Brush

As a New Mexico goat-breeder recently remarked, "Goats are different from all other animals—cleaner than swine, more intelligent than horses or cattle, hardier than sheep, handsomer and more dainty than any other live stock. But they just must have a clean place in which to eat, and dry quarters in which to sleep; they cannot thrive when either dirty, wet or hungry. The preferable plan when the flock is used to clean brush is to divide the wood-lot into three or four parts and, as necessity demands, to change the flock from one portion to another, so that they get a chance to fill up on the section which has had a rest while the lot which has been eaten out gains time in which to produce some more sprouts. Do not keep the goats on too extensive range, as they will be unable to eat all the leaves and buds often enough to kill them out in a short period. Also exercise care not to expose the goats to pneumonia by leaving them out in the rain and wet, and give them an occasional dose of tobacco and salt to prevent worms."

One of the most striking illustrations of the utilization of the goat as a sub-woodchopper is that of an Illinois farmer who liberated one hundred and seventy-five wethers on forty-seven acres of extremely heavy brush-land. In the fall of the first year he sold one hundred of the

wethers for three hundred dollars, after running them on this land without grain for four months. From these wethers he realized a net profit of one hundred and fifty dollars. He wintered the rest of the flock on corn fodder, which was fed on the ground, the goats having the run of the forty-seven acres and access to a shed.

Living or Dead the Goat is a Most Useful and Remarkable Animal

He sheared the goats early in April, and obtained a net profit of one dollar per animal from the sale of their fleeces, while in the fall of the second year he disposed of the remainder of the flock for two hundred and fifty dollars. At this time his land was absolutely clear of underbrush, free from all shrubs and bushes, and the following spring he obtained a fine stand of timothy and clover. In addition to clearing his land at practically no expense, he realized a net profit of three hundred and twenty-five dollars from his flock of one hundred and seventy-five goats, nearly two dollars each.



Angora goats are perhaps the most cleanly and intelligent of all our domestic live stock

As producers of a fine quality of wholesome meat and lustrous, heavy-shearing fleeces, Angora goats are unsurpassed. The skins also have a commercial value.

Goat manure is a complete fertilizer, and ranks with that of sheep. One of the most interesting and unique uses to which the goat may be put is that of a dispenser of grass-seed. As a substitute for the wheelbarrow-seeder the goat possesses many commendable qualities. About a pound of timothy, orchard-grass and clover-seed may be fed in the grain of the goat each week; the seed passes through the digestive tract of the animal uninjured, and is uniformly distributed over the fields in the manure in the best possible condition to germinate and make a rapid growth.

Facts About Fleece

The banner goat-farm of America is located in Texas, and numbers ten thousand head of grade and pure-bred Angoras. Last year the owner of this ranch realized a net profit of one dollar per animal from his flock. There are several other pretentious goat-farms throughout New Mexico, California and Oregon. The largest goat-ranch in the Mississippi Valley has two thousand head, but the average flock in this country is from one hundred to five hundred animals.

The custom is to shear the goats early in April. Ordinary hair sells for thirty-five to fifty-five cents a pound. This common grade of mohair, which commands no especially high price, is that whose length is less than twelve inches; the ordinary fleece of one year's growth measures about ten inches in length. The average mature doe will shear from six to nine pounds of mohair each year, while the full-grown buck will yield from ten to fifteen pounds. Previous to shearing, the flock is graded into classes of does, bucks, kids and wethers. The fleeces are marketed according to this

classification. The American Angora Goat Association maintains a special mohair warehouse in Boston, where the fleeces of practically all the Angoras in this country are marketed. At this depot the fleeces are carefully cleaned, regraded if necessary, and baled ready for consignment to the manufacturing plants, where the raw mohair is converted into clothing, rugs, book-bindings, shoes and gloves.

Fleeces whose fiber exceeds twelve inches in length command a special price with the mohair trade. Usually a twelve-inch fleece will bring one dollar a pound, and a correspondingly higher price the longer the fiber.

How Long Fleeces Are Produced

One very beautiful fleece, which was twenty-two inches in length, sold for \$6.50 a pound, the record price for raw mohair in this country. Four dollars a pound is about the ordinary top figure. To produce these extra long fleeces, goats are fed a fairly well-balanced ration the year around.

Instead of being shorn every twelve months, the fleeces are allowed to grow for eighteen months, and then are sheared and marketed. If the fleeces remain on the goats longer than a year and a half, they become matted and rough, and are not considered desirable on the market. The common practice is to leave the fleece undisturbed at the time of the April shearing, and then to cut it early in October, so that the second growth will be of sufficient length to protect them before winter begins.

The fleece of the Angora is composed of a long, silky fiber which is more elastic though not as durable as wool. A mohair fleece is very lustrous and does not mold.

Goats sell on the open live-stock market at from four to six and one-half cents a pound. The last few years over one hundred thousand goats have annually been sold to butchers and packers in Kansas City. Unlike most varieties of goats, the meat of the Angora possesses no disagreeable flavor: it is scarcely distinguishable from mutton. In the Southwest, goat-meat is preferred, and oftentimes a sheepman will keep a few goats just to provide his home supply of meat.

Goat-growers agree that it costs about one dollar a year for the feed and care given the average range goat, which will annually return about two dollars, or a net profit of about one dollar a head. Of course this is under conditions where the flock is browsed and pastured most of the time. The greatest return to the owner results in the rapid increase in the size of the flock, as the does occasionally bear triplets, quite commonly produce twins, and are sure to yield at least one kid each year. The maintenance expense is larger where more attention is devoted to them, although in such cases they usually return a larger profit.

The general farmer can gain the greatest revenue from a flock of goats the first year by purchasing wethers in the spring, letting them browse over his underbrush during the summer, supplying them with a little grain if necessary, and marketing them in the fall either in the fleece or shortly after being shorn. Goats when fat find a ready sale on the market. When poor they are not in demand for any purpose; this is a suggestion and a reason why they should always be kept in good condition. Fall marketing is essential in regions where the climate is so severe that no leaves or buds are available for winter browsing. One experienced goat-raiser criticizes the management of the general farmer who employs the assistance of a flock of goats as brush-destroyers somewhat as follows:

"The tendency is to put too many goats on a tract, with the result that they soon get into a starved condition."

A Rail Fence is a Goat's Playground

"The animals must not be expected to climb trees, nor to eat poles and saplings which are one to six inches in diameter."

There seems to be a military instinct in the flock of Angoras, as each morning they start out in perfect skirmish-line and browse straight across a field without neglecting any leaves or bushes. Usually the bucks run at large with the flock, about one male to fifty females. The breeding season extends over a period of about three months from October to January. The plan is to have the does kid in April, when an abundance of green feed is available and will insure the youngsters receiving an adequate supply of milk. The kids do not mature quite as rapidly as lambs, but as a rule they require less care.

The farmer who embarks in the goat business should enclose his woodland with twelve-inch mesh woven-wire fence. A rail fence will neither hold the goats in nor keep them out. One countryman tells of surrounding a haystack on his farm with a fence sixteen rails high, and still the goats got over it by climbing up the corner of the fence where the short ends overlapped.

There is room for a hundred odd goats on every general farm in portions of the country which are hilly. If well cared for, goats will do more and better work than hired hands, and they will not pay the slightest attention to sundown or pay-day.



Pure-bred Angora buck and ewe. Note the length of hair on the neck

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Make Your Ownership Indisputable

Practical Systems for Identifying Farm Live Stock

THE branding of cattle is perhaps the most familiar system of identification as a means of making ownership indisputable. The ranchman who failed to brand his stock would be at the mercy of the lawless element of the plains country.

To a less degree and on a smaller scale every farmer is subject to the tricks of the sharpster in all cases where any doubt exists as to the lawful owner of stock.

Aside from this distrustful and unpleasant aspect is the satisfaction of marking poultry and stock as a means of keeping a record of their age, performance and financial returns.

For both reasons we believe that the marking of farm animals is an important matter and well worth our while to study.

Toe-Markings and Leg-Bands for Poultry

By A. E. Vandervort

OF THE many different methods of marking poultry so as to make the ownership indisputable I consider the toe-marking method the best for the all-around poultry-raiser. The toe-marking method is very simple. It does not disfigure the birds, and causes very little pain at the marking or afterward.

To mark poultry by this method, a small punch is used. This can be procured most anywhere at a small cost. When the chicks are about a week old they are toe-marked with this punch in the webs of their feet. I prefer marking them when they are young, as the marks will be less likely to give them pain and will not be likely to grow together, as I have had them do when punched when the fowls have reached maturity.

By the diagram one will see that many different marks can be made. I keep a tally in a book of the way I mark the chicks, so that when they are grown up I can tell by the aid of the book almost anything I want to know about each chick. If you have marked them carefully by this method, and kept an accurate record of the marks, and your fowls should get strayed or stolen, you will be able to recognize your fowls without difficulty.

Another method of marking fowls is with the leg-band. These bands are made of aluminum, and are very easily adjusted to the fowl's leg. They come in different sizes for the different breeds, and can be procured at almost any poultry-supply house. I use the sealed band, a band that can be sealed so that in order to get it off one would have to kill the bird. Numbers may be stamped on these bands, and recorded in a book as with the toe-marking.

I think poultry-keepers are making a great mistake in not marking each season's crop of chicks so as to readily keep track of the oldest birds and keep them weeded out. The cost is very little. Of course all this takes considerable time, but the results from marking your chicks will more than pay for the cost and labor.

Ear-Labels for Marking Sheep

By Frank Kleinheinz

THERE are several ways of marking sheep by which ownership is insured. Some breeders mark their sheep with black paint, using a piece of sheet iron on

which their initials and a number are inscribed. This mark is generally made on the wool on the left side of the sheep, and remains there very distinctly until the sheep is sheared. After shearing, of course, the marking has to be done over again. Other breeders identify their sheep by notching the ears. As many as three to four notches are sometimes cut into a sheep's ear, which disfigures the sheep to some extent. This method is more commonly practised in England than in this country. Still other breeders cut off a part of the ear for their mark.

It is Seldom Lost

The best and most satisfactory way of marking sheep, however, is by means of the ear-label. This label is made of metal, and contains a number on one side and the breeder's initials on the other, or if the breeder's name is short, as for instance J. H. Gill, his name can be stamped on the label. This is the best

and safest identification of one's sheep. The label is small and neat, and does not disfigure the sheep in any way nor cause pain at any time. When properly put in the ear by means of an ear-punch, which is usually furnished with a purchase of a number of labels, the label very seldom gets lost, but remains with the sheep throughout its life. When sheep are fenced in with barbed wires, the label occasionally gets caught on the barbs and is torn out; but if put on the lower side of the ear, fairly close to the head, it is very seldom lost. The hole for the label should be punched between the blood-veins in order to avoid bleeding. Labels can be inserted in the ears of old sheep as well as young.

Some people are of the opinion that when lambs have this label inserted when very young their ears are apt to hang down throughout life on account of the weight of the label. This is not true. At the Wisconsin Experiment Station all lambs are marked the second day after birth, and there has never been one whose ear hung down after it was one week old.

Labels are Officially Recognized

In pure-bred flocks it is very essential that the lambs be marked when young, so

and with entire success, is shown in the accompanying illustration. In this system the lower part of the ears is used in numbering the pigs up to 99. The part next to the head is called the base, and the outer part is called the tip. The pig's ears are represented in the sketches as though the hog were viewed from the rear. This is usually the way a person sees a hog and the numbers can be easily read whether his head is up or down.

The System is Easy to Learn

One nick at the base of the lower part of the right ear stands for the number, 1 and two nicks for 2. One nick at the tip of the lower part of the right ear stands for 3; one at the tip and one at the base for 4; one at the tip and two at the base for 5, and two at the tip for 6. Two nicks at the tip and one at the base in the lower part of the right ear stands for 7, and two at the tip and two at the base for 8, while one nick in the center of the lower part of the right ear stands for 9. Thus units are represented in the lower part of the right ear. Tens are represented in the lower part of the left ear in the same manner as units are represented in the lower part of the right ear. By this means a breeding herd of ninety-nine brood sows can be marked with absolute accuracy.

As these sows farrow their pigs, the pigs are marked the same immediately after farrowing as the sows. If then, at weaning-time or some time later, some of these gilts are to be put into the breeding herd, they are given an additional nick, so as to change their number from that of their dam.

If a larger number of hogs are to be marked than one hundred, the upper part of the left ear can be used for hundreds and the upper part of the right ear for thousands, as is also illustrated in the diagram.

In order to make these nicks, a regular cattle-marking punch is used, such as can be bought from various dealers. When the pig is small, or immediately after farrowing, a punch is used with a die that has a rather sharp point, while for the larger hogs the punch has a die with a rounded or oval point.

This system is very easily memorized, and the numbers can be easily and accurately read as soon as the hog is in view. The only way that such markings may be destroyed is when the hogs will fight and either tear off part of the ear or bite in new nicks, and even in such a case the tear in the ear is not rounded at the inner point as is the nick made by the punch.

Keep His Collar On

By B. F. W. Thorpe

THE place for the dog's collar is on the dog, of course, together with the proper identification tag. As a matter of fact, the dog-collar is quite apt to be off the dog just when it should be on him. Unless sheep and poultry owners and stock-keepers generally make persistent, systematic, cooperative effort to secure an adequate dog-collaring law and then enforce it, stray dogs will multiply about as rapidly as bacteria in a swill-barrel.

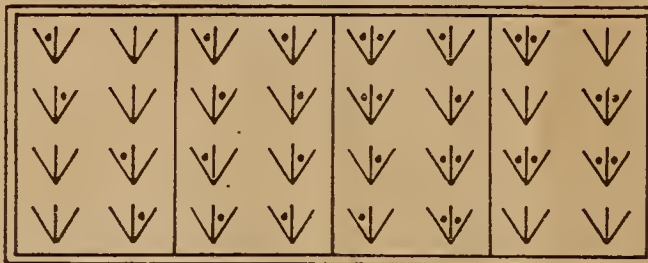
If Farmer A keeps a dog of rather bad habits, he may be able to know just where his dog spends its time if a collar and tag travel wherever his dog does. Further, if Farmer A's dog kills or mutilates sheep, poultry, or other stock, and the dog meets with apprehension and a sudden death in his marauding, then Farmer A will either restrict the wanderings of his dogs or go without dogs.

The actual killings committed by dogs are by no means the full measure of the property destroyed by their depredations.

A Chance for Cooperation

The tagged dog-collar is only one means of getting and keeping the dog on his good behavior. It is, however, the best reasonable restriction now within reach. If sheep-owners and others interested in sheep in any locality cooperate systematically in keeping every dog constantly in its collar, this phase of the battle will soon be won.

When stock-keepers become accustomed to working together for this end, the means for getting complete control of the dog problem will not be far out of reach.



You can readily tell your chickens from your neighbors'

A System of Ear Markings for Pigs

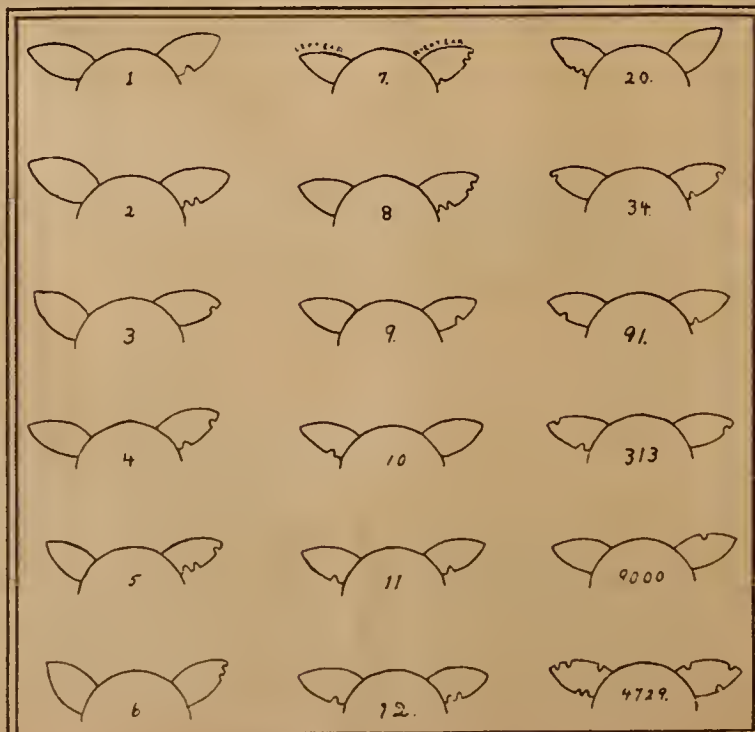
By Wm. Dietrich

THERE are various systems in use by means of which pigs are marked so that they can be identified. Sometimes metal tags are used which have numbers stamped upon them. There are various objections to this system in the case of swine. In the first place, the numbers usually are so small that when the tag gets dirty the pig has to be caught and the tag cleaned before the number can be read. In the second place, if the tag is clamped into the ear it is likely to deaden that part of the ear so that it will slough off and the tag drop out. Such tags also are likely to get caught in the meshes of a woven-wire fence and be torn out.

The system that is used with a great deal of satisfaction by many breeders of the country is by means of a series of nicks in the ear that represent different numbers. Different breeders have adopted different numbers for various parts of the ear and for the right and left ear.

Explanation of the Diagram

The system worked out by the writer, and used with a great deal of satisfaction



You don't need to catch the hog to read his number

Farm Notes

Gravity Cisterns

IN DRIVING along the roads in Columbian and Mahoning Counties, in eastern Ohio, one is surprised to note how the farmers are coming to realize that time is money, and that efficiency on the farm counts for fully as much as in the manufacturing plant or the store. They are beginning to realize that it is cheaper, in the long run, to let mechanical appliances do the pumping of water for live stock. They have found it profitable to have a copious supply of water in the barn, and in the house as well. The value of such a water-supply for house and stock cannot be estimated.

Great Height is Unnecessary

To have a running supply, unless one puts in a pressure system, where the ground is level, requires an elevation; towers are not very satisfactory in cold climates, and the first cost is considerable. But the gravity system can be installed wherever the ground allows a few feet fall. High pressure is unnecessary for the purpose of having a flowing stream. Of course, the strongest flow will be secured with the highest cistern. But even if the bottom of the cistern cannot be so placed as to be above the faucets in the house or the trough in the barn, the system may be installed. The water will flow so long as the top of the water in the cistern is above the tap. The feed-pipe, of course, must be at the bottom of the cistern in either case, so as not to allow the water to stagnate. The cistern need not necessarily be near the windmill or engine pump, but may be an eighth or even a quarter of a mile away, if that be necessary in order to get sufficient fall.



This cistern supplies the house and barn with running water

The cistern in the picture is back of the barn, and on a slight elevation. The house is lower than either, so the flow will be stronger at the house, where the greatest pressure will be needed.

It is built of brick and cement, and is being banked with soil, which, when sown to grass, will make a neat-appearing green mound and keep it cool in summer.

Such a cistern, when built with stone from the farm and by means of the regular farm help, is quite inexpensive, and its benefits are lasting. Care must be exercised, however, in making the cistern and its connections so secure that contamination of the water-supply is rendered impossible.

H. W. WEISGERBER.

Federal Interest in Better Roads

THE Government of the United States has set its face in the direction of good roads. An era of large expenditures from the federal treasury for the purpose of making and maintaining good roads has begun.

This is an important statement of fact, in view of the haggling still indulged in by technical lawyers and constitutional sharps over the question whether the general Government has authority to grant federal aid to road improvement.

The truth is, there is no longer any use debating the question whether Congress has the authority to vote money to improve roads. For years this was argued pro and con in House and Senate. Now Congress has settled the matter by deciding that it does have the authority and will use it.

The Post-Office Appropriation Bill

It has not yet dawned upon many people that the last session of Congress, a session roundly criticized for having accomplished little, has done more to advance the cause of road improvement in this country than dozens of sessions that preceded it. A study of the Post-Office Appropriation Bill will show, however, that much has been accomplished.

True, it did not allow millions of dollars for road improvement. But it took long steps in that direction. It paved the way

to heavy appropriations for roads in the near future. It is a safe prediction that in a few years hence the Government will be making large and regular appropriations for road improvement and that such appropriations will be made as a matter of course, just as money is now allowed every year to provide for rural delivery of mail or to improve rivers and harbors.

The Post-Office Appropriation Bill allows \$25,000 to enable a joint committee "to make inquiry into the subject of federal aid in the construction of post-roads and report at the earliest practicable date." This is one momentous step toward good roads.

Inquiry Into Better R. F. D. Service

The same bill appropriates \$500,000 to be expended in experimental improvement of roads throughout the country. It is worth while to notice that when Congress allowed this sum it had to take the position that federal aid to good roads was lawful and authorized under the Constitution. If Congress can direct a half-million dollars' worth of road improvement, it can direct fifty or one hundred or two hundred times as much of it.

The half-million-dollar appropriation for experimental purposes will result in efforts toward road improvement in all parts of the country—in every State if taken advantage of—which are bound to attract the widest interest and attention. The money is to be expended by the Secretary of Agriculture, in cooperation with the Postmaster-General, "in improving the condition of roads, to be selected by them, over which rural delivery is or may hereafter be established."

Congress provided that improvements made under this experiment should be to ascertain the following:

1. The increase in the territory which could be served by each carrier as a result of such improvement.
2. The possible increase in the number of delivery days in each year.
3. The amount required in excess of local expenditures for the proper maintenance of such roads.
4. The relative saving to the Government in the operation of the rural delivery service and to the local inhabitants in the transportation of their products by reason of such improvement.

The officials charged with the execution of the law have already bestirred themselves. Tentative plans have been made to distribute the money equitably among the States. Each State will receive about \$10,000 if these tentative plans are followed. The law provides that the state or local subdivision in which improvement is made under the half-million appropriation shall furnish double the money furnished by the Federal Government. In other words, if the States respond as they are expected to, \$1,500,000 will be the actual total available for road improvement. The Secretary of Agriculture and Postmaster-General are directed to report results of their operations within one year.

Doubtless it will take more than a year to carry out the experiments in all details. But Congress wants a report in a year for the simple reason that it strongly inclines to liberal appropriations for road purposes. This means Congress feels that public sentiment will not tolerate much longer delay.

Everyone Who Travels Wants Better Roads

Time was when the farmers were about the only people demanding good roads. That is no longer true. The whole country has waked up. Every man who owns an auto or occasionally rides in one is clamoring for better roads. The railroads realize the value of good roads. The merchants perceive the need of them. Agriculture, commerce, communication by mail, all need improved roads. The movement has become irresistible.

It may confidently be predicted that on the strength of the report which will be made by the joint committee which investigates federal aid to good roads and on the strength of the report on experimental road improvement Congress will soon be making large road appropriations. The experience of every land is to be drawn on, from the days of the old Romans with their superb military roads down to the present time. Information is to be got from wherever obtainable. The official in immediate charge of the expenditure of the \$500,000 for experimental road improvement is Director Logan Walter Page of the Office of Public Roads. Of course, the sum of \$500,000 is only a drop in the bucket. All that can be done with this is to get experiments in road improvement undertaken in every State willing to allow two dollars for every one the general Government will allow. Of the \$10,000 allotted to each State, about \$8,000 will be turned over to the State for road improvement proper, while the other \$2,000 will be used for maintenance. With the \$8,000 added to twice that amount given by the State or local subdivision, such as county or town, perhaps two post-roads could be put into first-class condition. Or all the money might be expended in improving a single route to a high stage of perfection. The general policy will be to repair, smooth and improve existing roads rather than build new ones. However, the exact nature of

the work done and the kind of road improvement made will vary greatly with localities. What may be necessary to make a good road in Ohio may not do for Texas. Availability of road improvement material will have much to do with the nature of the work.

Organization of the Work

The local authorities will select the routes. Every Governor will be so notified and advised in detail what the general Government stands ready to do. Every piece of improvement undertaken will be under the eye of an experienced Government road expert.



Good post-roads will help parcels post

Government officials believe that improvement of a considerable mileage of roads in each State under this plan will not only afford valuable information for the Office of Public Roads, but will greatly stimulate state and local authorities in road improvement and construction.

A factor not to be overlooked is the establishment of a parcels-post system. This makes good roads the more useful and makes it the more incumbent on the Government to perfect the post-roads.

The Great Trunk Roads

Much has been heard of the construction by the States or Federal Government, or both, of great trunk lines of roads. One plan is to have great national roads branching out from Washington like the spokes of a wheel. Such roads would be valuable if built, but Director Page believes the way to get good roads in this country is to start at the bottom and work up. In other words, he would have the general Government aid the States to improve and build the roads they need. Then would come the uniting of these roads into a great system of national highways. This, as he sees it, is the natural way for a great highway system to grow up. The problem has to be considered as one to be solved gradually. This is apparent when it is remembered that it would cost \$22,000,000,000 to reproduce existing road mileage in the United States.

The main thing is to get Congress to appropriating regularly and liberally for road improvement along intelligent lines. The experiments with the use of the half-million-dollar appropriation here mentioned are expected to show clearly how best to improve roads. Then, the actual upbuilding of good highways on a great scale, with the Government at Washington and the States working in cooperation, will follow as a fixed and permanent policy. JOHN SNURE.

Our Fretful Age

AMZI feels sorry, in a way, for that famous lawyer who, having amassed a million of money by the practice of his profession, thinks he can now, for the first time, afford to be a farmer.

"He'll miss the uplift of farming," Amzi declares. "There's more comes out of the soil than corn to feed hogs, and the best crop of all is the blessed sense of satisfaction that only a farmer can know. But it's not to be got by hired help and fancy tools—the saving of too much labor. I've seen plowing done by steam, and I don't deny it was a pretty sight, but as I watched the outfit I couldn't help but doubt whether any man connected with it was getting the satisfaction that used to be mine when I plowed with oxen and watched the rich earth billow up over the mold-board. Satisfaction is the best and most profitable of all farm products, since without it all others are only a mockery. You may have it only as you work with your own hands, and under the stress of something, at least, of necessity."

Amzi doesn't pretend to know much about trades other than his own, but he has notions about them notwithstanding.

"So far as I can see," he observes, "the men who work with their hands never work for themselves any more, and the men who work for themselves are the million-dollar fellows whose work is nothing but worry. Is it any wonder that we live in a fretful age?"

RAMSEY BENSON.

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Crops and Soils

My Experience with Commercial Fertilizers

Part I.

"NECESSITY is the mother of invention" we have been told since childhood. It has been, also, the parent of knowledge we would never have acquired otherwise. Necessity has in the past few years caused me to get a limited knowledge of soil problems and fertilizers, to which I would not have otherwise given much thought.

Tiring of the grind of public works, on railroad and in mines, I bought a few acres of land, hoping to be able soon to pay for it and go into gardening and small-fruit growing. But I soon discovered that the cream had been removed from the land by former owners, and as it is almost impossible here in our section of West Virginia to procure manure, and a cow and a few chickens (and lately a horse) would be a long time supplying enough manure to bring it up to its former fertility, I set myself to getting more knowledge of these problems.

That I could not get a stand of clover without first applying lime and that cow-peas were well suited to my needs were some things I learned which have little place in this article except in an indirect way.

What My Neighbors Knew and Thought

My immediate hope was fertilizers, and I found on inquiry among my neighbors, first, very little thought on the subject and, second, a strong prejudice against fertilizers in general. They had mostly bought what they could get for least money or had taken the advice of the agent, who was actuated by the amount of profit on the various brands. They had farmed their lands till they would no longer produce profitably, and then some had deserted their farms to go to the newly opened mines or oil-fields, while the farms grew up to "rip-shin" briars and broom-sedge. Others turned to cheap fertilizers and applied them in very small quantities, and thus prodded the worn-out land to produce a few more crops. Then this failed, and they declare fertilizers a delusion and a snare and curse them, but go ahead and use them, because they don't know anything else to do. A few are beginning to use a little more judgment, owing to the crusade made by the State Experiment Station, and those few at least read the analyses on the tag. Some insist that fertilizers are only stimulants and not a manure, and yet the same persons often declare that lime is used as a plant-food because the effect is often so quickly noticeable.

It is scarcely practical to go ahead and farm with fertilizers alone, that is, without humus; and yet with a little manure and some green crops plowed down occasionally and occasional light applications of lime to correct acidity I am now assured I can farm my soil indefinitely by using commercial fertilizers for the plant-food.

Commercial Fertilizers Do Not Supply Humus

Our experiment station at Morgantown (West Virginia) conducted some experiments, from 1900 to 1905 inclusive, to demonstrate that an old worn-out meadow could be built up to a high state of fertility and yield a profit during the process, by heavy fertilizing or manuring. Without manure the meadow when purchased would produce about a half-ton of hay per acre. At the end of six seasons of trial the part on which heavy annual applications of manure had been made yielded five and one-half tons of hay per acre for the two cuttings, and the net value of the hay above the cost of manuring averaged, for the six years, over \$41 per acre. On the plot to which heavy applications of fertilizers had been made they harvested, the sixth season, four tons of hay per acre, and the yearly net value above cost of fertilizers averaged \$36 per acre.

In his summary the director says that neither the manure nor the fertilizer had "hurt the land," but while the manured plot was in fine condition to stand a drought, being soft and spongy, the fertilizer plot was hard and firm, showing that it needed humus. This proves that while fertilizers do add plant-food and do not hurt the land, yet they will not, of course, supply humus.

How to Buy and Apply

The next problems confronting me after deciding to use fertilizers were the most economical and intelligent ways to buy and apply them. And in passing I will just say I believe the best way to apply them is to sow broadcast on the surface and harrow in, being fairly liberal with the land if you want it to be liberal with you. I also use a small quantity of fertilizer rich in nitrogen in the drill or hill to start the young crop off well.

The fertilizers used herabout most usually contain eight per cent. of phosphoric acid and either one per cent. each of am-

monia and potash, or else one per cent. of ammonia and two per cent. of potash, or vice versa, and cost \$25 per ton. As phosphoric acid is the only ingredient worth mentioning, I wondered why they did not buy a simple acid phosphate with sixteen per cent., or twice as much phosphoric acid, at \$20 per ton. This, however, wouldn't give the agent quite as much profit. Men often used these brands at the rate of 150 pounds per acre, which was about thirty pounds of potash and ammonia, each, on 160 square rods, or about three ounces per square rod, and wondered why it gave such poor returns. Another trouble was that one could seldom buy a high-grade fertilizer on this market; so I decided to mix my own fertilizer. After trying it in a small way, I have not since purchased a ready-mixed fertilizer, and that means for four years.

JAMES D. BOWMAN.

Part II, which completes this article will appear in the January 4th issue.

Quail-Protection

AGAIN the hunting season is at hand. Every day farmers will be asked for permits to allow the shooting of quail or other game upon their farms. The majority of them, no doubt, recognize the benefit that they derive from having the quail on their land.

The quail is far too valuable a bird to be thus slaughtered in the name of "sport"; but where is the so-called "sport" in the killing of any creature, anyhow? They are not needed for food, for less money than the cost of powder and shot would procure a greater amount of "meat" at the market; and what benefits or reward does the farmer receive from the hunters? Does he receive a quail or two, or any pecuniary reward? We doubt very much whether many farmers in the North receive any rewards, and some of them have the work of repairing their fences afterward. Then too, in the North at least, there are too few quail anyhow, for the severe winters tend to decimate the flocks, so that there are but a fraction of their numbers to the square mile that there should be; and on account of this the farmer, the one who suffers from destructive insects, is compelled to buy more poisons for sprays as the years go by if he wishes to save his crops from the ravages of the worms. A farmer will buy Paris green and spray his potatoes, which means his own time added thereto, whereas, if he had a few quail, they would do the work far better and with less loss of vines. All that they ask of him is a little protection. Mr. Farmer, which shall it be? Will you allow Nature to do her work in her own way and without any expense to you, or will you continue to spend your money and time in fighting insects?

Bob-White is Unlike Most Other Birds

The bulletin on the study of the bob-white by the Biological Survey of the United States Department of Agriculture covers many pages, and lack of space forbids us



to quote therefrom; but suffice it to say that the services of the quail, whether in the kinds and number of insects destroyed, or in the amount and kinds of noxious weed-seeds destroyed, place them preëminently above all other birds. In the gathering of these insects and seeds, too, he is unlike most other birds, for he works far infield and not along the edge of the forest, orchard, thicket or hedge-row.

While the law does not yet protect the quail, every farmer can protect all of the birds in his particular community if he will join the other farmers in agreeing not to allow any hunting.

I believe that the farmers as a class are all opposed to the whole "hunting" scheme, and the sooner that an end is put to it, in a settled community at least, the safer will they feel.

H. W. WEISGERBER.

New Times, New Things

The old fertilizer formulas are giving way to the new. At every farmers' meeting one subject should be the fertilizer formula

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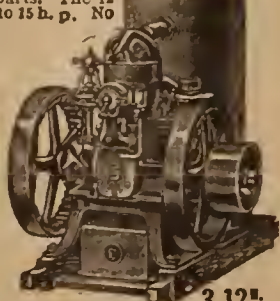
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3-12½

GARDENING

By T. GREINER

Some Good Vine Fruits

PUMPKIN pie skilfully prepared—whose mouth wouldn't water at the thought. With sugar and eggs and cream enough, and plenty of seasoning, the experienced cook can make a good and palatable pie out of any kind of pumpkin or squash. But there is a difference. The cook of little experience and skill needs a good pumpkin, and I have found none better for pie purposes than the Japanese pie-pumpkin shown in the very center of picture. It is of bottle shape and is, like many other things of intrinsic merit, conspicuous neither in size nor high color. The flesh is very solid and fine-grained.

It is Pest-Resisting

The plant is thrifty, little subject to disease or bug attacks and quite productive. More conspicuous, both in size and color, are the three large specimens, representing three types, of Sweet Potato pie-pumpkin shown. They have fine-grained and solid flesh, being next to the Japanese pie-pumpkin in that respect. The seeds of the latter have the peculiar markings, reminding one of oriental letters or writings.

The smaller fruits shown in picture are specimens of Delicious squash, which is

dozen plants), although specimens were of good color and fairly solid flesh, there was not one that I allowed to go into a basket put up for sale, and very few that we used in the family. The distribution of such things as this Trophy means encouraging home gardening with a vengeance. If many of the farmers in this congressional district had the same experience with the seeds sent them with the congressman's compliments, I cannot wonder that they elected him to stay at home after the next session. The congressional free seed distribution is a question of comparatively minor importance. Will an arrow sent from the bow of a Wilson of greater power, and reputed great common sense, reach the vitals of this mischievous imp, the congressional distribution, for votes only, of poor or ordinary seeds?

About Acid Phosphate

In a lecture before the Vegetable-Growers' Association of America, in Rochester, New York, September 5th, Director Thorne, of the Ohio State Station, stated that he had not found an acre of land in Ohio that has been under cultivation twenty-five years or more which does not at once respond to the application of phosphorus, or on which the highest yields could be secured without it.

Nor that we can get full returns from animal manure without its being reinforced by the addition of phosphorus. He believes that the application of five or six tons of stable manure with a few hundred pounds of acid phosphate mixed into it will give



Group of vine fruits—Japanese pie-pumpkin, Sweet Potato pie-pumpkin, and Delicious squash

particularly dry, almost mealy, and of chestnut-like flavor. If any squash can be called "delicious," this is the one. But it requires the addition of plenty of cream or butter to make it smooth and mushy. We prefer it greatly to the old Hubbard, and like it so well that we have our regular mess once or twice a week.

Small Pumpkins Sell Better Than Large Ones

In the matter of selecting seeds of any of these vine fruits, pumpkins as well as squashes, we must be quite particular. If we plant a number of types or varieties of either one in the same patch, and save and plant seeds from them, we are liable to grow the next season all sorts of variations and mixtures. I usually plant some Delicious squash in the sweet-corn patch, and save seeds from best specimens. If I cannot do that, I buy a new lot of seed from a reliable seedsman, rather than risk seed from specimens grown near other pumpkin or squash vines. I shall make a new start with the Japanese pie-pumpkin next year, as I had my vines growing near the other pumpkins, and then plant a little patch by itself or some hills in one of the sweet-corn patches.

I make my pumpkin and squash hills not more than six feet apart one way by eight the other, and leave three or four plants in the hill. It is not large size we are after. Small squashes and pumpkins sell better than very big ones. We want number and largest yield. Close planting gives the large numbers. These vegetables are profitable.

Results From Free Seeds

Even a youngster with a fair amount of reasoning power must come to the conclusion that the congressional free seed distribution is a fake and a fraud. He may



Trophy tomatoes from free seed distribution at left, Early Jewel type at right

wonder what new and wonderful fruit it is that we grew from a packet of Trophy tomato-seeds sent free from Uncle Sam's, or Secretary Wilson's, distributing-point in Washington, through our congressman's kindness. The description on the face of packet tells that the Trophy, although very old, is one of the best colored and finest fleshed sorts we now have, producing through a long season an abundance of handsome fruit. But just compare it, the tomatoes on the left, with the tomatoes of the Early Jewel type on the plate at the right. Both lots represent the average run as we gathered them from the vines. In the whole crop of Trophies (about two

as good results as the application of double that quantity of manure without the phosphorus. Manure is expensive. Acid phosphate is comparatively cheap. The best way is to scatter small quantities of acid phosphate over the manure in the stables, and while accumulating. Fifty cents' worth or less added to a load of manure will double its value and effectiveness, and give us the results of the application of two loads of manure. A good investment this, indeed. If we keep even one cow, or one horse, it will pay us handsomely to keep a bag or two of acid phosphate on hand, and use five or ten pounds a day, scattering it over the accumulations of the stables.

Liming the Land

Clover will not grow in sour soil. Most of our common garden-vegetables likewise refuse to do their best in such soil. Don't imagine, however, that where clover grows and vegetables do fairly well lime may not be of service. Clover springs up spontaneously anywhere in my strong loam, and I grow good crops of vegetables. Yet I find that an occasional dressing of lime, used in addition or even in place of the annual heavy application of stable manure, has a decidedly beneficial effect. By leaving out the manure for one season and using a little lime, we may save a considerable expense and secure even better crops.

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Schumacher Feed

with one part of any good high protein concentrate you are now feeding, such as Gluten, Cottonseed Meal, Distillers' Grains, Oil Meal, Malt Sprouts, Blue Ribbon Dairy Feed—and then note the results. You'll wonder at the increased flow—in the improved condition of your cows—at the way they stand up—at the difference in your profits. Here is the proof:

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Asparagus	100 to 250	Peaches	200 to 300
Beans	60 to 100	Pears	150 to 300
Blackberries	150 to 300	Plums	100 to 200
Cherries	150 to 300	Potatoes (Irish)	100 to 150
English Walnuts	125 to 300	Potatoes (Sweet)	100 to 150
Figs	100 to 200	Prunes	125 to 200
Grapes (Raisin)	80 to 150	Strawberries	200 to 300
Grapes (Table)	75 to 150	Sugar Beets	40 to 75
Grapes (Wine)	90 to 150	Tomatoes	100 to 150

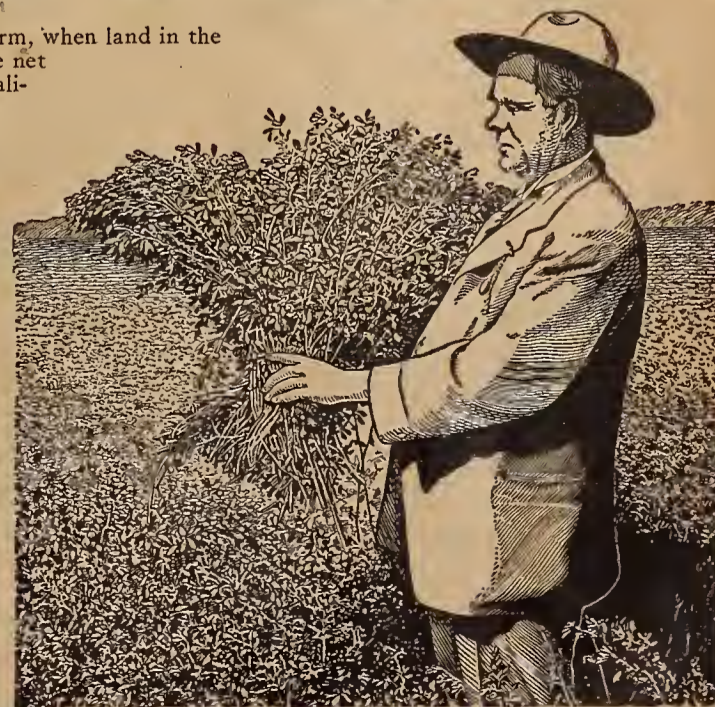
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Garden and Orchard

These Southern Hints are Good in the North

UNDER normal conditions cucumbers are a good paying crop whether grown in winter in a greenhouse or in summer in the open. The season of 1911, around Charleston, South Carolina, was very dry, and the crop was a complete failure, except where irrigation was used. A gardener neighbor of mine had just installed Skinner's Irrigating System in a two-and-one-half-acre field. The cucumbers were planted in rows about six feet apart, and about as far from hill to hill. The pipes were about fifty feet apart, the spray being thrown twenty-five feet each way. His land is near the city and he is able to get cheap water, with good pressure. He told me that the one crop of cucumbers more than paid for the whole thing. He turned on the water and let it run day and night until the plants received a thorough soaking.

More and more the farmer finds it pays to be progressive. This gardener told me a curious thing about this irrigating system. Two years ago, on March 18th, a freeze came when the strawberry-plants were full of blossoms and green fruit, some as big as the end of his thumb. He turned on the water and kept it running all night and until the sun was high next day. Strawberries everywhere were ruined except in this field. Not a black heart was found where the water could do its protecting work.

MARY H. BOWERS.

Secrets in Growing Tomatoes Under Glass

IN THE greenhouse, no matter in what State that greenhouse may be, it is possible to make two good crops a season by planting lettuce or cucumbers in the fall and following with tomatoes. When tomatoes are to be grown, sticks are fastened to each side of the bed one yard apart, and fastened together overhead, forming an arch over the path, just high enough for a man to walk under and work comfortably. Wires about eight inches apart are stretched from end to end of the greenhouse and fastened to these sticks, making an arbor over which the tomato-vines (or cucumbers) are trained and tied with raffia to each wire as they grow. Rainy days, when field work is impossible, are utilized for this work, but the tying must be done even if there are no rainy days. In January, the tomato-seed is sown in flats or in vacant spaces between lettuce or cucumber plants. Transplanting takes place as soon as the second pair of leaves is unfurled. Tomato-plants are put into every available space among the growing crop. You may be sure a plant past its usefulness is not left to take up valuable room. By the first of March the tomatoes are set where they are to remain, one foot apart in the outside row, and in the row nearest the walk three feet apart. This space (while tomatoes are small) between first and second rows is used for growing tomato-plants for the field transplanting. To illustrate: in one set of greenhouses with which I am familiar and which are big enough to grow 6,000 plants for a crop, 45,000 plants, besides, were grown until big enough to plant out-of-doors. Comparing plants out-of-doors April 10th and those under glass

Secrets in Growing Tomatoes Under Glass

"You confounded idiot! That isn't the tree I told you to cut down, it's that one over there."

"Oh! That one over there! Golly, boss, you didn't cum 'round a minute too soon."

of the same age, those out-of-doors were strong and stocky with one or two tiers of buds. Those under glass were many times larger, having more luxuriant leafage and four tiers of fruit and buds. Some of the fruit was about as big as a hen's egg. The ground in both instances had been well enriched with horse-manure. Rain out-of-doors and hose within had given plenty of water, thus showing that heat would bring the greenhouse tomatoes into market a full month before those grown outside. Perhaps the word *protection* is better or less misleading, as the heat came only through the glass from the sun.

All side shoots are picked out, giving all the light and air possible. With no insects to pollinize the greenhouse plants, every clear day between 10 A. M. and 2 P. M. a man goes through the greenhouse tapping twice every branch having an open blossom, using a stick about eighteen inches long and as thick as a lead-pencil. This little tap loosens the pollen, and the flower is self-fertilized. The first year I grew tomatoes in the greenhouse I did not use the stick. In consequence I had few tomatoes from the early buds, and those had few seeds in them; they looked fine to the eye, but the lack of buds resulted in a lack of flavor.

The Earliana tomato is the favorite in the South—it is early, it has a good color and good shape, and it is a good shipper.

MARY H. BOWERS.



enough to receive the tree-roots comfortably. Counting from the first hole, it is a simple matter to dig a hole at every sixth cross-mark. Throw the fine surface soil in a separate little mound close by the hole, to be within easy reach of your hands while planting. Two good men will dig five acres a day.

The trees have meanwhile arrived and have been temporarily heeled in close to the field. Hitch your team to the lumber-sleigh, removing the box, or the stone-barrel will do. Place on it a fifty-gallon barrel sawed in two, half full of water. One or two old blankets complete your equipment. Now put into the tub of water two or three bundles of trees and several bundles more wrapped in your wet blankets.

Put Fine Soil Around the Roots

Take each tree from the tub as needed, look it over quickly to remove any label-wire, also an occasional borer. Cut off all mutilated portions of root. Hold your tree upright in the hole, exactly where the cross-marks would be, with one hand; with the other, pull in the fine surface soil among the spread-out roots, and press down firmly. It won't hurt you a bit to get down on your knees while doing this. The tree should be about as deep in the soil as it stood in the nursery or a little deeper. When the roots are well covered, get on them with your feet, and press down very firmly all around; finish off by throwing a little loose soil on top to stop rapid drying out. Tell your men right at the start how you want your trees planted, just as you show them, no matter if they have notions of their own.

Each tree as soon as planted is cut back to either a whip, or the branches cut back to one bud. Three or four buds are plenty for the tree to make a good top with, and one single bud will often make as desirable a tree as more. The shaping of your future tree comes later. A one-year-old tree of medium size is my choice for orchard-planting.

Keep the Varieties Together

Plant all of one variety first, then proceed to the next one. Have each variety in a solid block. I prefer to have each variety in long rows, however, with one end of each block of trees on the entrance side of the orchard, which brings each variety nearly the same distance from your packing-house.

You will be surprised how quickly your trees can be planted if you proceed in the manner described, and every tree will be lined up perfectly, not only in the square rows, but all diagonals as well will be as true and straight as if laid out by a surveyor.

I set out in this manner a seven-acre orchard a year ago last spring on a rather rough hill. After the holes were dug, two men and myself did the planting in twelve hours.

O. E. MUESER.

Planting the Orchard

GIVEN natural conditions suitable for the growth of and development of a profitable orchard, how shall the land be prepared and what are the various steps for the establishment of the orchard?

I would under no circumstances attempt to plant trees on a newly plowed sod. Plowing under our New York conditions, as well as many others, should at least be done the fall previous, or, better still, a cultivated crop should precede the tree-planting.

After the land has been plowed, harrow several times, finishing off with a smoothing-harrow, to make a fine surface to mark on. Now bring out your three-tooth corn-marker, the teeth of which may be three feet apart, and the old mare, and mark out as for corn. It will add greatly to your own satisfaction to get this part of the work done very carefully; and so it will be best if you will do it yourself and not trust it to the hired man. Begin along the longest side of the field. It may help you to set three stakes to aim at, one on each end and one in the middle, unless you can see from one end to the other, when two will be all you need.

After you have made one trip the full length of the field, look back and note any kink or slight curve in the mark you have just made. Now go right over the same mark, aiming to correct the uneven places in your line. If you are a fairly good marksman, you will now have a perfectly straight line, and you will proceed to mark out the whole field in the customary way as for corn, except that you should take special pains to remedy any deviation from the perfectly straight line. Particularly watch the ends. By looking back along your line every time you have taken a turn, you will discover the kinks; make a mental note of where they are, for you will see them better at a distance than when you come to them, and take them out on your next trip across. If your field is somewhat rolling, your line will tend to become a curve, but you can take care of that in the same way, if you do not wait until the curves become too pronounced.

Having finished one way, mark out across, at right angles, and you will have a perfect checker-board which will eliminate all further measuring. It will take you fully a day to mark out a field of, say, five acres, but it is time well spent.

The marker you use should have an upright handle on each end to steady it by, and you should walk beside the marker, with one hand on the handle, guiding your horse with the other hand. By always walking directly over the last mark, you will know just where and how to manipulate your marker.

Bordeaux-Mixing Simplified

FOR two seasons I have been mixing Bordeaux by a method which I believe makes better Bordeaux and at the same time is more convenient than the old way. By the old way I mean making up solutions of copper sulphate and lime in separate containers, diluting to equal quantities and mixing by pouring both into the spray tank at the same time.

By the new method the copper-sulphate solution is kept as concentrated as possible. A strong solution of about three pounds of sulphate to a gallon of water may be made up in quantity and kept on hand for a long time, as all experienced fruitmen know. It is necessary in this case to calculate exactly how much sulphate there is in each gallon of the liquid so that the right number of pounds may be gotten by measuring out the solution. The lime is slaked in a pail or anything else handy, and enough water is added so that it can be strained into the spray tank through a piece of burlap or sack. Water is then added until there is almost as much dilute lime solution as there is going to be of Bordeaux. There is only enough space left to pour in the small amount of sulphate solution. The lime is stirred vigorously and the sulphate poured in very slowly. The resulting Bordeaux is smooth and of good quality. The amount of copper sulphate, lime and water used will, of course, depend upon the formula. Usually about four pounds of the sulphate or blue vitriol and six pounds of stone lime are used, with enough water to make fifty gallons, or one barrel. The advantage of this method is as follows: The more of the two materials that are dissolved when the mixture is made, the better the chemical reaction can take place. The entire amount of sulphate can be dissolved in a small amount of water, hence it is useless to dilute it further. The extra water is used instead to dissolve a larger quantity of the lime, which even then cannot all be in solution. The method is more convenient because it is not necessary to have mixing-tanks or extra containers and to dilute the two solutions before placing in the tank. Also, one man with a good paddle can stir with one hand while he pours in the sulphate from a can with the other. By the old way, one man must pour in a bucket of lime at the same time that another poured in an equal amount of copper-sulphate solution.

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Poultry-Raising

Profit in Pekin Ducks

THERE are no hard and fast rules for raising and fattening ducks. Indeed, there are almost as many different methods as there are growers. Yet there are fundamentals which must always be observed, no matter whether the grower be an amateur with a few ducks in a dry-goods box or the owner of a modern plant producing fifty thousand birds a year.

In the first place, the houses must be kept dry and free from drafts. They need not be expensive or especially warm; a duck will sit down on its feet and keep comfortable even in zero weather. Dampness, however, causes no end of trouble, so the house must be made with a floor high enough to be dry at all times, and this floor must be covered with a deep litter, renewed as often as necessary. Shavings make about the best litter. Sawdust will answer, and is better than straw, which becomes damp very quickly. Ducks will bring an amazing



Pekin ducks grow quickly to marketable size

amount of water into a house if they have access to a pond or a puddle, or if the yards are muddy.

It is a difficult matter to keep the yards of breeding ducks dry unless the natural drainage be very good. They should be allowed to remain empty several weeks each season, and, if possible, planted to a quick-growing crop like rye, which will make good green food while purifying the ground.

Breeding-pens should not be made too large. As a rule, five ducks to a drake are enough, and flocks are seldom allowed to exceed fifty birds; twenty-five is the usual number. The trouble with large flocks comes from the fact that when excited or alarmed, and even at feeding-time, the ducks rush to one side of the pen and pile up in a heap, with disastrous results. In the late spring some of the drakes often begin fighting, in which case it is best to remove the poorest ones. If allowed to fight, a weak drake may be almost pulled to pieces.

Water for swimming is by no means necessary for ducks, and yet some growers prefer to have a pond for each pen of breeders, believing that the eggs are more fertile. Some of the largest plants, however, are without ponds.

Occasionally a grower allows the ducklings to swim for a few days before they are sent to the killing-pens, but the ponds are made very small, so that the birds get but little exercise. One of the biggest growers in Pennsylvania follows this plan in order to have the feathers well cleaned, but as a rule market ducks never have a chance to swim a stroke.

Unquestionably the Best Market Duck

Water in abundance for drinking purposes is a necessity, and amateurs sometimes make a great mistake in failing to recognize that fact. Ducks fed on soft mash must have a chance to dip their bills in water to wash out their nostrils, or they will be in danger of smothering to death, as the mash gets into their nostrils. Indeed, they sometimes get their nostrils filled with mud and rush to the water-dish. It will be seen that the dish in which water is given must be deep enough so that the ducks may bury their bills in the water. Self-feeding fountains are best for young ducklings, as they prevent the youngsters getting their feathers wet, something which must be carefully avoided.

On large duck farms the ducklings are always driven to the houses on the approach of a storm. It is well to have the water-dishes in the duck-houses all night, as they frequently drink. Many growers keep a lighted lantern in each house at night in order to keep the ducks from becoming nervous or alarmed and piling up in a corner.

Unquestionably the Pekin is the best market duck. As a matter of fact, very little business in ducks was done in this country before the introduction of that breed in the seventies. "Puddle" ducks were raised in

a haphazard way by many farmers for their own eating and sometimes sent to market, but their sale was generally among foreign-born buyers. Several years were required, along with a vigorous campaign of education, in order to get people to try young Pekins. For a time the business was uncertain and many men lost considerable money in duck-plants. Now, however, the industry is firmly established. There are scores of plants producing from twenty to one hundred thousand birds a year. The demand is constant, and the farmer who raises but a few and hatches them with hens is certain of a good market and reasonably sure of a satisfactory profit.

The Pekin has Many Merits

The merits of the Pekin lie in its white feathers, large size, attractive carcass and quick growth. They usually are marketed when ten or eleven weeks old, weighing at that age from four and a half to six pounds. If allowed to go over twelve weeks, they are likely to molt, when they cannot be fattened.

Breeding-pens are made up early in November, and it is considered well to use drakes which have passed one winter. The breeding ducks are chosen from among those hatched earliest in the season, birds which are broad, short of neck, hardy in appearance and strong on their legs are selected, and given as wide range as possible, being allowed grass-land in an orchard, if such a location is available. They are not fed heavily, but are often given a feeding of whole grain once a day, in addition to some mash.

After the breeding season opens, a mash rich in animal food and with a large proportion of green food is needed and may be fed twice a day. There are many feeding systems, some of them complicated and confusing. Nothing of this sort is necessary. A ration consisting of two parts bran, one part corn-meal, one part low-grade flour, with ten per cent. of the best beef-scrap and half the bulk of green stuff will do very well. Sometimes flour is omitted, but it has an especial value in making the mash stick together well. When used, it should be the second layer put into the pail or mixing-trough, as it forms a paste if put on top and the water poured on it. On large plants mixing-machines operated by power are used, and save a large amount of time. When fed, the mash should be crumbly and not over-wet.

Green Food is Relished

The green food is very important. It is greatly relished and serves to provide bulk, which is very necessary in feeding ducks. Moreover, green stuff must be fed generously from the first, for if given in large quantities in the spring, with the birds unprepared for it, egg-production will be seriously interfered with. Probably clover is the best green ration, but rye is more often depended upon because easily grown. It is not profitable to buy green food if it can be grown. Alfalfa is excellent, and cabbages are sometimes fed. Cabbages shredded occasionally and thrown into the pens serve as an appetizer and a stimulus to increased laying.

On the large plants a few eggs are usually laid in November, and frequently incubators are set in December. Amateurs seldom get eggs before the latter part of January. The early eggs run very infertile, often not more than ten per cent. being hatchable. After the first of the year, however, the percentage of fertility commonly runs very high, the eggs hatching much better than hen's eggs. Moreover, the ducks lay with astonishing persistency, once the habit has been established, often giving an egg a day for weeks at a time. The Pekins are excellent layers, too, as regards numbers, a good average being, probably, 130 eggs a season. Frequently amateurs find it profitable to sell duck eggs, as many people like to eat them. Two duck eggs are equal to three hen eggs in cooking. Just before Easter duck eggs are in good demand and bring high prices.

Either incubators or hens may be used for hatching the eggs. When only a few birds are kept, the hen will do very well, although she will have considerable trouble with the ducklings, which will soon cease to have any use for her ministrations. Ducks are seldom used for incubation purposes. As a matter of fact, the average Pekin duck shows but little inclination to sit.

Incubating and Testing Eggs

It is best to set duck eggs as soon as possible, never keeping them over a week, and then in a cool and dark place. Incubators are usually started at a temperature of 102 degrees and kept there for the first week, being run at 103 for the rest of the hatch. There will be no ill results if the mercury marks 104 or even a degree more at hatching-time.

It is not necessary to turn or air the eggs until the fourth day. After that, this work is important. The length of time for airing the eggs will depend upon conditions; it may be five minutes or an hour. The door of the machines ought to be closed while the eggs are out.

Testing may be done on the seventh and fourteenth days. Some operators like to test oftener, as duck eggs deteriorate very rapidly. Sometimes the odor which comes from

a machine when it is opened will be enough to indicate the presence of an overripe egg. Experienced men soon spot the objectionable egg by the high green color.

Feeding Rations for the Ducklings

Twenty-eight days are required for hatching, and the ducklings come out in a hurry at the end. They need ventilation in abundance then. If there is moisture on the glass, it is a sign that more is needed. Some operators find it advisable to open the door a crack, holding it in place with a bit of match wedged in. It is best not to remove the ducklings for thirty-six hours, and they should go to a brooder heated to ninety. Even when ducklings are hatched with hens, considerable labor is saved if they are raised in a brooder.

Ducklings require less heat than chickens. Indeed, too much heat is a common cause of heavy losses. By the end of a week the thermometer may show but 85 degrees and the temperature still be high enough. It is best to watch the birds. If they cuddle down contentedly, you may be sure that all is well. Early in the season some heat will be needed for the entire ten weeks required to get the ducklings ready for market. Brooding will not be necessary, however; a house with a little heat in it will be enough.

After the weather gets warmer, the ducklings may be removed to cold houses when they are five weeks old, having been gradually hardened to the change by being moved from one pen to another, each having a little lower temperature.

There are as many different feeding systems for ducklings as for breeding birds, and some growers use elaborate formulas. Rolled oats and bread-crumbs are excellent for the first week. A little beef-scrap may be mixed with it after the fourth day. For the first two or three days sharp sand may be mixed with the mash in order to be sure the ducklings get enough grit. Some growers put it in the bottom of the water-dishes. After a few days the little birds will eat fine grit from a box.

A crumbly mash of one part corn-meal and two parts bran is another starting food, which, although simple, answers very well. A little beef-scrap and green food must be added after a few days. These things are indispensable. At first feeding five times a day is required. After they are a month old, three feedings will suffice, although it is well to feed four times a day for a week or ten days before dropping to three.

Overfeeding must be avoided—the ducklings should be hungry for every meal. A good plan is to use a feeding-tray in the form of a board with narrow pieces nailed around the sides. The mash may be thrown on this, two rounds being made at each feeding. No more than will be eaten up



How to carry ducks—It doesn't hurt them

clean should be given the last time. Two feedings are really necessary; otherwise, the stronger birds will get more than their share. Having satisfied their hunger at the first round, they allow the weaker birds to eat their fill.

Bran and meal, with beef-scrap and green food, may form the rations after the first week until the ducks are fattened. If deemed desirable, low-grade flour or rolled oats, or both, may be added. The amount of bran is made steadily smaller, however, and the proportion of meal increased. After the fifth week, ten per cent. of scraps may be given. If the weather is hot, the proportion of meal the last week or two is made smaller than if it is cool.

When the birds are dressed, the feathers are carefully saved, being worth about forty cents a pound. The ducks may be picked dry or scalded, according to the market demands. The wholesale prices for ducks run from fifteen to thirty cents a pound. About forty-five cents is required to raise a bird weighing five or six pounds, so, as will be seen, the profits are well worth while. It is not a business to be taken up lightly though, for skill and experience are needed to get best results. ARTHUR L. BLESSING.

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Breeding for Egg-Production

BEFORE an intelligent plan can be formed for the improvement of any quality of an animal by breeding we must know something about how the quality or character to be dealt with is inherited. Furthermore, the wider and deeper the breeder's knowledge on this point, the more certainly and quickly will the desired results be attained. Breeding for increased egg-production in poultry has attracted wide attention in recent years. Many poultrymen have tried it. Some have undoubtedly had excellent success in building up high-laying strains, though in too many cases a mistake in breeding after the strain was established has destroyed in a generation or two all that had been gained. Others have failed completely to effect any improvement in the production of their flocks by breeding. This fact sufficiently indicates that there has been a dearth of precise information as to just how the character fecundity or egg-productiveness is inherited in fowls.

The First Theory was Incorrect

Some fifteen years ago the Maine Agricultural Experiment Station started a comprehensive series of experiments in breeding poultry for increased egg-production. These experiments were based on an assumption regarding the mode of inheritance of egg productiveness. It was held that the daughters of high-producing hens would themselves be high layers, and that by continually picking out as breeders the best layers, on the basis of trap-nest tests, one would presently build up a flock which would show uniform high productiveness.

This theory was tested by ten years of trial with large flocks. The outcome was precisely the opposite to that which had been predicted at the beginning as the necessary and sure result. The flock did not average to lay so well at the end of the long period of trap-nesting as it did at the beginning. Something plainly was wrong with the theory of breeding on which the experiments and the prediction as to their outcome were based.

Detailed studies were next undertaken in order to find out where the difficulty was. It very soon became apparent that this meant the working out of the precise method by which egg-productiveness is inherited. As a first step in the analysis, a complete individual pedigree of every bird was kept, so that every one of its individual ancestors, both male and female, might be known. The first striking fact which came out of such individual pedigree study was that the primary assumption of the old system of breeding which asserted that the daughter of a high-laying hen would herself be a high layer (in greater or less degree) was by no means a universal truth. On the contrary, it appeared that sometimes the daughters were, and sometimes they were not, good layers. The egg record of the mother could not be relied on at all as a basis to predict the probable egg-production of the daughters. Large masses of figures proved beyond question that there was no definite relation between mothers' and daughters' productiveness. This meant a recasting of all the old notions on the subject and the building up of a system of breeding for egg-production which should rest upon sure knowledge of the mode of inheritance of the character, rather than upon an incorrect hypothesis.

Two Factors are Inherited Separately

After five years of study and experimentation, the key to the solution of the problem was found. Without going into the details (which will shortly be published in full in a bulletin of the Maine Agricultural Experiment Station), the following gives the essential features of the mechanism of the inheritance of egg-productiveness. Egg-production in the breeds of fowls so far studied (and by inference in others) depends upon and is determined by two physiological factors, one of which may be called the "normal production factor," and the other the "excess production factor." These two factors are separately inherited. That is, a bird may bear either one independently of the other, or it may bear both of them together, or, finally, neither one. In order for the bird to be a high producer, it is necessary for both of these physiological factors to be present. Either one of them when present alone makes the bird a mediocre or poor producer. Both production factors may be borne by the male, though, of course, they do not come to expression in him, since egg-producing is a purely female function. Either or both pro-

duction factors may be transmitted by the male to his progeny, both male and female.

The curious and interesting fact, which gives the clue to the whole matter, is that the excess production factor, which must always be present in a female if she is to be a high producer, is never transmitted from mother to daughter. It can only be passed by a female to her sons, never to her daughters. This type of inheritance is technically known as "sex-linked" or "sex-limited," because of this limitation in the transmission of the character, imposed by the sex of the offspring. Other characters of fowls besides egg-production have been shown to be inherited in this way, notably the barred color pattern of Barred Plymouth Rocks. The biological basis of sex-limited inheritance is found in the fact that sex itself is inherited, and a certain definite relation is maintained between the hereditary sex-determiner and the determiner of the sex-linked character. Thus, in regard to fecundity, the fact simply is that those eggs which carry the female sex-determiner (that is, which will develop into pullets) never carry the excess-production factor.

The Influence of Good Roosters

How, then, does a hen ever get to be a high layer if she cannot inherit this quality from her mother? The answer is simple: the high-laying hen gets the excess-production factor, which is necessary to make it

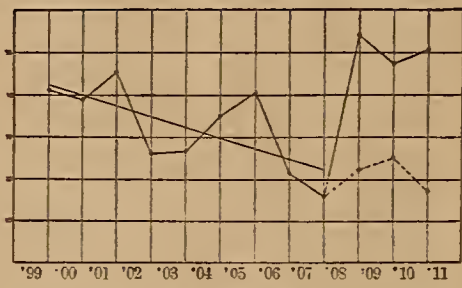


Diagram showing the effect of selection for strains of high and of low egg-laying ability, according to the plan of breeding which is based on the method of inheritance. The solid line denotes average of all "high lines"; the dotted line the average of all "low lines." Up to 1907 the attempt had been to increase egg-production by breeding merely from the highest layers, regardless of pedigrees. In subsequent years individual pedigrees have made it possible to isolate strains, which breed true, some to high-producing powers, others to low. Note the rapid rise in the solid line from the year 1907.

a great producer, from its sire. Here, too, is evidently the clue to the riddle which has puzzled so many who have trap-nested their flocks, when they find that some high-producing hens have good laying daughters, while other equally high producers have daughters that are poor layers. It all turns on the male used as the sire. Depending upon the hereditary constitution of the males used, it is to be expected that different proportions, varying all the way from one hundred per cent. to none, of the daughters of a high-producing hen will be themselves high producers. This is proved by experiments extending over a period of years and involving large numbers of birds.

These results demonstrate the importance of getting the proper kind of males with respect to their hereditary constitution if one is to make permanent and definite progress in breeding for increased egg-production. The aim is to get males that are "pure-bred" in regard to the excess-production factor. These can only come from high-producing mothers bred with certain types of males. It is of the utmost importance in any scheme of breeding for production to select high-laying females, but it is not, as has been generally supposed, because their daughters will be good layers—this may or may not be the case,—but rather because only from such mothers can males be obtained which will ultimately transmit to their daughters those qualities of high productiveness which are the goal sought. RAYMOND PEARL, PH. D.

Drafts at Night

COLD air will not injure fowls when they are turned loose in the yard and can exercise, but when on the roost at night and a cold stream pours on one of them from sunset to sunrise the chances are that the bird will soon begin to droop, perhaps have roup, and then all the others will take the disease. An open crack or nail-hole is worse than the whole front of the house open, as small streams of air on fowls nearly always prove harmful. So, when you are fixing up for the winter, look out for these air-drafts. A. E. VANDERVORT.

You May Dip Poultry

ALL sorts of poultry may be dipped, excepting the very young. After the feathers start, it does no harm. This is the method: take one-fourth pint of any standard coal-tar dip, and mix in two and one-half gallons of slightly warmed water, so as not to chill the fowls. Plunge the fowls into the solution, ruffling the feathers so as to wet every part of the skin.

Immerse the head for just an instant. Of course, you should choose a bright, warm day for this, so the fowls will dry quickly, or do as my neighbor did. She thought she must dip one turkey that was not acting well, and as it was very damp and cold she wrapped it in an old cloth and laid it on the oven-door.

Repeat the dipping in a week or ten days, and spray all coops and nesting-places with a stronger solution. Paint the roosts with the full-strength dip. Repeat when necessary. If done at the right time, it will mean a louse-free coop.

We use the stronger solution for scaly-leg and other scale diseases with the best results. Why not dip chickens, turkeys and other fowls, as well as sheep, hogs and cattle? It is just as practical and no more bother in the long run than any other method. Try it. FLOSSIE BARTHOLOMEW.

Women and Hens

"WHY is it that women are so far superior to men in raising and caring for poultry on the farm?" Repeatedly have I been asked this question. For a long time I gave the question no weight; but more recently it has appealed to me, and I have been asking myself: "Is it really a fact that they are?" I have been closely observing; and here are some of the results of my observations:

The average farmer is a busy man. His work is heavy and is "never done." Farming is his business, and he is in business for a purpose, and that purpose is not caring for chickens. Hen-raising is but an indifferent, neglected side-line with him, that he knows and cares but little about. He spends no time, money or thought on hen-breeding; the result is, his stock is very inferior. He may throw out some whole corn once or twice a day, or he may toss them a few ears of unshelled corn; or he may think there is plenty of grain scattered about the place for them to pick up, and give them nothing. When thirsty, they go to some filthy depression in the barn-yard or feed-lot where water has collected.

Women Make Hen Raising a Serious Business

The result is that when eggs bring the best prices his hens do not lay. The great need of controlling their moulting is unknown to him, so his hens moult at the wrong season. They roam at large, steal their nests and brood according to their moods, which is always to his disadvantage. Chicks receive no attention, and many perish. When asked about his hens, his reply is: "Oh, I am too busy to be bothered with such a little business. Hens are a failure." With these ideas in mind, he is not prompted to read poultry books or journals for information. He lives and dies without realizing that the hen business is much like his pocketbook. If he would take money out of it, he must put money in it.

With a woman conditions are the opposite. The care of hens is no side-line. It is her business, and she considers her business seriously and studiously. She is in earnest, and compels success. She realizes that her business will not run itself, any more than the farm or the department-store. She enjoys her business, and takes great delight in it. She is enthusiastic. "I love every hen on the place," she declares. She expends her time, money, labor, patience, care and affection on her hens. She lives much with them; she broods over them, watches and pets them, names them and calls them by name; she strokes their feathers and talks to them as to a person. She studies her poultry books, magazines, market reports, her hens, their conditions and the difficulties confronting her. She gives her poultry an abundance of feed and water. She is always watchful of every mood, condition and symptom of her daily companions. If disease invades her kingdom, she knows it at once. She isolates the ones affected. She has a hospital. She is a nurse by nature and a hen-physician by study. She applies remedies and patiently watches.

Her Hens Seem to Know what the Market Report Means

She has time for all these things, of course; it is her business, and she is "in love with her business." Her hens are fed a great variety of food, in proper quantities and at regular seasons. They are not too fat, and they are not too lean. They are strong, healthy, vigorous. They moult on schedule time and are prepared for late fall and winter service.

Are her hens appreciative? Watch her feeding them. They enjoy her society. They appear to be trying to talk to her. They perch on her shoulder, cat out of her dish or hand and flock about her until she can hardly take a step. But that is not all; it is but a small part—just the beginning. When eggs stand high in the market reports, her hens show full appreciation of her investment in them, in kindness, care, patience, devotion, affection. And when the markets call for fries and broilers, money flows her way.

It is a joy to the woman, every step of the way. It is her business. But to the farmer it is more of a dread and a nuisance. GEORGE W. HILLS.

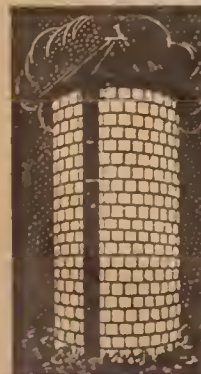
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The Fly and the Dairy

WE ARE told to "swat" the fly. It's not giving the fly his deserts. We should be told to swat him twice, to be sure he's dead and that he remains dead. We don't treat him fairly as to titles. We call him only the typhoid fly, when his right name is the typhoid, tuberculosis, cholera, dysentery, smallpox, cerebro-spinal meningitis, contagious ophthalmia, diphtheria and other diseases fly.

He starts out alone at the beginning of the season, and at the end his family is increased to 7,000,000 disease-spreading grown-ups. He carries as many as 5,000,000 bacteria on the outside of his body, and a good many on the inside.

His birthplace is the exposed manure-heap and outhouse, and were filth unknown upon the earth the domestic fly would not and could not exist.

He visits the unscreened stable and is more than attentive to the tuberculous cow, and, for a change, flies out and rests and suns himself on the milk-utensils put in the sun to drain, air and dry. This exposure of unscreened milk cans and pails to the fatal disease-breeding flies is universal, and they, when so exposed, undergo contamination, and the milk becomes infected.

A reading of a digest of the milk-supply literature of the world leads to but one conclusion and only one, just as Metchnikoff, the greatest milk authority in the world, has put it, "All milk should be machine-clarified, and then pasteurized." Get the physical dirt (90 per cent. of which is manure) out of it, at once after milking, by machine-clarification, and then pasteurize it, 145° F. for thirty minutes.

The seven ages of milk may be summed up as follows, and to the credit of San Diego, California. She is striving to be the spotless milk city of the world, and is fast evolving into the golden age of milk.

The Seven Ages of Milk

1. *Neglect Age*—Meaning anything and everything unsanitary; filthy stables and as filthy cows, dust, flies, unclean cans and pails and unclean milkers perhaps, using unclean milking methods, and careless cooling and storing of the milk.

2. *Water Age*—When twenty-five to fifty per cent. of water was added to the milk to make it hold out.

3. *Skim Age*—When all or part of the cream was skimmed and kept at the farm, and the milk sent to town.

4. *Preservative Age*—When salicylic and boracic acids were used, and then formaldehyde to keep the milk chemically sweet.

5. *Tuberculosis Age*—When milk was found to be, through the bovine bacillus, a transmitter of the white plague.

6. *Pasteurization Age*—When all "uncertain" milk was made safe through application of heat, 145° F. for thirty minutes, correctly, honestly and thoroughly done.

7. *Golden Age*—When all milk shall be "certified" in the full and sanitary sense and meaning of the term as to environment and methods, machine-clarification to take place immediately after the milking, when the milk is fresh from the cow and before germ-multiplication has commenced, either from the foreign matter or from the slimes already present in the milk; then cooling and bottling at the farm, pasteurization after bottling, to make assurance doubly sure.

CHARLES CRISTADORO.

Brittle Hoofs

MEN often ask why horses' hoofs become so brittle that they will not hold shoe-nails. The reasons are not far to seek. In many instances man is himself to blame. Nature provides the hoof with an external layer of varnish. It is secreted by the "perioplic band" and is known as "perioplic." Its purpose is to cause retention of the natural moisture or oil of the hoof. When this is accomplished, the tubes and pores of the hoof do not dry out by evaporation; consequently they retain their normal size and healthy texture. Man rasps away the outer coat of varnish after shoes have been put on. In preparing the hoof for the shoe, he also pares away the sole; then sears and dries it by applying red-hot shoes. At the same time he cuts away the bars which are braces formed by the turning in of the hoof walls at the heels and which are intended by nature to keep the heels from contracting.

Mutilation Causes Brittleness

The frog, too, is pared with the draw-knife, and now the conditions are such as will best insure drying out of the hoof. This mutilation of the hoof is the first step in causing brittleness. The next cause is allowing the horse to stand on dry board floors in the stable. Nature intended the horse to run outdoors on grass and all manner of soil, where moisture would be insured and the hoof kept worn down level by exercise. The influence of manure and urine in the stable is also to cause an unhealthy state of the hoof horn, and heat or fever, due to con-

cussion from long drives on the hard road, completes the work. To prevent brittle hoofs, do not allow the blacksmith to rasp the hoof walls or cut away soles, bars or frogs. It is legitimate to rasp notches for the proper clenching of the nails, and to remove flakes of sole and frog horn which are already dead, useless and in the process of sloughing, but that is all of this sort of work that should be done. The stable floor should be kept clean and well bedded. A dirt floor is suitable for unshod horses. Dry board floors are most injurious. Fresh bedding should be plentifully used. Cold, wet swabs of felt, or wet cotton waste, kept tied around the hoofheads, will tend to improve conditions when hoofs have become brittle. Do not poultice the hoofs; but it is good practice to soak the feet in cold water for an hour or more twice daily and then smear with any simple greasy hoof-dressing. The constant use of strong, stimulating hoof-dressing on healthy hoofs in many instances causes a dry, feverish and brittle condition. As treatment for brittle hoofs, after removing causes mentioned above, apply every other night at junction of horn and hair a little of a mixture of two parts of oil of tar and one of oil of fir balsam. In six weeks the hoofs should be able to hold shoe-nails; then the mixture should be applied twice a week.

A. S. ALEXANDER.

Twa Horses

Look here on this picture, and on this. —Shakespeare.

AMONG the lower animals, as well as among humans, there are some of high and some of lowly station. In Burns' great poem, "The Twa Dogs," one of the characters is a dog of high degree:

"His locked, letter'd, brow brass collar Show'd him the gentleman and scholar."

But his boon companion, with whom he conversed learnedly about the "lords of the creation," is nobody but a plowman's collic, an honest, faithful tyke, but one of the middle or lower classes.

You do not have to work the imagination greatly to think of widely different ranks occupied by members of the horse family. We'll call the first Teddy, the petted favorite riding horse of the bonny lady. He carries himself with an air of pride, holds his head erect, as though sensible of his own and his mistress' beauty. He is well groomed and well cared for. He is one of the aristocracy.

Turning to the opposite thought, we see poor, forlorn old Dennis, knock-kneed and blind.

He is standing out in the fast-falling snow in front of the grocery-store, hitched to a delivery-wagon. There is no pride in his attitude or bearing. He never dances or prances or tries to show off. He carries Christmas cheer, sweetness and gladness to hundreds of happy mortals, but appearances would indicate that his own lot is wretched and cheerless. His driver has thrown a blanket over him to protect him from the storm, and it is to be hoped that he gets kind treatment when his day's work is done.

Poor old drudge! Once, perhaps, he was blithe and debonair. Now he is down and out.

J. F. LEWIS.

Gadfly Grubs

"WHAT causes some of my sheep to hold their heads to one side, like hogs that have blind staggers?" asks an Indiana reader.

I will say that the presence of gadfly grubs in the upper passages of the nostrils and head is a common cause of staggers in sheep, and the affected animal may hold its head to one side, or constantly try to throw its head back over its spine. In such sheep there is usually a discharge from the nostrils, and this may cause coughing or sneezing.

There is no specific remedy for this condition; but sheep usually manage to withstand the trouble if generously fed. The important thing is to prevent the depositing of gadfly larvae in the nostrils of sheep during fly-time in the summer. This may be managed by daubing pine-tar on the sheep's nose during the time when flies cause stampeding.

A. S. ALEXANDER.

Cement-Floor Feeding

AN OHIO reader asks our advice in regard to feeding mill-feed from cement feeding platforms and floors.

If the floor is kept perfectly clean and if the animals can reach the floor without difficulty, there will be no injurious results following feeding from a cement floor. If the floor has been left very rough, so that in eating the grain from the floor the cows would wear the skin from their tongues licking the grains, of course there would be a tendency to injure the cows and prevent them from eating normally. If the floor is smooth and clean, no harm will follow feeding from it.

There is much more danger from having cows stand on a cement floor where there is no insulation under it to prevent its getting cold and frosty. If it is cold, it will impart a chill to the animals when they are lying down. To prevent this, it is often advisable to lay board or plank floors directly on the cement floor.

B. F. W. T.

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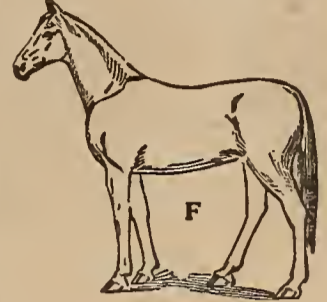
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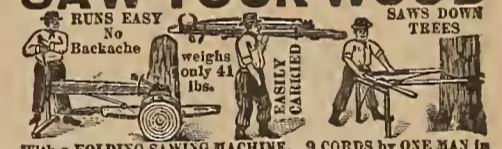
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The Market Outlook

The Mutton Market is Quiet

NO CHANGE of importance has occurred in the sheep-market in the past two weeks, and mutton still remains the cheapest of all meats. Demand has been steadily good, supply has been equally so, and there has been nothing to complain of save the old, and apparently incurable, poorness of quality. It is incomprehensible how men who take a pride in sending their cattle and hogs to market in perfect condition are willing to send in their sheep, if they have any, looking as though they had never come across a square meal. There are, thank goodness, men who are proud of their sheep, but they are hard to find.

Toward the end of November it looked as though the eight-dollar mark would be reached for top lambs, but as usual the market at once became flooded with the undesirable, and the upward tendency was checked. This is probably all for the best, for it appears that as soon as that mark is reached the public declines to buy mutton; and \$7.50 for lamb and 30 cents for wool are really quite remunerative prices. Fat sheep at \$4.50 do not pay so well. Luckily the needs of the feeders have provided a good market for much of this unfinished stuff. Lambs for this purpose sold freely from \$5.75 to \$6.50 per hundredweight; yearlings, from \$4.75 to \$5.50; wethers, from \$3.50 to \$4.50, and ewes from \$2.50 to \$3.50. Broadly speaking, prices of fat sheep and lambs have, except for top kinds, been a little more in favor of the buyers.

Wool and the Tariff

The wool-market has been rather quiet, the old tariff bogey having again raised its head, but there has been no fall in prices, nor is it probable that there will be any, unless, when that question comes to be settled, a very sweeping reduction in the wool scale is made.

J. P. Ross, Illinois.

Eastern Demand Aids the Western Hog-Market

THE hog-market has assumed the appearance of battle. On one side the large packers are combined in an effort to lower prices at every opportunity. Every heavy run offers them an advantage which they eagerly grasp. Pitted against these are the speculators who eagerly point out every bull argument.

With them the eastern demand is their greatest aid. Whenever marketing in the eastern cities lulls, shipping orders come to the western buyers, and they are able to hold the progress of the packers' bear campaign.

The future market depends much upon the ratio of receipts between the eastern and western markets. If the heavier winter runs begin to make their appearance at the western markets before the local eastern supply is exhausted, the large packers will have the advantage, and prices will be apt to decline; while if the main western supply holds off until the East has cashed in, the market should hold its own.

It remains to be seen just how large the winter run from the corn-belt States will be. There is great variance of opinion as to its size, but this, however, is known: the territory close to Chicago has few hogs, as but little breeding stock remained after the epidemic of cholera a year ago. The territory tributary to the Missouri River markets raised a good crop, but cholera this fall has sent many pigs marketward. However, there are lots of hogs left there yet, and there is plenty of corn upon which to feed them.

When this region begins to make the winter clean up, prices are apt to be lowered some. Until then a sensitive market can be expected, with just enough hogs to take care of temporary needs with none left over to go into the cellars.

LLOYD K. BROWN, South Dakota.

No matter what his politics may be, no farmer is fond of a stand-pat horse.

No Signs of Cheaper Beef

IT NOW appears certain that we will have good prices for cattle all winter. There is no question but that, with every nation in Europe on a war footing, our surplus supply of canned meats must be in great demand. Considering the quality of the fat cattle coming to market, it is surprising how much they sell for, and there are no signs of any cheaper beef this winter.

One load of feeders sold this week in Sioux City for \$7.25. Even with comparatively cheap corn (36 cents) these cattle must bring a good price to pay out. There are not a great many cattle on feed. Owing to the hog-cholera, which has been very bad in Iowa, a great many farmers have lost their hogs and will not feed cattle this winter. Again, we have a few cattle-feeders who are buying stock hogs at \$8.50 in Dakota. These hogs are being inoculated with hog-cholera serum.

If the present prices continue, hogs following cattle will pay out. Corn is not being marketed freely. Farmers are not keen to sell at the price, and I question if anything will be made this year by holding it. Money is rather tight and will continue to be so



Will they escape the cholera?

until the crops are cut loose. There is great interest all over the State of Iowa in the inoculation of hogs against hog-cholera.

The situation at present is rather confusing. First, we have the state veterinarian telling us that if good serum is used it is an absolute preventive, but that they are unable to supply the serum and that a great many of the serums on the market are unreliable.

Wanted—More Serum

In consequence we feel between the devil and the deep sea. It certainly does look as if a great hog-producing State like Iowa, which this year has lost millions of dollars' worth of hogs, could well afford to increase the present appropriation of \$5,000 to \$25,000, the sum required to make enough serum to supply the State.

W. S. A. SMITH, Iowa.

Making Farming a Business

"UNCLE RETAWOL, is farming a business?"

"Certainly, as much as that carried on by any other manufacturer."

"Should the same principles govern him that govern the successful factory manager?"

"Yes. He should study how to reduce cost or to increase production, and at the same time preserve or increase the quality of his products."

"Why do so many of the average farmers fail to receive even good wages for their labor after paying expenses?"

"Because of their inability to tell the cost of their produce, etc. They raise or produce, sell at such prices as the buyer offers, and the condition of the pocketbook after paying all debts is the only knowledge they have of gain or loss."

"Is such a management any safer for the farmer than it would be for the merchant?"

"Not at all. Not so safe, as the merchant can guess and set his prices high enough to cover waste, while the farmer sells for the price offered by the buyer."

"How can a change be made?"

"One way is through the influence of farmer organizations. Another is through the rural school work. Another is the influence brought to bear on the farm manager through the boys' and girls' contests in certain crops."

HARRISON LOWATER.

Cheer be Yours

By Berton Braley

NOW the year is near an end
(Ah, but time is fleeting),
Now from faithful friend to friend
Goes the Christmas greeting;
Now we banish care and iling
Blues and melancholy
Out the window, while we string
Mistletoe and holly!

There's a season to be stern,
Grave, uncompromising,
When we find, at every turn,
Problems grim arising:
But on Christmas, I maintain,
Gaiety we're after.
Seeking, in a lighter vein,
Mirth and love and laughter!

Therefore, here's our word of joy
And of rhyme and reason,
"Cheer be yours without alloy
Through the Christmas season,
May good fortune be your host,
Happiness imbue you;
Gentle Reader, here's our toast:
Merry Christmas to you!"

Making the Most of Sheep

AN IDAHO reader whose work is demanding a more thorough knowledge of sheep recently wrote us. The letter was referred to Mr. E. J. Iddings, Animal Husbandman of the Idaho Experiment Station. His reply to the questions asked is given below. It is worthy of much consideration.

What Are the Best Sheep?

"Which breed is best, all things considered, for irrigated country, Shropshires, Oxfords, Leicesters, or other breeds? How do Shropshires compare as to healthfulness, freedom from disease, prolificacy, etc., with the Oxfords?"

The sheep that will prove most profitable on the irrigated farm must produce both mutton and wool economically. In the past wool has been considered of greater importance, and has, for the average farmer, returned more profit. Agitation of the tariff revision, however, has depressed the wool-market and increased the popularity of mutton as an article of human diet, and during the past few months the unprecedented prices for beef have given mutton a place of great importance among our meats. Mutton promises to be a more certain source of revenue than wool in the next few years.

The strictly mutton breeds of sheep are the Southdown, Hampshire, Shropshire, Oxford and Suffolk. Of these breeds the Shropshire and Hampshire have been far more popular in Idaho, and either of these two breeds will do well on the irrigated farm. Both are black-faced breeds, with medium-long wool. The mature Shropshire ram weighs from one hundred and seventy-five to two hundred and twenty-five pounds, and the ewes from one hundred and twenty-five to one hundred and seventy.

The Hampshire is heavier by from sixty to ninety pounds. Both breeds are prolific, and both are suited to the production of early-maturing mutton. The Hampshire lambs, however, grow bigger and faster and are excelled by the lambs of no breed in early maturity. The Shropshire shears a long, fine and even fleece, and exceeds the Hampshire in weight by from two to four pounds per fleece. Both breeds are hardy enough to do well under average irrigated-farm conditions. The Leicester is a long-wooled breed that has not proven popular in the West. Cotswolds or Lincolns are preferable among the long-wooled breeds for Idaho conditions. These breeds shear heavier than some of the middle-wool or mutton breeds, but lack in mutton form and early maturity.

Working Into Pure-Bred Stock

"I am thinking of getting range lambs, Merinos if possible, and crossing with Shropshires. What do you think of starting this way and then gradually working into pure-bred Shropshires?"

Range Merino ewes can be very successfully used as a foundation of the farm flock. They can be purchased cheaper than high-grade Shropshires or Hampshires. By using the pure-bred Hampshire or Shropshire buck, a splendid black-faced grade flock can be rapidly made from this Merino foundation. After some experience with this flock, the farmer will be much better fitted to buy pure-breeds and to start a pure-bred flock. The Merinos are better grazers and withstand storms and wet weather much better than middle or long wool breeds.

Where Can I Get Information?

"I would like a little information as to the literature relating to sheep and the relative returns of mutton sheep and wool sheep."

There is a great deal of valuable and up-to-date information on the breeds of sheep, sheep-raising and mutton and wool production to be obtained at little expense. Among the best books on sheep are "Sheep Farming in America," by Jos. E. Wing, published by the Breeder's Gazette, Chicago, Illinois; "Modern Sheep Breeds and Management," by "Shepherd Boy," published by the American Sheep-Breeder of Chicago, Illinois; "The Domestic Sheep," by Stewart, published by the American Sheep-Breeder of Chicago, Illinois, and "Sheep Management," by Frank Kleinhertz, published by the author at Madison, Wisconsin. These books cost from \$1.00 to \$1.50 post-paid. In addition, I suggest that you write the United States Department of Agriculture at Washington, D. C., for Farmer's Bulletin 96 on raising sheep for mutton. Farmer's Bulletin 49 on sheep-feeding. Farmer's Bulletin 183 on Meat on the Farm, butchering and keeping. Montana has done considerable investigation work on sheep-feeding and has issued Bulletins 15, 21, 35, 39, 47 and 59. The Colorado Experiment Station at Fort Collins is in the center of one of the greatest lamb-feeding sections in the world. Some good work has been done by the station, which is found in Bulletins 75, 76, 151. The Wyoming Station at Laramie has carried on extensive investigations of lamb and sheep feeding and breeding of sheep for combined mutton and wool production and test of wool fibers. The results of these experiments are contained in Bulletins 47, 51, 64, 68, 73, 79, 81, 85, 89 and 92.

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The FARMERS' LOBBY.

Why the Parcels Post We Now Have Will be a Sad Disappointment

By Judson C. Welliver

IT'S always dangerous to prophesy, because nobody is smart enough to-day to guess what is likely to happen to-morrow. Smart people don't prophesy; or, if they do, they presently lose repute for smartness. They look wise and observe judicially that it's a mighty big question on which there is room for wide differences of opinion, and that for themselves they have a profound doubt. A man who predicts courts disaster.

With these preliminary deprecations of what I'm about to do, I shall now register the prediction that the parcels-post scheme that is to be put into effect January 1st will be about the poorest vindication of an airy and optimistic lot of promises that we ever saw.

Everybody must recollect the confidence with which it was proclaimed, when the parcels-post legislation finally passed, that it was going to help reduce the cost of living to the city dweller right away. It was going to bring the farm and the townsman together without delay. The middleman was going to be excluded. Our butter, eggs, vegetables, poultry, fruit and what-not were going to be passed on to the town customer, fresh and fine, without delays and at a cost that would be quite negligible. The cost of living was to go down, and the farmer would get more for his produce.

The Lewis Scheme Was the Lobby's Choice

THE Lobby never did believe there was much in these rosy promises. If it has any constant readers, perhaps they will recall that the Lobby took little stock in the complicated zone system, thought the rates were too high and insistently favored the parcels-express plan of having the Government take over the entire property, franchise, business and functions of the express companies. That was the plan of Congressman David J. Lewis of Maryland, who knows and knew more about this problem than anybody else in Congress. Under the Lewis scheme the whole business of shipping package freight would have become a department of the postal service. The weight limit, now fixed at 11 pounds,—which is to laugh,—would have gone up to some reasonable figure, say 110 pounds, as in Germany; ultimately, perhaps to 220 pounds, which the Belgian postal authorities are intending to adopt. At present their limit is 132 pounds, and the system has been a huge success; but the people want the limit raised, and will probably get it before long.

Meantime the great United States is starting the system with an 11-pound limit, and a complexity of varying charges for differing distances that makes it utterly impossible for anybody to know how much postage he needs to affix to his parcel without trotting down to his post-office to have it officially weighed and then to get the exact official distance to the particular zone of its destination figured out for him. After that he will be able to calculate how much postage he must affix. Only after that.

Let me try to illustrate the impossibilities of this system by assuming the case of a peck of potatoes which you, living on a rural route, want to send to a friend in town.

First of all, then, a peck of potatoes weighs more than 11 pounds; so you can't send it for love, money or stamps. But you can take out enough of the potatoes to bring it within the 11-pound limit. Then you put those potatoes into a container of some sort. It must be such a container that the potatoes can't injure themselves or any other mail matter, and of course must weigh something—for which weight you must make a corresponding deduction from the amount of potatoes, because the total weight, merchandise, container and all, must not exceed 11 pounds.

You get the potatoes ready and when the R. F. D. carrier comes along offer them to him. How much is the charge? He can't tell you, because he isn't provided with one of the zone maps and postal directories by whose aid the distance, zone and cost could be figured out. Moreover, he isn't provided with a scale; he can neither weigh the parcel for you, as an original proposition, or verify the weight that your farm scale has shown. You might be amused at this, but it's a fact. The Postmaster-General bought scales for all the post-offices for this particular business. It was announced with much élat that the order for scales was the largest ever placed. Two hundred of the largest offices will get automatic springless scales. The next class of offices, about ten thousand in number, will get high-grade beam scales; and, finally, fifty-five thousand fourth-class offices will get high-class spring scales capable of weighing up to 20 pounds.

More Problems to be Figured Out

BUT not a set of scales for a rural carrier. When I talked to the post-office authorities about it, I asked: "But how is the farmer, sending his butter or potatoes to town by the rural carrier, to know what his package weighs if the carrier has no scales?" "We haven't figured that out," was the reply. "Why didn't you give scales to the carriers?" "Because we didn't have the money. Congress appropriated \$175,000 to carry the legislation into effect, and it isn't enough to begin to provide scales for the carriers, along with all the other things that must be done."

That seemed to be a final determination on that point. Later, however, talking to another official of the service—both of them being members of the general

committee that is making the arrangements to put the service into operation—I got another explanation.

"The carriers will be provided with scales," he said. "We had some trouble because the contractors couldn't supply them except at an outlandish price, and the contract had to be readvertised. It will not be possible to supply nearly all the carriers with scales on January 1st, when the service starts; but they will all be supplied as fast as possible."

Of course it will be absolutely necessary to provide scales ultimately; but so far as the rural routes are concerned it isn't much difference when they are provided, because the law, plus the regulations that have been made, provide a pretty sure guarantee against any business moving from the farm to the town. And in this connection let me give another illustration:

"Butter, lard, and perishable articles such as fish, dressed fowls, fresh meats, vegetables, fruits, berries and other articles which decay quickly, when so packed or wrapped as not to injure other mail matter, will be accepted for local delivery either at the post-office of mailing or at any rural route starting therefrom. When enclosed in an inner cover and a strong outer cover of wood, metal, heavy corrugated pasteboard or other suitable material, or wrapped so that nothing can escape

THE truth is that the men who have been working on these regulations are convinced that the whole scheme is destined to a pathetic failure, so far as concerns getting the farmer's produce to the town consumer. They don't know what experience with the plan may show, but they know enough to be certain that the bulky things raised on a farm can't be hauled around at the rates imposed. They are prepared for a disappointment.

from the package, they will be accepted for mailing to all offices *within the first zone.*" This is a quotation from the regulations. Now observe what it means.

Butter can be shipped in any ordinary, common-sense packing, from your farmhouse to the town whence your rural route starts, or to any place on any other rural route running out of that town. That's all. Your market is confined to the village and its own little system of rural routes. But if you pack it in "an inner cover and a strong outer cover," etc. then you may ship it anywhere *within the first zone.*

What does that mean? Well, it gives you a radius of about thirty miles. That's as far as you will be permitted to ship butter, lard, fresh meat, dressed poultry, etc. Even to ship them that far—outside the radius of rural routes centering in your own rural-route headquarters—you must have a container of such weight and expense as to be practically prohibitive.

Take Eggs for Example

JUST think for a moment how much good New York, Boston, Chicago or Philadelphia—or any other city—will get out of that! Within a thirty-mile radius of New York City there isn't enough butter, poultry or dressed fowls raised to put, in your eye, compared, of course, to the demand of New York's tremendous market. But get outside that little radius and you can't ship any of those things to any city.

Do you see what it means? The very things we have been promised could be shipped "direct from farm to city home" can't be shipped there at all. Eggs? Yes, it must be admitted that they're going to allow eggs to be shipped farther. They will go in a corrugated pasteboard container that is very light. We took one of them, at the post-office department the other day, a sample affair made to carry a dozen eggs, and weighed it. It weighed just six ounces. With a dozen eggs in it the weight was a little over a pound and a half. In that container you may ship eggs as far as you like. Put your eggs in it and address it to a place in the first zone; that is, within 50 miles. The postage will be 8 cents. Add to that the cost of the container itself and it will be several cents more; probably enough to justify you in having an arrangement with your customer to mail the container back to you empty. The cost of sending it back will be 5 cents; so you have added 13 cents to the cost of the eggs. But you have still made no arrangement for paying for them. The remittance will not be carried back to you, as a part of the transaction, as some of the foreign parcels-post systems do it; there must be a letter and a postal note. This of course would not be necessary on every shipment, as it is fair to presume that arrangements for monthly or other periodical payments would exist in most cases.

But eggs destined for large cities will not come from points within the first zone as a rule; they will come from the second zone, which includes everything outside the first and inside of 150 miles. For this zone the rate on your dozen eggs will be 10 cents, with a 6-cent charge for carrying your corrugated pasteboard back to you; total cost of getting the eggs to market, 16 cents.

Will such rates market many eggs? It will outrage no proprieties to say that the post-office people who have

been at work for weeks past making these regulations think they will not. The truth is that the men who have been working on these regulations are convinced that the whole scheme is destined to a pathetic

failure, so far as concerns getting the farmer's produce to the town consumer. They have no desire to be quoted, for obvious reasons; but they have been compelled to study out in detail the practical workings of the system. They don't know what experience with the plan may show, but they know enough to be certain that the bulky things raised on a farm can't be hauled around at the rates imposed. They don't believe that any appreciable movement of this kind of stuff will take place.

They Know the Public Will be Disappointed

THEY are prepared for a great disappointment on the part of the public, and are already planning to get the law reorganized in a large way. They don't believe that what has been done thus far, or what can be done under the law as it now stands, is even a respectable beginning, so far as concerns getting the farm and the town consumer closer together. It is just as plain as a telephone-pole that you've run into in the dark.

Not that it will fail to move any merchandise. Quite the contrary, it is likely to secure to the post-office department a vast business. But of what sort? The answer will provide more food for thought. Here it is in the words of an official on the department committee on inauguration of the service:

"We have every reason to expect that the service will get from the start a very big business in delivery of merchandise for stores in the cities and towns. We have looked into this carefully. An official of a local parcels-express company in New York City told me that they made a flat rate to stores of ten cents per parcel delivered within the city. He said the parcels post would put them out of business right at the start. The postal rate will be 5 cents for the first pound within the carrier-delivery limits, and 1 cent for every additional pound. A 6-pound parcel will cost 10 cents; 5 pounds, 9 cents; 4 pounds, 8 cents; 3 pounds, 7 cents; 2 pounds, 6 cents. So you see on the smaller parcels we will beat their rate. But that is not all. These city express-delivery concerns do not make daily deliveries in the outlying sections; they deliver perhaps every alternate day; perhaps twice a week. The postal carriers of course deliver daily; so the customers will soon learn that they must demand delivery by post, and we will get everything that our weight limit makes it possible to give us, especially the business which goes to the suburban regions, and on which there is the poorest chance to make any profit."

"Do you think the department can do this vast delivery business in the cities with its present equipment?" I asked.

"There must be a good deal of adjustment of equipment, routes and arrangements to the new conditions," was the tentative reply.

"Have you figured whether you can do this business in the cities at the rates the law prescribes, and make money on it? Aren't you in danger of getting a huge delivery business in the cities, that will congest your whole delivery system, demand general reorganization, and then impose a loss on you for doing it?"

"We don't know; only experience will answer that," was the dubious reply.

The long and short of the matter is that there is going to be necessity for a complete reorganization of the whole scheme. It gives every promise of working worse even than its most ardent critics expected at the time the legislation passed. The postal officials declare that the distance zones must be extended greatly; the rates must be extensively reduced, except in cities, where it may be found necessary to raise them; and the weight limit, which is simply idiotic, must be raised very much. An effort will be made this winter to get it raised to 25 pounds, which would help some; but how much good would it do? Foreign parcels-post systems that are most successful have limits two, three and four times that high, and still higher; they also have a monopoly of the package-freight business. Our law, on the other hand, leaves the cream of the business to the express companies, barring the Government out of it by the senseless 11-pound limit of weight.

To summarize the whole situation as it is viewed now by the men who have made the closest official study of the probable workings of the law, I may fairly say:

They think the rates are generally too high.

They are sure the weight limit is vastly too low.

Finally—A Complete Reorganization

THE zones are too numerous, and the increase of the rate with the increase of the distance is too great. As it stands, the law is very likely to produce a vast increase of some lines of business—such as the city delivery just described—that were not seriously anticipated.

In doing this it is likely to involve a positive loss to the service.

It is not going to bring the farmer and the town dweller closer together in any way that will help materially to market the farmer's produce or reduce the cost of living in town.

The whole plan will finally have to be made over, and when made over should be based on the Lewis plan of taking in the express companies and creating a complete Government monopoly in package-freight shipments.



The ADVENTURES of a BENEFICIARY

by W. J. Nichols
Illustrated by W. C. Nims

Characters of the Story

EMERY WRIGHT, a young city man whose claim to his Uncle Nathan's fortune depends upon his successfully managing a Revolutionary relic in the shape of a man-propelled river ferry in New Hampshire.

PETE, a half-witted youth, who seems to "come with the ferry."

MISS LANSING, a young lady whose parents have a summer residence close to the hereditary ferry. She meets Mr. Wright on his first trip across the ferry. He simultaneously falls in love and into the river.

When Emery Wright arrives at the ferry, his adventures begin.

Chapter V.—Out of the Depths

BY THAT kindly provision of Nature by which man or other animals cast into deep water come presently to the surface, Wright, some seconds after his involuntary dive, reappeared to gladden the heart of the ferry's passenger. That is, his head shot into sight perhaps twenty feet from the scow, and then arms were in evidence, moving with much energy, but in spasmodic fashion. Miss Lansing, who had sprung from the cart and who was leaning over the side of the boat, gave a cry of relief and then another of amazement; for, though the ferryman did not sink again, the manner of his contortions and the fondness he seemed to have for splashing water indicated a juvenile fancy for a frolic at a most inauspicious moment or infantile disregard of her claims to a safe and unbroken passage across the river. For a moment the thought was hers that the whole affair must have been premeditated, and that he had plunged overboard as a rather eccentric practical joke. Presently, however, she saw him grasp convulsively at the pole, which he had lost, but which was now borne in his direction by the current, and thereupon there came into his floundering a degree of specific intention hitherto lacking. Boat and man were drifting down stream at an accelerated rate, and though but a very short time had elapsed since his desertion of his post, Miss Lansing, turning to glance at the rapids, realized that they were near at hand.

Simultaneously Wright was making the same discovery. Aided by the pole, he had veered from the direct line of his drift, and to his satisfaction had found himself in water shallow enough to give him a footing. Thus supported, he took a first opportunity to look about him; though, as it happened, his ears had served him while his eyes had been blinded by the water. He had heard the girl's cries, and he had caught, too, more distant shouts from the bank, where Pete was stationed. The boy's notions of the ferryman's predicament appeared to be peculiar, for, so far as Wright could distinguish the words, the youth was crying out that he heard the tumult, a not very satisfactory symptom of ability to offer practical help. Pete, however, occupied a secondary place in the young man's attention. The girl was much nearer, and his business in life just then was certainly to hasten to her rescue, a task whose difficulties were increased by the fact that twenty feet of deep water now stretched between him and the boat. And the rapids surely were desperately near. Wright waded a step or two toward the bank, and, as the bottom shoaled rapidly, was able to get his shoulders out of water.

Even to the newest of ferrymen the situation was clear cut. In some manner or other he must reach the boat. He stretched out the pole, but the end failed to fall within a dozen feet of the drifting scow. Then he saw the girl move swiftly to the other side of the craft and lay hands upon the big oar. This cumbersome affair she managed to get over the side, but her effort to check the movement of the boat was not attended by results. For a little she struggled, heroically if unavailingly, and then she turned again to her errant guardian.

"It's too heavy," she said, panting but calm. "If I could scull, I might manage, but I don't know how."

Wright was wading down-stream, keeping abreast of the boat. "I don't know how, either," he called back. "I can't tell you how. We'll have to hit on some other way. Hurrah!"

As an exclamation of encouragement it was well meant, but it was almost immediately nullified by Wright's disappearance. His foot had caught against a stone, an advance guard of the rapids, and for a second or two he was out of sight. He came up, sputtering and rubbing his eyes, but full of hope.

"The reins! The reins!" he called to her. "Unbuckle the ends—at the bit—and use 'em for a line. Toss me an end, but make sure that the other end's fast!"

And then he found another stumbling-block and fell over it. Again he came up, not much the worse for the ducking and in time to see Miss Lansing busy at the pony's head. A moment more, and she was at the gunwale, the reins in her hand and ready for a cast.

"Whirl 'em round your head, and then let them go!" he counseled. Absorbing as the moment was, he could not but delight in the grace with which she followed his advice, but, though the loops were set in motion handsomely by a slender arm and a lithe figure, the cast was short. She drew in the end swiftly, the water falling in a rivulet from the leather upon the dress whose freshness he had admired but a few minutes before. It may be, though, this water was serving the pair no bad turn, for now the reins seemed to have acquired greater weight, and the second attempt was more successful. Wright snatched at the line as it fell, and caught the end. The stones, so lately an obstacle to progress, were now his allies. Bracing his feet against one, he tugged at the rein, just as the girl at the other end settled herself to meet the strain.

"We're all right now!" he proclaimed, and she nodded cheerily, if a trifle anxiously. "We're holding the boat," he added, and she smiled at him in a way that made him, of a sudden, ludicrously content with a fate that set him in the midst of a river and made him as wet as any fish in it. The scow was no longer drifting. Of that beatific circumstance neither could be in doubt.

"There are lots of little boulders about here," he told her, "and they give me a chance to keep my footing. Now I'm going to try to work backward—slowly, you know, and carefully—and pull the boat to this side of the channel. If I pull too hard, let me know."

"Oh, I've had more practice than you think," she said briskly. "It's very much like trying to hold Noddy, when he has made up his mind to go home. It's another case of the blessing in disguise, you see, to have been able to get into training, thanks to a hard-mouthed rascal of a pony."

"Ready then!" Wright said. "Now!"

It was not a long pull, but it was a stout pull, and it counted. Wright gained a foot, then another and another. What was more, the water was perceptibly lower about his chest. "Now!" he called again, and once more the scow edged toward the bank. A third effort and a fourth followed with gratifying results.

"I'm not wearing you out, I hope," he said, warned by the smart in his wrists that his partner in the rescue was enjoying no sinecure.

"Why, it's fun!" she called back gaily. "This is like a tug of war."

"Well, it isn't so bad after all." Wright responded in the same vein. He was now where he felt it safe to cease his cautious retreat and begin to draw in the line,

hand over hand. "A naval tug of war!" he added, as the heavy scow came up to within arm's reach.

"But we both win," she supplemented, and the youth's heart gave a bound. Falling into a river was pretty good sport sometimes.

Wright scrambled aboard the scow, leaving to his companion the task of hauling in their life-line. There was urgent work for him to do. His pole had gone adrift again, and the big oar must do duty in its stead. It proved a possible, though clumsy, substitute; and with much difficulty he succeeded in heading the boat up-stream, and then cautiously crossed the stretch of deep water, where he had come to grief. Not until he was in the comparative safety of the shallows on the home side of the channel did he find time for a word with Miss Lansing. She in the meantime had not been idle. The reins were again buckled to the pony's bit, and that good-natured animal was dozing, as if nothing out of the usual order had happened.

Wright caught the girl's glance, as he faced about. There was, he thought, a quizzical gleam in her eye, and it occurred to him that he must be cutting a sorry figure, and withal an inglorious one, with his soaking garments clinging to his body and the water draining into a growing puddle at his feet.

"I'm not exactly proud of this—this performance, Miss Lansing," he said. "I have to plead it was a first offense—or at least a first trip. And, at that, I'm afraid a knack of running a ferry isn't part of my heritage."

She chose to demand her share in the misadventures and to insist that they were not very serious. "Why, I think we managed excellently," she said. "We are safe and sound, and except that you're drenched to the skin, we're going to cross the river triumphantly. We managed quite cleverly."

"You did!" he corrected. "You threw that line like a veteran. I couldn't miss it."

"You certainly didn't," she said with a smile. "I wonder, though"—she hesitated an instant—"I wonder if you guessed how you reminded me of your uncle."

Wright shook his head. "No, I can't picture Uncle Nathan up to his chin in the river and snatching desperately at a leather strap. He would have regarded it as an odd performance, I fancy."

"But your uncle was odd—if you'll pardon me for saying so—and that is just the point. He had his own way of doing things—which is where the similarity occurred to me. You see, some people, instead of calling for a line and inventing that clever idea of using the reins, would have swum across to the boat."

"Well, I had a reason," he said guardedly.

"As he would have had; one quite satisfactory to him as well."

"Mine was a pretty good one: I can't swim."

"You can't swim!" she repeated incredulously.

"Then, when you fell overboard, and came up and began to splash the water so vigorously, it wasn't because you—"

"It wasn't because I was trying to display natatorial frolicsomeness," he told her. "I happened to remember a fellow telling me that if a chap got into such a scrape, it wasn't a bad idea to keep the arms moving. Let me assure you I wasn't playing dolphin for your amusement. And when I touched bottom, I didn't dare risk a dash for the boat."

He bent again to his task, and for a space she watched him in silence. She was not smiling now, but her scrutiny was marked by a frank interest, which might have cheered him, had he turned to look at her. The boat was nearing the landing-place when she spoke again.

"I wonder if troublous beginnings don't make good endings," she said. "There's an old saw to that effect, isn't there? I've no doubt you'll prove its truth anew, if—if—"

"If I remain here," he said, completing the sentence for her. "Oh, I shall stay. I'm the hereditary ferryman, and I'm chained to the ancestral job. I'm here, and I'm commencing to learn. I've learned some things already, and there are others I am going to learn. And the first of them—"

"And the first of them?" she asked with comradely interest.

"The first will be to swim!" he said with conviction.

"Bravo!" she cried, and clapped her hands. At that moment the boat's bottom grated on the sand, and Pete, running up, hurled himself over the bow. Characteristically, he caught his toe and measured his length upon the planking, where he lay in imminent danger from the hoofs of Noddy, should that most amiable quadruped be affected by a case of equine nerves. Between pulling the boy out of danger and completing the landing Wright had an absorbing moment or two; but, all too soon, the cart was in motion. [CONTINUED ON PAGE 17]



"I beg your pardon; I should have knocked."



SUNDAY READING



THE SPIRIT OF CHRISTMAS

BY HARYOT HOLT DEY

I AM the Spirit of Christmas! Here I come! You cannot escape me! If you protest, I pursue you; if you surrender, I walk hand in hand with you. All is mine at this season, your hand, your heart, your purse, your thought—all are mine. You may hold back and repel me at first, but before the dawn of the day of days you will capitulate; you will be mine.

First I came to the shepherds watching their flocks by night, all seated on the ground. The angel of the Lord came down, and glory shone around. Remember that hymn? I am the angel of the Lord. I come at the Christmas-tide, and the same glory that shone around then comes again and illumines everything.

I traveled with the Wise Men across the desert, carrying gifts to the Child in the Manger—the Child who had the greatest birthday that ever dawned, whose birthday I celebrate. That was more than nineteen hundred years ago, but the story is new every year. All the world turns out to celebrate, and all birthday rejoicings have been popular to this very day.

Here I come with ideas, and such plans and projects as upset all your well-poised standards of a year. All roads lead to the Manger where the Child lies, and where we are taking our gifts, making our great annual pilgrimage. There are no by-ways and hedges, no back streets, for I am everywhere, and all roads lead to the same place.

Up and down the streets where the shops are I stride, watching for you to come. If you wait till the last minute, till the night before—the Holy Night—as you do sometimes, protesting against this foolish habit of giving things, your arguments all arranged since last year, and you determined to stand by what you call Christmas reform—ah, that is the time when your surrender is most complete. Think not to resist the Spirit of Christmas.

The angel of the Lord came down,
And glory shone around!

You are powerless in combat with me!

Who are these people who dare hinder you in your giving? But no one walks in darkness at this season. The illumination penetrates to every corner. Every heart is light—yes, light as a feather—and there is no darkness at all. No one's ideas can compete with mine. I make my first charge, and the combat is at an end.

I smile at you in the faces of the Christmas dolls, animating their eyes and their smiles, till you smile at them in return, feeling that they understand, and you carry one home in your coat-pocket. I animate every practical thing you look at from umbrellas to market-baskets; I tag everything with the name of one of your friends; even the names of your enemies appear boldly, staring you out of countenance, and you pass on hurriedly. The faces of non-descripts you haven't thought of in years, old maid aunts, the blind man on the corner, people whose names you do not even know, appear to you—in the most wonderful manner, like magic.

When I come, I reverse things; turn all your thrifty principles upside down. I am so different that you are attracted to me, by the law of opposites, it may be, and you take me with you when you go shopping. I make no claim to mathematics, nor yet to what you call common sense, but, oh! if you will take me for your guide, I will show you how to make one dollar do the work of five. Your sums in subtraction and division will all turn into such glorious results in addition that you will find yourself using multiplication to do your figuring, for I turn mathematics all topsyturvy. Whether you can buy, or whether you cannot, I can call your attention to the possibilities, the glorious potentialities, and as I shout the names of your friends from book-shelves and flower-shops, in just the loving thought of each one, you have made your little pilgrimage to the Manger where the Child lies, and laid there your gift of love.

"But Christmas is for the children," I hear you say. Who are the children? Well, it may be one of the disappointments of life that you never grow to be quite so old and so wise as you thought you should, and you never get to the place where you really are infallible; gray and spectacled though you are, it only takes the Christmas-tide to reconcile you. Those were plain men, those shepherds. How wonderful it must have been to hear the stars singing together! The shep-

herds were not too old, and they trusted and listened to the first Christmas carol. They understood. And the miracle of the Christmas trees! I am in that, too.

Who are these people who object to Christmas trees? Do I not grow forests of trees every year? Are they not the foliage of the everlasting hills? Have my trees ever been lacking? My holly and my mistletoe? Have I ever failed you in my decorations? Have you so little comprehension of my Power that you think my trees would fail—my trees for my great Birthday celebration? Why, I can grow forests of trees in a single night! They may look very commercial to you as train-loads of my trees are unloaded for your city markets, or they may suggest waste. But fear not for the commercialism or the waste.

And some of you object to the legend of old Santa! How easy to protest, but it is also quite futile. Why, I am old Santa myself. I am the one to load his sleigh, to harness his reindeer, to jingle the bells and to come down the chimney while the children dream of a little round man in a red coat and a fur cap. Then you persuade them that there is no Santa, just because you have never seen him; just as if the greatest things are seen instead of felt.

Lend yourself to me, and I will take you to the Fountain of Happiness. You won't think it is to be found where I shall take you, but it is. Together we will go to the needy, to the hungry-hearted, to the desolate. I will show you where. I know where they live. You are God's messenger. You are the salt of the earth. You are a city set upon a hill. Then, too, by that strange law of reversal, they are your Fountain of Life. I can take you to some lonely old dears who have no one, only sad memories of the past, and who would be so surprised to see you come with your loving smile and your hearty handgrasp. I can take you to the bedside of the suffering and into the prisons where our brothers are, there to leave your gifts of loving thoughts. And as we come away together you will hear me whisper, "For I was sick and in prison, and ye ministered unto ME." Then your Fountain will appear.

So let us all join in a joyful march, laden with gifts and torches, and with singing let us all travel humbly to the Manger where the Child lies, because there is no room for Him in the inn, and there upon our knees let us present to Him our gifts. Then let us rise and go back with illumined hearts, because we have participated in the celebration.

I will lead the blessed pilgrimage. I will prove to you that giving is getting. I will make you receptive to the mysteries of life, even to self-effacement, for I am the Spirit of Christmas. Manager of the greatest Birthday Celebration since the world began.

Hands Up, Friends!

By Haryot Holt Dey

IN THE Bible the word hand is mentioned more than twelve hundred times to express power, purpose and achievement. In Bible metaphor the beauty of the hand is not a feature.

For every pair of artistic hands—hands that are kept to look at and not to use—in the family, it is safe to say there are two or more pairs of working hands that are taken as a matter of course—commonplace hands with no rings on them, and no polished nor tinted finger-tips;—capable hands that do any and all the work they find to do—do it with all their might—do it to the glory of God without knowing it.

When we all get to the tabernacle not made with hands, there's a chance that Cinderella will be there, passed in, perchance, by just showing her toil-worn hands, blistered and calloused and horny, widespread and inartistic. And—maybe the cruel, haughty step-sisters with rings on their fingers, and plumes in their hair, and right from the manicure's, at that, won't be admitted; and there isn't one of us who loved little Cinderella, but will rejoice and be glad because they have deserved it.

Faith and works! The hand is the works, and the works are greater than the faith, for they may even prove the faith. The hand is the agent of the ideal. The hand that bears the evidence of toil is the emblem of usefulness and service.

MERRIE CHRISTMAS

By G. Henry

ON THIS day, brethren, be happy—and generous. For 'tis the anniversary of the greatest day, as measured by accomplished good, that ever dawned on the world.

On this day remember Him. Remember the Friend of little children. Remembering Him, do not gruffly, insultingly, speak to any brother or sister. And every man is your brother, every woman your sister, for we are all His children. He said so, and it is so.

If a man with holes in his shoes and with ragged coat and with hair that needs combing and face that needs shaving asks you for a dime, GIVE—as He would give.

On this Christmas Day be not discriminating in your charity, nor querulous, nor curious. The poorly dressed, the oppressed, the wicked, the lame, the halt, the filthy, the boisterous, were those whom He sought out. Remember it.

Replenish your well of compassion on Christmas, for 'tis His day of days.

Should an old woman whine in your ear, make her smile. She may be a mother; she had a mother.

You OWE a meal to the old man who says he is hungry.

Read the greatest editorial ever printed: THE SERMON ON THE MOUNT.

Help make this a Merrie Christmas. Merrie Christmas to YOU.

and the pony was setting his shoulder against his collar for the sharp pull up the bank.

From the top of the rise Miss Lansing looked back to see the ferryman and Pete standing together by the boat. She waved a hand in parting salute.

"I won't forget!" she called gaily. "Nor will I—to my dying day!" Wright said fervently, but so low that if even Pete at his elbow caught the sound he could not distinguish the words. Yet the boy's lips parted and, "I heard you; I heard you!" he cried with a sort of pathetic eagerness.

"You heard me? What do you mean?" Wright demanded sharply.

"Out there—in the river—I heard. Yes, I heard, but I couldn't help!" Pete insisted.

Chapter VI.—The Sunshine of Life

"I DESIRE you to observe, Pête," Wright remarked with feeling, "that the ladies of this fair land are responsible for a lot of its sunshine."

The young man had been removing various articles from the basket which represented the thoughtfulness of Mrs. Dodd, ranging them in a row on the table. A loaf of bread, a pat of butter neatly wrapped in oiled paper, a glass of jelly, a little pot of mustard, shakers filled with salt and pepper, a package emitting the pleasing fragrance of newly ground coffee, a bag of doughnuts, another of frosted cakes and a pasteboard box housing a supply of cold boiled ham stood in line before him. Wright stepped back to get a more comprehensive view of the collection.

"My boy," said he, "we should bless the ladies, all and severally, but especially two of 'em, who shall be nameless, but who are enshrined in our loyal hearts."

Pete, hovering clumsily about the table, put his approval of the sentiment in a curious grunt. Simultaneously he bent so eagerly over the edibles that Wright grasped him by the shoulder and dragged him back.

"You'll have to restrain yourself," he said. "There was a fellow once who made a famous sentiment when he wrote 'Drink to me only with thine eyes,' but I never knew of anybody expressing beautiful thoughts by gloating over food. Indeed, from the hollowness within me, I'm of opinion there's a vastly better way of showing our approval of the viands, and with your kind sanction I shall essay the slicing of that loaf."

"Ugh!" quoth Pete. He dropped back, but when Wright, who had found a big knife on the corner shelf, began to slice the bread, he crept forward, his eyes bulging and his absorption in the performance growing more manifest as the slices were buttered and slips of cold ham laid upon them. Wright, aware that his appetite was excellent and encouraged from time to time by the discovery of an almost complete plate among the assets of the ferry house, found time to keep a pretty close watch upon the lad and to study the manner in which he surveyed the food. It was not the wolfish glare of a hungry animal, at any rate, he decided, and having reached this conclusion, he paused to survey the general effect of the festive board. Something was lacking. With the natural tendency of puzzled man to seek advice, he turned to that most unpromising fountain of wisdom—Pete.

"Well, what's amiss?" he asked rather mechanically.

Pete's eyes protruded more than ever, as he gave a wordless but sufficient answer, springing forward and catching at something white which projected from a corner of the basket.

"Oh!" ejaculated Wright. For precautionary reasons he intervened, relieved Pete of the task he had undertaken and cautiously drew forth a tablecloth, small and beautifully laundered; an ideal cover, indeed, for a luncheon-board. "Oh!" Wright repeated, as the folds fell open. To tell the truth, he felt somewhat helpless with that snowy linen in his grasp.

"Clean, ain't it?" was Pete's contribution to the conversation. An expression of high satisfaction rested upon his countenance.

"Exactly so!" quoth Wright. He took a cautious step to the left, still holding the cloth and eyeing with disfavor the dusty surface upon which it would have to be spread. Once superimposed upon that grimy expanse, it would be a fair white cloth no longer. And yet it was designed for use; a man should not put behind him the decencies, the self-respecting niceties of life. Wright hesitated, meditated, debated, compromised. An involuntary motion on his part showed the way, for, as if in answer to a query, the cloth slipped from rectangle to triangle, and then, with an air of triumph, [CONTINUED ON PAGE 23]



A Christmas Mystery: The Story of Three Wise Men

I cannot tell how the truth may be:
I say the tale as 'twas said to me.

By William J. Locke

Illustrated By R. M. Brinkerhoff

THREE men who had gained great fame and honor throughout the world met unexpectedly in front of the book-stall at Paddington Station. Like most of the great ones of the earth, they were personally acquainted, and they exchanged surprised greetings.

Sir Angus McCurdie, the eminent physicist, scowled at the two others beneath his heavy black eyebrows.

"I'm going to a God-forsaken place in Cornwall called Trehenna," said he.

"That's odd; so am I," croaked Professor Biggleswade. He was a little, untidy man with round spectacles, a fringe of grayish beard and a weak, rasping voice, and he knew more of Assyriology than any man, living or dead. A flippant pupil once remarked that the Professor's face was furnished with a Babylonian cuneiform in lieu of features.

"People called Deverill, at Foullis Castle?" asked Sir Angus.

"Yes," replied Professor Biggleswade.

"How curious! I am going to the Deverills, too," said the third man.

This man was the Right Honorable Viscount Boyne, the renowned Empire-Builder and Administrator, around whose solitary and remote life popular imagination had woven many legends. He looked at the world through tired gray eyes, and the heavy, drooping blond mustache seemed tired, too, and had dragged down the tired face into deep furrows. He was smoking a long black cigar.

"I suppose we may as well travel down together," said Sir Angus, not very cordially.

Lord Boyne said courteously: "I have a reserved carriage. The railway company is always good enough to place one at my disposal. It would give me great pleasure if you would share it."

The invitation was accepted, and the three men crossed the busy, crowded platform to take their seats in the great express-train. A porter laden with an incredible load of paraphernalia, trying to make his way through the press, happened to jostle Sir Angus McCurdie. He rubbed his shoulder fretfully.

"Why the whole land should be turned into a bear-garden on account of this exploded superstition of Christmas is one of the anomalies of modern civilization. Look at this insensate welter of fools traveling in wild herds to disgusting places merely because it's Christmas!"

"You seem to be traveling yourself, McCurdie," said Lord Boyne.

"Yes; and why the devil I'm doing it I've not the faintest notion," replied Sir Angus.

"It's going to be a beast of a journey," he remarked some moments later, as the train carried them slowly out of the station. "The whole country is under snow, and as far as I can understand we have to change twice and wind up with a twenty-mile motor drive."

He was an iron-faced, beetle-browed, stern man, and this morning he did not seem to be in the best of tempers. Finding his companions inclined to be sympathetic, he continued his lamentation.

"And merely because it's Christmas I've had to shut up my laboratory and give my young fools a holiday—just when I was in the midst of a most important series of experiments."

Professor Biggleswade, who had heard vaguely of and rather looked down upon such new-fangled toys as radium and thorium and helium and argon—for the latest astonishing developments in the theory of radio-activity had brought Sir Angus McCurdie his world-wide fame—said somewhat ironically:

"If the experiments were so important, why didn't you lock yourself up with your test tubes and electric batteries, and finish them alone?"

"Man!" said McCurdie, bending across the carriage and speaking with a curious intensity of voice, "d'ye know I'd give a hundred pounds to be able to answer that question?"

"What do you mean?" asked the Professor, startled. "I should like to know why I'm sitting here in this train and going to visit a couple of addle-headed society people whom I'm scarcely acquainted with, when I might be home in my own good company furthering the progress of mankind and of science."

"I myself," said the Professor, "am not acquainted with them at all."

It was Sir Angus McCurdie's turn to look surprised. "Then why are you going to spend Christmas with them?"

"I reviewed a ridiculous blank-verse tragedy written by Deverill on the Death of Sennacherib. Historically it was puerile. I said so in no measured terms. He wrote a letter claiming to be a poet and not an archeologist. I replied that the day had passed when poets could with impunity commit the abominable crime of distorting history. He retorted with some futile argument, and we went on exchanging letters, until his invitation and my acceptance concluded the correspondence."

McCurdie, still bending his black brows on him, asked him why he had not declined. The Professor screwed up his face till it looked more like a cuneiform than ever. He, too, found the question difficult to answer, but he showed a bold front.

"I felt it my duty," said he, "to teach that preposterous ignoramus something worth knowing about Sennacherib. Besides, I am a bachelor and would sooner spend Christmas, as to whose irritating and meaningless annoyance I cordially agree with you, among strangers than among my married sisters' numerous and nerve-racking families."

Sir Angus McCurdie, the hard, metallic apostle of radio-activity, glanced for a moment out of the window

attresses, took his gold glasses from his nose and the black cigar from his lips and addressed his companions.

"I've been considerably interested in your conversation," said he, "and, as you've been frank, I'll be frank, too. I knew Mrs. Deverill's mother, Lady Carstairs, very well years ago, and, of course, Mrs. Deverill when she was a child. Deverill I came across once in Egypt. He had been sent on a diplomatic mission to Teheran. As for our being invited on such slight acquaintance, little Mrs. Deverill has the reputation of being the only really successful celebrity hunter in England. She inherited the faculty from her mother, who entertained the whole world. We're sure to find archbishops, and eminent actors and illustrious divorcees asked to meet us. That's one thing. But why I, who loathe country house-parties and children and Christmas as much as Biggleswade, am going down there to-day I can no more explain than you can. It's a devilish odd coincidence."

The three men looked at one another. Suddenly McCurdie shivered and drew his fur coat around him.

"I'll thank you," said he, "to shut that window."

"It's shut," said Boyne.

"It's just as uncanny," said McCurdie, looking from one to the other.

"What?" asked Boyne.

"Nothing if you didn't feel it."

"There did seem to be a sudden draft," said Professor Biggleswade. "But, as both window and door are shut, it could only be imaginary."

"It wasn't imaginary," muttered Sir Angus McCurdie.

Then he laughed harshly. "My father and mother came from Cromarty," he said with apparent irrelevance.

"That's the Highlands," said the Professor.

"Aye," said McCurdie.

Lord Boyne said nothing, but tugged at his mustache and looked out of the window as the frozen meadows and bits of river and willow raced past. A dead silence fell on them. McCurdie broke it with another laugh and took a whisky-flask from his hand-bag.

"Have a nip?"

"Thanks, no," said the Professor. "I have to keep to a strict dietary, and I only drink hot milk and water, and of that sparingly. I have some in a thermos bottle."

Lord Boyne also declining the whisky, McCurdie swallowed a dram and declared himself to be better. The Professor took from his bag a foreign review in which a German sciolist had dared to question his interpretation of a Hittite inscription. Over the man's inaptitude he fell asleep and snored loudly.

To escape from his immediate neighborhood, McCurdie went to the other end of the seat and faced Lord Boyne, who had resumed his gold glasses and his listless contemplation of obscure actresses. McCurdie lit a pipe, Boyne another black cigar. The train thundered on.

Presently they all lunched together in the restaurant-car. The windows steamed, but here and there through a wiped patch of pane a white world was revealed. The snow was falling. As they passed through Westbury, McCurdie looked mechanically for the famous white horse carved into the chalk of the down; but it was not visible beneath the thick covering of snow.

"It'll be just like this all the way to Gehenna—Trehenna, I mean," said McCurdie.

Boyne nodded. He had done his life's work amid all extreme fierceness of heat and cold, in burning droughts, in simoons and in icy wildernesses, and a ray or two more of the pale sun or a flake or two more of the gentle snow of England mattered to him but little. But Biggleswade rubbed the pane with his table-napkin and gazed apprehensively at the prospect.

"If only this wretched train would stop," said he, "I would go back again."

And he thought how comfortable it would be to sneak home again to his books and thus elude not only the Deverills, but the Christmas jollities of his sisters' families, who would think him miles away. But the train was timed not to stop till Plymouth, two hundred and thirty-five miles from London, and thither was he being relentlessly carried. Then he quarreled with his food, which brought a certain consolation.

The train did stop, however, before Plymouth,—indeed, before Exeter. An accident on the line had interrupted the traffic. The express was held up for an hour, and when it was permitted to proceed, instead of thundering on, it went cautiously, subject to continual stoppings. It arrived at Plymouth two hours late. The travelers learned that they had missed the connection on which they had counted and that they could not



and he spoke: "Unto us a child is born, unto us a son is given—"

at the gray, frost-bitten fields. Then he said: "I'm a widower. My wife died many years ago and, thank God, we had no children. I generally spend Christmas alone."

He looked out of the window again. Professor Biggleswade suddenly remembered the popular story of the great scientist's antecedents, and reflected that, as McCurdie had once run, a barefoot urchin, through the Glasgow mud, he was likely to have little kith or kin. He himself envied McCurdie. He was always praying to be delivered from his sisters and nephews and nieces, whose embarrassing demands no calculated coldness could repress.

"Children are the root of all evil," said he. "Happy the man who has his quiver empty."

Sir Angus McCurdie did not reply at once; when he spoke again it was with reference to their prospective host.

"I met Deverill," said he, "at the Royal Society's Soirée this year. One of my assistants was demonstrating a peculiar property of thorium, and Deverill seemed interested. I asked him to come to my laboratory the next day, and found he didn't know the simplest thing about anything. That's all the acquaintance I have with him."

Lord Boyne, the great administrator, who had been wearily turning over the pages of an illustrated weekly chiefly filled with flamboyant photographs of obscure



reach Trehenna till nearly ten o'clock. After weary waiting at Plymouth, they took their seats in the little, cold local train that was to carry them another stage on their journey. Hot-water cans put in at Plymouth mitigated to some extent the iciness of the compartment. But that only lasted a comparatively short time, for soon they were set down at a desolate, shelterless wayside junction, dumped in the midst of a hilly, snow-covered waste, where they went through another weary wait for another dismal local train that was to carry them to Trehenna. And in this train there were no hot-water cans, so that the compartment was as cold as death. McCurdie fretted and shook his fist in the direction of Trehenna.



"And when we get there we have still a twenty miles' motor drive to Foulis Castle. It's a fool name, and we're fools to be going there."

"I shall die of bronchitis," wailed Professor Biggleswade.

"A man dies when it is appointed for him to die," said Lord Boyne in his tired way, and he went on smoking long black cigars.

"It's not the dying that worries me," said McCurdie. "That's a mere mechanical process which every organic being from a king to a cauliflower has to pass through. It's the being forced against my will and my reason to come on this accursed journey, which something tells me will become more and more accursed as we go on, that is driving me to distraction."

"What will be, will be," said Boyne.

"I can't see where the comfort of that reflection comes in," said Biggleswade.

"And yet you've traveled in the East," said Boyne. "I suppose you know the Valley of the Tigris as well as any man living."

"Yes," said the Professor. "I can say I dug my way from Tekrit to Bagdad and left not a stone unexamined."

"Perhaps, after all," Boyne remarked, "that's not quite the way to know the East."

"I never wanted to know the modern East," returned the Professor. "What is there in it of interest compared with the mighty civilizations that have gone before?"

McCurdie took a pull from his flask.

"I'm glad I thought of having a refill at Plymouth," said he.

At last, after many stops at little lonely stations, they arrived at Trehenna. The guard opened the door, and they stepped out onto the snow-covered platform. An oil-lamp hung from the tiny penthouse roof that, structurally, was Trehenna Station. They looked around at the silent gloom of white undulating moorland, and it seemed a place where no man lived and only ghosts could have a bleak and unsheltered being. A porter came up and helped the guard with the luggage. Then they realized that the station was built on a small embankment, for, looking over the railing, they saw below the two great lamps of a motor-car. A fur-clad chauffeur met them at the bottom of the stairs. He clapped his hands together and informed them cheerily that he had been waiting for four hours. It was the bitterest winter in these parts within the memory of man, said he, and he himself had not seen snow there for five years. Then he settled the three travelers in the great, roomy touring-car covered with a Cape-cart hood, wrapped them up in many rugs and started.



After a few moments, the huddling together of their bodies—for, the Professor being a spare man, there was room for them all on the back seat,—the pile of rugs and the serviceable and all but airtight hood, induced a pleasant warmth and a pleasant drowsiness. Where they were being driven they knew not. The perfectly upholstered seat eased their limbs, the easy, swinging motion of the car soothed their spirits. They felt that already they had reached the luxuriously appointed home which, after all, they knew awaited them. McCurdie no longer railed, Professor Biggleswade forgot the dangers of bronchitis, and Lord Boyne twisted the stump of a black cigar between his lips without any desire to relight it. A tiny electric lamp inside the hood made the darkness of the world to right and left and in front of the windows still darker. McCurdie and Biggleswade fell into a doze. Lord Boyne chewed the end of his cigar. The car sped on through an unseen wilderness.

Suddenly there was a horrid jolt and a lurch and a leap and a rebound, and then the car stood still, quivering like a ship that has been struck by a heavy sea. The three men were pitched and tossed and thrown sprawling over one another onto the bottom of the car. Biggleswade screamed. McCurdie cursed. Boyne scrambled from the confusion of rugs and limbs and, tearing open the side of the

Cape-cart hood, jumped out. The chauffeur had also just leaped from his seat. It was pitch dark save for the great shaft of light down the snowy road cast by the acetylene lamps. The snow had ceased falling.

"What's gone wrong?"

"It sounded like an axle," said the chauffeur ruefully.

He unfastened a lamp and examined the car, which had wedged itself against a great drift of snow on the off side. Meanwhile McCurdie and Biggleswade had alighted, fearing for the worst.

"Yes, it's the axle," said the chauffeur.

"Then we're done," remarked Boyne.

"I'm afraid so, my lord. I'm sorry."

"What's the matter? Can't we get on?"

asked Biggleswade in his querulous voice.

McCurdie laughed. "How can we get on with a broken axle? The thing's as useless as a man with a broken back. Gad, I was right. I said it was going to be an infernal journey."

The little Professor wrung his hands.

"But what's to be done?" he cried.

"Tramp it," said Lord Boyne, lighting a fresh cigar.

"It's ten miles," said the chauffeur.

"It would be the death of me," the Professor wailed.

"I utterly refuse to walk ten miles through a polar waste with a gouty foot," McCurdie declared wrathfully.



The chauffeur offered a solution of the difficulty. He would set out alone for Foulis Castle—five miles further on was an inn where he could obtain a horse and trap—and would return for the three gentlemen with another car. In the meanwhile they would take shelter in a little house which they had just passed, some half-mile up the road. This was agreed to. The chauffeur went on cheerily enough with a lamp, and the three travelers with another lamp started off in the opposite direction. As far as they could see, they were in a long, desolate valley, a sort of No Man's Land, deathly silent. The eastern sky had cleared somewhat, and they faced a loose rack through which one pale star was dimly visible.

"I'm a man of science," said McCurdie as they trudged through the snow, "and I dismiss the supernatural as contrary to reason, but I have Highland blood in my veins that plays me exasperating tricks. My reason tells me that this place is only a commonplace moor, yet it seems like a Valley of Bones haunted by malignant spirits who have lured us here to our destruction. There's something guiding us now. It's just uncanny."

"Why on earth did we ever come?" croaked Biggleswade.

Lord Boyne answered: "The Koran says, 'Nothing can befall us but what God hath destined for us.' So why worry?"

"Because I'm not a Mohammedan," retorted Biggleswade.

"You might be worse," said Boyne.



Presently the dim outline of the little house grew perceptible. A faint light shone from the window. It stood, unfenced by any kind of hedge or railing, a few feet away from the road in a little hollow beneath some rising ground. As far as they could discern in the darkness when they drew near, the house was a mean, dilapidated hovel. A flickering candle stood on the inner sill of the small window and afforded a vague view into a mean interior. Boyne held up the lamp so that its rays fell full on the door. As he did so, an exclamation broke from his lips, and he hurried forward, followed by the others. A man's body lay huddled together on the snow by the threshold! He was dressed like a peasant, in old corduroy trousers and rough coat, and a handkerchief was knotted around his neck. In his hand he grasped the neck of a broken bottle. Boyne set the lamp on the ground, and the three bent down together over the man. Close by the neck lay the rest of the broken bottle, whose contents had evidently run out into the snow.

"Drunk?" asked Biggleswade.

Boyne felt the man, and laid his hand on his heart.

"No," said he, "dead."

McCurdie leaped to his full height. "I told you the place was uncanny!" he cried. "It's fay." Then he hammered wildly at the door.

There was no response. He hammered again till it rattled. This time a faint prolonged sound like the wailing of a strange sea-creature was heard from within the house. McCurdie turned around, his teeth chattering. "Did ye hear that sound, Boyne? What was it?"

"Perhaps it's a dog," said the Professor.

Lord Boyne, the man of action, pushed them aside and tried the door-handle. It yielded, the door stood open, and the gust of cold wind, entering the house, extinguished the candle within. They entered and found themselves in a miserable stone-paved kitchen, furnished with poverty-stricken meagerness—a wooden chair or two, a dirty table, some broken crockery, old cooking-utensils, a fly-blown missionary-society almanac and a fireless grate. Boyne set the lamp on the table.

"We must bring him in," said he.



They returned to the threshold, and, as they were bending over to grip the dead man, the same sound filled the air, but this time louder, more intense, a cry of great agony. The sweat dripped from McCurdie's forehead. They lifted the dead man and brought him into the room, and, after laying him on a dirty strip of carpet, they did their best to straighten the stiff limbs. Biggleswade put on the table a bundle which he had picked up outside. It contained some poor provisions—a loaf, a piece of fat bacon and a paper of tea. As far as they could guess (and, as they learned later, they guessed rightly), the man was the master of the house, who, coming home blind drunk from some distant inn, had fallen at his own threshold and got frozen to death. As they could not unclasp his fingers from the broken bottle-neck, they had to let him clutch it as a dead warrior clutches the hilt of his broken sword.

Then suddenly the whole place was rent with another and yet another long, soul-piercing moan of anguish.

"There's a second room," said Boyne, pointing to a door. "The sound comes from there."

He opened the door, peeped in, and then, returning for the lamp, disappeared, leaving McCurdie and Biggleswade in the pitch darkness, with the dead man on the floor.

"For Heaven's sake, give me a drop of whisky," said the Professor, "or I shall faint."

Presently the door opened, and Lord Boyne appeared in the shaft of light. He beckoned to his companions.

"It is a woman in childbirth," he said in his even, tired voice. "We must aid her. She appears unconscious. Does either of you know anything about such things? We must do something."

They shook their heads, and the three looked at each other in dismay. Masters of knowledge that had won them worldwide fame and honor, they stood helpless, abashed, before this, the commonest phenomenon of nature.

"My wife had no child," said McCurdie.

"I've avoided women all my life," said Biggleswade.

"And I've been too busy to think of them. God forgive me," said Boyne.

The history of the next three hours was one that none of the three men ever cared to touch upon. They did things blindly, instinctively, as men do when they come face to face with the elemental. A fire was made, they knew not how; water drawn, they knew not whence, and a kettle boiled. Boyne, accustomed to command, directed. The others obeyed. At his suggestion they hastened to the wreck of the car and came staggering back beneath rugs and traveling-bags which could supply clean linen and needful things, for amid the poverty of the house they could find nothing fit for human touch or use. Early they saw that the woman's strength was failing and that she could not live. And there, in that nameless hovel, with death on the hearthstone and death and life hovering over the pitiful bed, the three great men went through the pain and horror and squalor of birth, and they knew that they had never yet stood before so great a mystery.



With the first wail of the newly born infant a last convulsive shudder passed through the frame of the unconscious mother. Then three or four short gasps for breath, and the spirit passed away. She was dead. Professor Biggleswade threw a corner of the sheet over her face, for he could not bear to look upon it.

They washed and dried the child as any crone of a midwife would have done, and dipped a small sponge, which had always remained unused in a cut-glass bottle in Boyne's dressing-bag, in the hot milk and water of Biggleswade's thermos bottle, and put it to his lips, and then they wrapped him up warm in some of their own woolen undergarments and took him into the kitchen and placed him on a bed

made of their fur coats in front of the fire. As the last piece of fuel was exhausted, they took one of the wooden chairs and broke it up and cast it into the blaze. And then they raised the dead man from the strip of carpet and carried him into the bedroom and laid him reverently by the side of his dead wife, after which they left the dead in darkness and returned to the living. And the three grave men stood over the wisp of flesh that had been born a male into the world. Then, their task being accomplished, reaction came, and even Boyne, who had seen death in many lands, turned faint. But the others, losing control of their nerves, shook like men stricken with palsy.

Suddenly McCurdie cried in a high-pitched voice, "My God! don't you feel it?" and touched Boyne by the arm. An expression of terror came on his iron features. "There! It's here with us."

Little Professor Biggleswade sat on a corner of the table and wiped his forehead. "I heard it. I felt it. It was like the beating of wings."

"It's the fourth time," said McCurdie. "The first time was just before I accepted the Deverills' invitation. The second, in the railway carriage this afternoon. The third, on the way here. This is the fourth."

Biggleswade plucked nervously at the fringe of whisker under his jaws and said faintly, "It's the fourth time up to now. I thought it was fancy."

"I have felt it, too," said Boyne. "It is the Angel of Death," and he pointed to the room where the dead man and woman lay.

"For God's sake, let us get away from this," cried Biggleswade.

"And leave the child to die, like the others?" said Boyne.

"We must see it through," said McCurdie.

A silence fell upon them as they sat around by the blaze with a new-born babe wrapped in its odd swaddling-clothes asleep on the pile of fur coats, and it lasted until Sir Angus McCurdie looked at his watch.

"Good Lord," said he. "It's twelve o'clock."

"Christmas morning," said Biggleswade.

"A strange Christmas," mused Boyne.

McCurdie put up his hand. "There it is again! The beating of wings."



And they listened like men spellbound. McCurdie kept his hand uplifted and gazed over their heads at the wall, and his gaze was that of a man in a trance, and he spoke: "Unto us a child is born, unto us a son is given—"

Boyne sprang from his chair, which fell behind him with a crash. "Man—what the devil are you saying?"

Then McCurdie rose and met Biggleswade's eyes staring at him through the great round spectacles, and Biggleswade turned and met the eyes of Boyne. A pulsation like the beating of wings stirred the air.

The three wise men shivered and thrilled with a queer exaltation. Something strange, mystical, dynamic, had happened. It was as if scales had fallen from their eyes and they saw with a new vision. They stood together humbly, divested of all their greatness, touching one another like children, as if seeking mutual protection, and they looked, with one accord, irresistibly compelled, at the child.

At last McCurdie unbent his black brows and said hoarsely: "It was not the Angel of Death, Boyne, but another Messenger that drew us here." The tiredness seemed to pass away from the great administrator's face, and he nodded his head with the calm of a man who has come to the quiet heart of a perplexing mystery.

"It's true," he murmured. "Unto us a child is born, unto us a son is given. Unto the three of us."

Biggleswade took off his great round spectacles and wiped them.

"Gaspar, Melchior, Balthazar. But where are the gold, frankincense and myrrh?"

"In our hearts, man," said McCurdie. The babe cried and stretched its tiny limbs. Instinctively they all knelt down together to discover if possible and administer ignorantly to its wants. The scene had the appearance of an adoration.



Then these three wise, lonely, childless men, who, in furtherance of their own greatness, had cut themselves adrift from the sweet and simple things of life and from the kindly ways of their brethren and had grown old in unhappy and profitless wisdom, knew that an inscrutable Providence had led them, as it had led three Wise Men of old, on a Christmas morning long ago, to a nativity which should give them a new wisdom, a new link with humanity, a new spiritual outlook, a new hope.

And when their watch was ended they wrapped up the babe with precious care and carried him with them, an inalienable joy and possession, into the great world.





Anty Drudge saves John's shirts

Mrs. Field—"My John has become so fussy since he started to take Mame Klaunder out buggy riding, that I believe he has more shirts in the wash than all the other boys put together. Why, I sometimes have a whole boilerful of shirts on the stove at one time. And they don't seem to wear any time at all."

Anty Drudge—"It's not because John is hard on his shirts that they wear out. It's because you boil the life out of them. No shirt can stand that. Why don't you use Fels-Naptha Soap—you need use only cool or lukewarm water—then see how much longer the shirts will last."

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For full particulars, write Fels-Naptha, Philadelphia

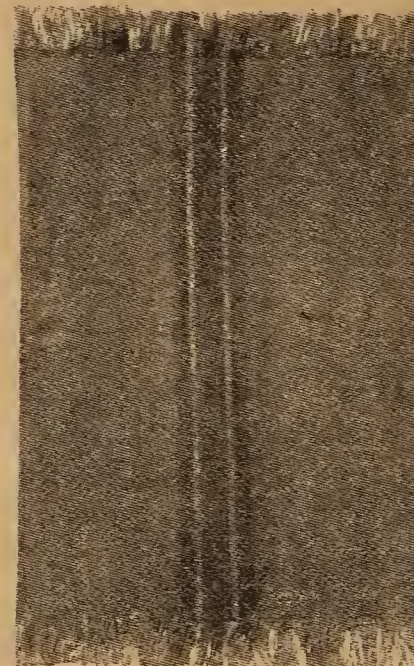
THE FANCY-WORK DEPARTMENT

Pillow-Top in Hand-Weaving

By Mae Y. Mahaffy

HAND-WEAVING, or lazy-weave darning, as someone has very aptly called it, is one of the most effective methods for securing speedy results with the needle that has come to the writer's knowledge for a long time. It has the real arts and crafts tone, and its possibilities are almost unending. It is, as the name implies, simply a weaving in and out or under and over the mesh threads of the background fabric, the under and over alter-

the colors thus entered to stand out more prominently by contrast. A blunt-pointed needle will be found a great help in this work, though one can manage with the ordinary needle by using great care not to pierce the threads of the material being used. This is accomplished more readily by turning the pointed needle backward, running the eye end in first when it must be used. Blunt needles are so inexpensive and are useful for so many purposes that it is well to keep a supply on hand.



Pillow-top

The illustration shows a pillow-top, though this work is equally well suited for scarfs, curtains, portières, couch-covers, rugs, pincushions, bags, and the like. No patterns are needed, the worker using her discretion as to colors, widths of bands, etc. In the illustration the band is shown running in one direction only, but they may be worked in both, crossing at the corners at right angles. In such cases the fringe should be omitted, or be used on all four sides of the pillow. The pictured pillow is made of green burlap, and the fringed ends have touches of the colors used by carrying the ends of floss for each row out to an equal length with the fringe.

The colors used in this case, counting from the six rows of black which form the central group outward in either direction, are as follows: four rows of dark mahogany, three of light mahogany, two of dark mahogany, two of black, skip two rows, two of black again, five of yellow, skip seven rows, five of orange. Any combination of colors may be used, the background material being the criterion by which these color-schemes must be gaged. White scrim curtains for bedrooms, for instance, may have the ornamental band down the one edge and across the bottom to correspond with the dominating color in the room, such as pink, blue, yellow, or whatever color is used. Dark, heavier materials look better in richer colorings. The originality of the individual may come into play in directing the color-scheme.

nating in each row. No threads of the material are removed, the extra, decorative ones being woven or darned in much as in darning stockings.

The work may be done on any loosely woven fabric, like burlap, monk's cloth, scrim, Hardanger cloth, Java canvas, or, in fact, almost any style of canvas. The floss required may be cotton or silk, but should be of the same size or weight as the threads of the material to be worked. In reality, a bit coarser than the fabric threads will give greater decision to the designs and cause

A Picture-Frame of Ribbon

By Marcet Lewis

THESE little trifles are made of ribbon. Any two colors may be used, but red and green seem most appropriate at Christmas-time. Take a compass and, using white cardboard, draw a circle four inches across. Inside of this draw another circle one inch smaller. Select red ribbon about a half-inch wide and satin-faced. Wind neatly around the cardboard frame. Two yards are required. Then take narrower ribbon, No. 1 width, three strands, two of red and one of green, and braid them as you would plait hair. A yard of each will be sufficient for this. Slipstitch this little trimming around outside edge; also slipstitch in the inside opening, if you wish your frame more elaborate. Hang by either green or red ribbon, finishing at top by a little bow. Any little Christmas picture will be appropriate; many suitable ones may be found on the post-

card counters during the Christmas season. To place picture, paste on with library paste, glue



A neat Christmas gift

or flour paste. On top of this, to finish, paste a white paper disk, the exact duplicate of your cardboard frame. This can be made with your compass at the time you draw the cardboard circle.

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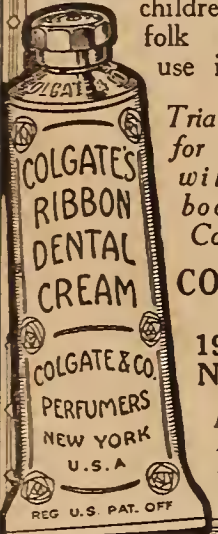
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Our Children's Page

Conducted by Cousin Sally



Elsie's Russian Christmas

By Barbara Yechton

Christmas Day—Merry Christmas, dearest Mamsie! I must tell you of our Christmas, so this letter can go to you to-morrow with Daddy's.

Well, early this morning the Denvidoffs' minister—you know, the priest—came here. He prayed, and he blessed us all, and the whole house, going from room to room, the furniture, the things to eat, the very walls, *everything!* Then we had the tree. There was a present on it for every person. Such lovely, quaint things as they were!

I do wish you could all see the way the servants dress here! The children's nurse—everybody calls her Nanya—wears a short blue skirt, and her white blouse and apron are just one mass of beautiful embroidery. Her cap is like a crown, embroidered in red, yellow and blue, and with gold threads. The two men servants wear blue shirts, short black velvet waistcoats with the shirts showing below them, blue trousers, like bags, to the knee and tucked into long boots. What do you think of that? And beards almost to their waists!

Daddy and I each got a bashlyk from the tree, a sort of hood to wear over your hat and shoulders while sleighing or driving. Mrs. Denvidoff's—no, Vera Petrovna's—father and mother came to dinner. The Denvidoff children call them "deduscha" and "babuscha"; that's Russian for grandfather and grandmother. Some boys and girls came, too, and we all played games together and danced. It was great fun! The children here don't dress up a bit;

stirrups on each side. He is a great fat man in a blue coat lined with fur and fastened tight around him with big silver buttons. He has a fur collar, too. Around his waist is a broad scarlet sash, and on his head a black-and-gray fur cap with a scarlet center, and he wears yellow gloves.

The horses—there are three of them—were also dressed up, with bright-colored reins. And the middle horse wears a high wooden yoke over his shoulders, all decorated with ribbons.

The way we flew along that avenue! Oh, Mother, it is so pretty! The roofs of the houses are blue and pink and yellow—all colors. One of the church domes is blue with gold stars on it. And the dome of the great cathedral is *gold-plated!* The way it flashes in the sunlight is beautiful! And the snow—I never saw so much snow in all my life before!

Lots of sleighs and carriages went by us, all dressed up, with people in them in their heavy furs and officers in their most gorgeous uniforms. The houses have statues on the outside and little lamps burning before them. And we saw the Emperor—the Czar—driving in a carriage that was hardly dressed up at all, but everybody knew 'twas he, and they bowed; and we bowed, and he bowed back to us.

Oh, Daddy and I did enjoy that ride! We wore great fur coats the Denvidoffs lent us, and our new bashlyks, and we did have the *dandiest* time!

Now Christmas is over, though Mascha say it's really kept up here until Epiphany, which is January 6th, when the

Czar blesses the Neva. That's the river St. Petersburg is built on.

I haven't told you half, but I'm too sleepy to write another word to-night, and Daddy is waiting down-stairs for my letter. Here comes Nanya to put out the light. Heaps of love to the boys. Good-night, sweetest, darlingest Mamsie.

Your own little ELSIE.

Merry Christmas to Our Boys and Girls

DEAR COUSINS: On Christmas Day there is a brighter sheen on the whiteness, if you live in the lands where snow silences the tread of the Giver of Gifts; or the sunshine seems more glorious, if your home is where the cotton grows and the nightingale's soft notes mingle with the coming of Santa. For Christmas everywhere is—well, just Christmas, the merriest, happiest kind of a day!

And, it seems to me, and it will to you, if you stop to think about it, that Christmas will be far happier if we make it mean something happy for everyone else.

There was a little girl I knew who was always chummy and smiling and quaint. She was poor; in fact, her father worked on a railroad as section hand, and her mother took in washing, but of all the twelve-year-olds who looked forward to, loved and got much out of Christmas, Louise was one of the grandest successes.

One Christmas morning was glowerly as to sky, slushy as to earth and muggy as to atmosphere, but Louise was like a sunbeam. Into my home she danced, or perhaps capered is the proper word.

"Oh, Cousin Sally," she cried, "it's Christmas! And—just look at my dress! It's most same as new! 'Stead of patching it, Ma put a ruffle round where I snagged it. And we're going to have oranges and nuts and a banana apiece and chicken with stuffing. The church ladies gave it and a basket to Ma, and I've got a book—just look at the pictures!" and I gazed into a gorgeously bedecked Hans Andersen's Fairy Tales, which I somehow seemed to have seen before. "And I've got a cup and saucer. They've got roses on them. And candy! Gumdrops and sticks and chocolates." Oh, it's just the gloriousest Christmas!"

It seems to me that if I were you I would be Santa for the house, and Santa to the stock, and Santa to everything. I would begin by making home "Christmas," and then when night comes and Drowsyland draws nigh, with memory filled with the Beautiful Day, your eyes will gently close, and the Real You will go peacefully into the Land o' Dreams. Lovingly yours, COUSIN SALLY.



"All around the market are booths dressed up"

St. Petersburg, Christmas Eve.

MOTHER DEAR: I am having the time of my life! And I'm so glad you let me come with Daddy, for Christmas in Russia is great fun. Everything is so odd and interesting that I hardly know which to tell you about first. Well, to begin:

The Denvidoffs are perfectly lovely to me. Olga, Maria and Sonia are the girls, and Alexander and Sergej are the boys. But at home they're called Mascha, for Maria; Sascha, for Alexander; Sonia is really Sophia, and Sergej is pronounced Sergee, with the g hard. Aren't they the quaintest names? Our boys would laugh to hear me trying to say Russian words!

Everybody here calls everybody else by his Christian name. Even the servants all call Mrs. Denvidoff "Vera Petrovna" (because her father's name is Peter), and the girls, "Olga and Mascha and Sonia Alexandrovna." The boys are all "Alexandrovitch" (son of Alexander) after their own names. This is a mark of respect, they say, because Alexander is Mr. Denvidoff's Christian name. Daddy tries to say it as they do, but I constantly forget. And, truly, I feel as if it wasn't respectful not to say Mr. and Mrs. to them.

The girls all speak a little English—think of it!—so, somehow, we manage to talk to one another. Yesterday we went to the market; everybody goes there to buy ornaments for their Christmas trees. All around the market are booths dressed up with gay colors and all sorts of things for sale. You should see the people that keep these booths! They look just like bundles in their big sheepskin coats, the wool part against them, and the ugly leather part outside. This is to keep themselves warm, for, oh, the weather is *cold!*

Women and men both wear these coats tied around their waists with red woolen sashes. The women have bright-colored handkerchiefs over their heads, and the men wear the queerest, tall, steeple caps of fur. They do look so odd.

And they certainly do have the *funniest* way of warming themselves, standing over iron pots that are full of live coals! And even then the poor creatures look cold in spite of their wraps.

I must stop writing now, for Mascha is calling me. She's such a nice girl, Mother, and very pretty. We're going now to dress the tree. I'll try and write some more in this letter by and by.

Bedtime—Just a few scribbles more, Mamsie dear, before I go to bed.

The tree looks lovely—almost as pretty as one of our trees. It's in the back parlor where the stove—a huge, tall, porcelain one—has a big fire going, so the room will be nice and warm for to-morrow. You can't open the windows here at all, only a tiny pane of glass in the upper sash. And the rooms do get so hot! This is because this house is so old. Olga says the windows in the new houses in St. Petersburg can all be opened.

To-day the Denvidoffs had a big pudding of rice and raisins, and everybody had to eat some. Mascha says that's what people always do here on Christmas Eve. And this evening a whole crowd of boys came around the house. They were dressed up like bears, wolves, foxes and ostriches! Some boys that weren't dressed up pretended to be keepers of the animals. And they told us the most comical stories about their menagerie. They had a band along, but the music wasn't very sweet, and lighted torches. The Denvidoffs gave them things to eat and some money, then the boys went on to the next house. They were so funny they made us all laugh. Mascha told me what they were saying.

She is ready for bed, so I must stop. Good-night, darling Mother.



The Adventures of a Beneficiary

[CONTINUED FROM PAGE 17]

be it confessed, he spread it carefully over a bare corner of the table. Part of it, at least, should remain unsullied.

With the gravity of a high priest, Wright transferred his plate of sandwiches to a place of honor in the middle, flanking it on one side with the bag of doughnuts, and on the other with the little cakes.

The jelly and mustard he arranged as supporting reserves, and the salt and pepper he threw forward like skirmishers before his main body.

"Dinner is served, Pete!" he announced and courteously waved to his guest to take the first sandwich. A moment more, and both were munching contentedly.

"You will recall that I recently referred to the sunshine of life, my friend," Wright said with something akin to a sigh of satisfaction. "I desire you to note that I see no reason to amend, qualify or weaken the statement."

"Ugh!" Pete mumbled. A segment of sandwich going one way and the spoken word going the other failed to pass with neatness and precision, so that the remark lost whatever note of sentiment it might have possessed. By force of contrast, indeed, it made all the more distinct the clear voice which without warning addressed the ferryman from the door.

"I beg your pardon; I should have knocked," it said. "The door was open though, and one becomes sadly informal in the country, I'm afraid."

Wright spun on his heel to face the visitor. To describe his feeling at the moment would have been a task beyond words, but its dominant element was the unhappiness of the comparison which must suggest itself between the daintily immaculate figure at the threshold and the disheveled ruffian in mid-stage gorging himself on a huge sandwich of red meat between thick layers of bread, in company with a goggling lout similarly occupied. In getting out of wet clothes and into dry ones, Wright had attired himself with more regard for convenience than appearance, and he was painfully aware of an outing shirt open at the neck and sagging over his belt, trousers easy, but bagging at the knee, and canvas shoes whose extreme comfort was derived from loss of all their early lines of beauty. He felt them slipping about his feet when he stepped forward to extend the hospitality of his mansion.

"Miss Lansing, I am honored!" he heard himself gasp miserably. "You find us somewhat—er—er—disarranged, but, I beg you, permit me—" Here he laid hands upon a chair, drew it forward, and as the clearer light from the doorway fell upon it, tried to shunt it aside, the accumulated dirt upon its seat staring at him like an accuser. "But perhaps you'll not care to sit down. Er—er—I'm fond of standing myself, and possibly—well, the honest truth is, you'd better not spoil your dress."

What dozens of girls he knew and liked would have done in her place he understood perfectly. They would have laughed outright, or giggled, or fallen so preternaturally solemn that he would have recognized at once the iron barrier of training against which mirth was struggling hopelessly. But this girl neither laughed, nor giggled, nor yielded to gloom. Instead, she smiled, and the smile was that of fellowship in the ancient and not-honored-according-to-its-deserts Order of the Unhousecleaned. She advanced into the room, bravely and with no telltale drawing of skirts about her; she calmly disregarded the very existence of a chair and the chance for discussion of the relative comfort to be derived from sitting or standing, and she nodded pleasantly at Pete, now surveying her with both eyes and mouth opened to their widest.

"You've my sympathy, Mr. Wright," she said evenly. "It's all the livelier, because it's hardly a week ago that we were in the midst of just such an ordeal, when we moved into our house. I ought to have realized that you were so new a comer, but I was too anxious to pay my just debts to think of anything else."

"I beg your pardon," Wright said, "but I must own I don't understand."

"But you said you'd trust me. Surely you remember that?"

"Indeed I would—I do!" the young man said with an approach to fervor. And then, for a second time that day, he needs must be reminded of the vulgar and earthy and commonplace meaning a ferryman, even a hereditary ferryman, must attach to the word, for the girl extended a hand, and in it he saw a silver coin, a quarter of a dollar, new and shining—and the emblem of the servitude on his part.

Wright recoiled a pace. "I—I," he began, but a laugh, a low, jeering, taunting, understanding, masculine laugh, halted him and his speech. When one's eyes are very profitably employed upon something in the immediate foreground, changes in the far from remote background escape observation. A man had stepped up to the door and was peering in, the youth in riding clothes, ruddy-faced and thick-necked, and, now that he was afoot, the bagging of his breeches and the molded fit of his jacket were even more impressive than when Wright had seen him in the saddle. When he laughed, the red of his face deepened, and, though he was laughing, he showed his teeth in a fashion that had a hint of savagery.

A faint color stole into Miss Lansing's cheeks, and her eye flashed. Yet her voice was as gently modulated as ever, as she said: "You are kind, Mr. Wright, and I shall not forget your good deeds to a distressed damsel, but I think I can give you a pledge that she will be more thoughtful in the future. Oh, but you don't understand, I fear—" for she here detected symptoms that the young man was drawing some unhappy augury from her words. "I dare say I shall have to throw myself on your good offices all too frequently, no matter how mindful of my purse I may try to be. You see, Noddy and I use the ferry very often—very often indeed, Mr. Wright."

"And may it give you safe and prosperous voyagings!" the ferryman said mightily heartily. He took the quarter, clutching it as if it had taken on a value all its own.

"That is a wish in which we can join—both of us," the girl said kindly. Then, as she turned toward the door, she threw back her head, and something in her whole pose made Wright understand that the expression on the face which the youth in riding clothes was now privileged to view was not likely to be pleasing to that gentleman, who, however, had scant opportunity for observation; for the girl advanced so swiftly that he was forced to scramble out of her way to avoid a collision. He took a step or two after her, then paused to glare at the house. When he saw that Wright was now standing in the door, he showed his teeth again, but he did not smile.

"A moment, my good friend," the ferryman said, dropping his voice to lessen danger of being overheard by the girl. "I don't know who you are, and I don't especially care to know; but I'd like to explain that if this didn't happen to be my house, and if there were nobody else within sight or earshot, I'd esteem it a personal privilege to thrash you without the formality of an introduction."

The other man bristled, then he laughed and shrugged his thick shoulders, as he turned to follow the girl.

"Suit your convenience about trying that little experiment," he said. "Meanwhile, you can go to hell!"

"Thanks for the right of way!" the ferryman retorted. "However, as between the two of us, you'll observe you're the one who seems to be going anywhere."

It was Wright's opinion that the man in riding clothes swore under his breath, but he did not halt to pursue the exchange of compliments. As for Wright, he found balm for wounded pride in the slight but significant circumstance that Miss Lansing, having picked up the reins and chattered to Noddy, was some distance away, and that her cavalier, who no doubt had driven with her to the ferry, was plodding homeward in her wake.

Wright went back to Pete and the sandwiches.

"My son," he said, and he spoke cheerily; "my son, if you live to be a hundred, never forget this: It was I who told you—told you twice in one day, remember—it is the ladies, bless 'em! that make the real sunshine in this wicked world!"

[CONTINUED IN NEXT ISSUE]

Poems with Presents

Inside the purse for sister or the wallet for brother this card can be placed:

Look into this little purse;
Nothing there you'll find.
Nothing, that is, but a terse,
Mediocre little verse.
Hoping that will reimburse
And, perchance, remind
You that endless wishes fill
Each pocket in the leather.
So think of me and my good will
In every kind of weather.

The book of verses will have its value doubled if you but inscribe a poem on the front page that rings out your wishes in simple rhyme.

Only the good should come to you,
So here's the precious lore
That sings of men both brave and true
As ne'er was sung before.

Mounted upon the winged horse
Of fabled mystery,
Oh, ride, dear one, upon your course
And ever happy be.

A paper-knife is always acceptable to the magazine-reader. If you send a rhyme on the card, you need not worry about the cent that superstitious ones insist should accompany pointed gifts.

This steel is bent
With fervent prayer
That not one cent
Be needed there
To hold our friendship true.

'Twill cut a page,
'Twill split a hair,
Curtail your age,
And many a care
'Tis hoped 'twill kill for you.

To the whisk-broom in the case for grandpa, who still likes the "old-fashioned" style and looks askance on the "new-fangled" brushes in cases, tie this little thought:

Brush! brush! brush!
It's the song of the shirt,
It's just a whisk of a broom in a rush
To remove a little dirt.

At Yule-Time

It's
now the
time for
Christmas trees,
mistletoe and holly;
sleigh-bells ringing o'er
the breeze, and everybody
jolly; the children all will eat
their fill of turkey, sauce and
candy, and Mother will be sure to
have the paregoric handy; relatives and
friends will come to pay their annual

visit;
and
swear
by all
the
saints
above
that

everything's exquisite;
gifts to make to
every one, and
that's the very reason
I save the ones they
give to me; then give
them back next season.

—Lippincott's.

For Flower-Lovers

By Dr. A. F. Bonney

FLOWERS were surely given us by the Creator to make us wiser and better, and it is not beneath our dignity or desire to understand them. We should know how to care for and feed them that they may thrive, and to that end a knowledge of how to make good fertilizers will not come amiss.

Break a lot of bones into small pieces and fill a large earthen jar with them, then pour over enough of a strong solution of lye to cover them. If stirred frequently, the bones will dissolve and form a mush, a little of which added to a bucket of water will enrich the soil wonderfully. A tablespoonful to the gallon is about the proper proportion, and used about once a week the proper application. This mixture furnishes nitrogen, phosphoric acid, lime, potash and ammonia, and if a little soot from the kitchen stove is added the flowers will lack nothing, unless it be humus, which is decayed vegetable matter.

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Household Department



Table Setting and Serving on the Farm

By Edith Charlton Salisbury

MARY CURTISS walked back and forth from sideboard, pantry and table laying the cloth with exactness, putting the napkins, each in a birch-bark ring, beside every place, arranging the bunch of holly and mistletoe in the center of the table and all the time keeping up a lively talk about home and neighborhood happenings with her guest. This woman, a farmer's wife herself, watched the table-setting with ever-growing interest. The finished result was simplicity itself. A set of pretty inexpensive china, ordinary glass, silver that couldn't boast of being anything better than triple plate, table-linen, the chief charm of which was "beautifully clean and well ironed," but orderly and tastefully arranged, it was a table worthy a much more pretentious home than the Curtisses'.

"I declare, I don't see how you manage it all. Work seems to slip through your fingers like soft butter, and you seem to accomplish wonders with a magic wand. Most farm women would think they hadn't time to set a table as you have done, unless it was for special company, and your 'hired man' must be an exception to know what to do with a napkin," said the guest.

All people, irrespective of sex or station in life, appreciate honest praise and Mary Curtiss liked it quite as well as any one, besides she had become accustomed to it. John knew that his well-ordered home—it was home in the truest sense of the word—was due to her planning and work and care and he frequently told her so—a much better way than to keep his knowledge and his appreciation to himself. So she took her friend's commendation with a smile.

"Well, I'll tell you just how it is. The amount and kind of work that I have to do averages pretty well with that of every farmer's wife. If I get through it in less time and with less weariness of head and hand, it is because of two things: First, because my home and my family make my career; they furnish the avenue through which I develop my character and talents; they give me my best outlook on life; they are my chief interest. Second, I believe strongly in the power of habit, good or bad.

"Much of my housework, which you have watched so closely, I do with very little mental effort, simply because I formed the habit of doing it in a certain way and at a certain time when I began to keep house. You would be surprised how much of our routine life is done by habit if it is accomplished with any sort of ease.

"As for setting my table, it is much easier for me to do it in this way than to drop the dishes on it in haphazard fashion. I never could understand why a farmer's family should not dine according to the 'rules of polite society,' if you like, as well as anyone else. I've been told the average farmer doesn't like to spend much time at his table, wants to see all the food on the table at once and likes to keep the various dishes revolving around the table in any old way so long as there are no pauses between serving and eating.

"As for the 'hired man's' ignorance of table-napkins, our help is generally a farmer's son or some young man who wants to learn practical farming, but we haven't had more than three or four men in the last ten years who didn't appear perfectly willing to 'do as the Romans do' as long as they were in our home. It has been my wish that everyone appear at the table washed and brushed and decently clothed, which means clean, whole garments suitable for a farmer. My wish has become an unwritten law in the household and doesn't seem to be especially irksome, for I have heard no complaints."

"If you had had several children to care for, it might not have been so easy for you to form these good habits of work, nor to have your wishes regarding table



"Mary Curtiss walked back and forth from sideboard, pantry and table"

etiquette followed so willingly," said the guest in a tone which might have belonged to Doubting Thomas's wife.

"Of course, Tom and Fred are eight and six now and have passed what is called the troublesome age, but when they were small and I had to have help with the housework I found it all the more necessary to get much of the every-day duties into the habit groove as quickly as possible in order that I might have more time for my babies and myself, which, of course, includes John. Then when the boys were old enough to come to the table I found it was doubly important that we should be particular about what we ate and how we ate it."

Then there came a pause and a far-away look that kindled into a happy smile, and the contented woman said, "I suppose every American mother sees a path for her baby boy which leads straight to the White House, and when my boys travel the road to Washington I want them to know how to handle their knives and forks properly. If they do, they should learn how at home while they are children.

"It would be absurd to strive for any elaborate service at a farmer's table or in any home where there are not at least two maids, but there is no good reason why they cannot do as much as I do. I set my table attractively, follow conventional rules as far as convenient and have the first course on the table when the meal is ready.

"John always carves and serves the meat and the vegetables, sometimes the dessert, when it is brought to the table; I preside over the tea or coffee and direct the passing of bread, butter and relishes. The dishes are removed after each course—that sounds more formal than it should, for there are generally only two courses, never more than three—and I have taught my boys to do that when I wish them to. I serve the salad with the meat course, for I find it takes less time and is easier for me.

"I never forget that a farmer is a busy man, but he has as much time to be sociable as any business man, so I encourage conversation at every meal, but avoid the busy man's bugaboo, 'waiting for meals.' John has been very good to accede to my wishes in this arrangement of family life, but the average man is reasonable and teachable if you begin with him in time.

"After all has been said, I think the future of my children has been, and is, my greatest incentive in life. Our home exists for them. I want John and myself to achieve our best, mentally and physically, for them, and I want my boys to reach that highest rank in life, good and useful citizens. The best and surest place for them to be fitted for good citizenship is in the home.

"I think, too, they are fortunate that their home is in the country where the best is possible and the highest attainable."



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