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ESTABLISHED 1877



HAPPY
NEW YEAR!

TO EVERYONE THE BEGINNING OF ANOTHER YEAR PRESENTS OPPORTUNITIES. WHEN WE WORK TOGETHER WE CAN MAKE THE MOST OF THEM. LET US HELP YOU, AND YOU HELP US. REMEMBER, FARM AND FIRESIDE IS NOW AND ALWAYS THE NATIONAL FARM PAPER —IT IS INTERESTED IN ALL THAT IS AMERICAN

WITH THE EDITOR

HOW'S your county government? Are you proud of it? Is it a government of which any citizen can be proud?

I have never yet seen an American citizen who was proud of his county government. If there is a county government in the United States of which its citizens are proud I should like to hear from that county. I should like a photograph of the county officers who are responsible for such exceptional and blessed conditions.

I don't say that there is no such thing, but I do say that I have never found it, and I have been a student of the question for many years.

Something less than twenty years ago I had charge of an investigation into the affairs of Woodbury County, Iowa, and what I found there will be discovered to a greater or less extent in literally thousands of the five thousand or so counties of the United States.

The county supervisors—called commissioners in some States, and members of the county court in others—had fallen into careless and inefficient methods which had finally become degraded into actual graft.

A supervisor would draw thousands of dollars from the road and bridge funds on his own warrant, put the money in his pocket, and account for it by turning in receipts for road or bridge work. Some of this work was done, and some was not. Most of the receipts were signed by political supporters of the supervisors. To some of them were signed names of persons who never existed.

Everything the county bought was extravagantly bought. Any dealer who was willing to put in padded bills could get the chance to sell his goods.

There was a regular system of letting bills go unpaid so that the persons furnishing the goods would put in the statements the second time, after which they were paid twice—once to the firm to which they were really owing, and again to one or more of the county ring. In most cases the merchant furnishing the goods never knew of the double payment. They had a system of orders and receipts by which the merchant was kept in ignorance.

In some cases the approaches to bridges were built and charged twice, once to the road fund and once to the bridge fund. The man who did the work got one payment and the grafters got the other. The people paid twice in these cases, and sometimes three times.

A merchant sold some blankets to the county for the use of the prisoners in the jail. He was allowed about a hundred dollars on the county claim register, but refused to accept the payment and sued the county. In court he recovered judgment for all he claimed, and was paid out of the judgment fund.



The general-fund claim he had refused to accept showed as unpaid. Somebody on the inside went to him and got an order for "any sums due me from the county" and drew the original bill over again. So the county paid the original allowance, the amount of the judgment, and the costs of the lawsuit. Rather dear blankets!

Orders of this sort were drawn in the names of people who had been dead for years.

This is a sample of the sort of work which prevailed in that county, and which plunged the county into debt from which it will not recover, the way things generally go, for generations.

Not all county governments are as bad as this was at that time, because not all of them degenerate from inefficiency to graft. But where inefficiency exists it is always in danger of degenerating into graft. The dishonest officer likes the inefficient kind of government because it enables graft to be carried on without detection.

This was in Iowa, but it is just as bad elsewhere. For instance, the board of supervisors of Westchester County, New York, according to Frank S. Hoffman, chairman of the New York State Conference for Better County Government, appropriated for expenses in their own department the sum of \$25,000.

The county treasurer's report showed that "out of" this appropriation there was expended \$32,000—and an investigation of the books showed that the sum actually spent was \$65,000!

The superintendent of the poor was allowed in the appropriations the sum of \$17,000. The treasurer accounted for \$108,000 on this appropriation, and the books showed an actual expenditure of

\$118,000—a hundred and one thousand dollars more than the sum voted this office!

This is in New York, but I opine from the statements of Mr. Winston Paul, secretary of the Citizens' Federation of Hudson County, New Jersey, that if conditions are not just as bad in that State it is because New Jersey county officers are not so enterprising.

Mr. Bailey B. Burritt, general agent for the New York Society for Improving the Condition of the Poor, says: "I am more or less optimistic about county government, but my optimism grows out of the fact that at the present time it is about as bad as it can be, and any change will be for the better."

Are the voters of the counties dishonest? Are the average officials fools or grafters? By no means. They average as high in honesty and ability as officers generally. They are simply trying to govern without the proper tools of government, and under conditions which make it profitable for dishonest men to try very hard to get into office. If you make the conditions favorable for burdock, burdock will spring up; if you make the conditions favorable for thievery and favoritism, these things will spring up.

Commission government for cities has shown that corruption in public affairs in this country depends very largely on the form of government adopted. It would be the same in a corporation if the corporate government was carried on along the lines of the ordinary county government. Corporations have to be governed honestly, or the dividends cannot be paid; so there has grown up in corporate government the system of having a board of directors elected by the people to do the legislating for the concern, and to hire the general manager and other officers to carry out the policies of the board. The commission form of government for cities is an application of this system to city government—and it works.

Can the commission form of government be adapted to county needs?

Los Angeles County, California, has already adopted it.

In my opinion we shall never get the worth of our road funds, our poor funds, our bridge funds, our general funds, or any of our funds, nor shall we get the kind of government of which we shall have reason to be proud, until we adopt something like the commission form of government for counties.

And finally, how's your county government? Are you proud of it? Is it efficient? Is it honest? And if not, what's the remedy, if I have not suggested the remedy?

Herbert Quick

NEXT ISSUE—REAL RECLAMATION—EVERY ISSUE

On every farm there is some land that might be reclaimed. Perhaps there are a few exceptions to this statement, but not many.

It may be that a part of your farm needs draining, while mine may have one field covered with Canada thistles. Whatever the nuisance we free ourselves of, the work we do is real reclamation work.

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In the next issue the story of Washington's work will be given by picture and by word. Every issue of FARM AND FIRESIDE will help you in reclaiming, in taking advantage of, the wasted places on your farm and in your home.

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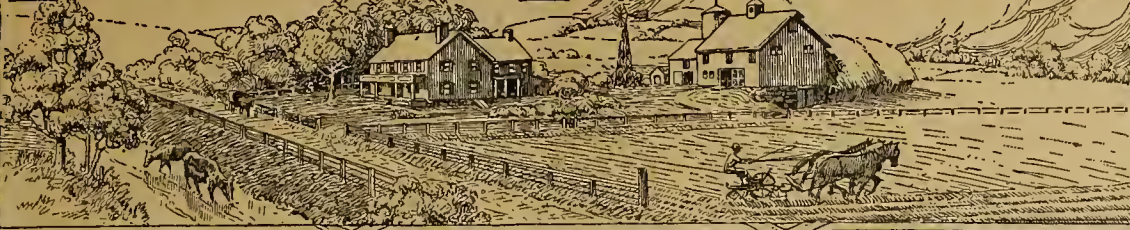
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The Impossible The Soldier Who Came Back and the Girl Who Found Him

By Jean Mahan Plank

BEFORE me lies a little circular of invitation. Upon it are the prints of two church buildings: one, a straight, oblong box of a "meeting-house," bare and unattractive, with narrow windows and one wooden step in front; the other, the conventional modern temple in which the fiftieth anniversary of the society is being held. I have never seen either of these buildings, yet within their founding is wrapped my whole life's blithe and blissful story.

It was in the bleakest of Januaries, fifty years ago. We as a nation were in the midst of a turmoil that tended to moderate our holiday effervescence, yet the after-Christmas feeling which attacks children of all ages and sizes had descended upon me just enough to make me quarrel, like the spoiled child I was, with my lover, Tom Keane.

A flame warms my cheek even now as I recall how trivial was the fire that kindled the matter which brought real suffering to our two hearts. Tom had not been able to account for the spending of some hours of his time, and under a battery of jealous questionings he tried hard to keep his patience; but I was only nineteen, with an inherited temper,—which, thank God, I've since learned to turn into useful channels,—and even Tom's sunny disposition could not withstand my unreasoning words and actions. He flung away from me, uttering a sentence that sobered me instantly with its significant finality. I think I had not known until that moment, when his strong, handsome face darkened upon me with indignant anger, how very dear he was to me.

That night was wretched enough, but there were blacker nights and days to follow. On the second morning after our quarrel I found my people conspiring to keep the newspaper out of my sight. I shrugged my shoulders languidly, for it seemed to me that the most disastrous news about my country's struggle could not affect me, encased as I was in icy despair with my own private woe. Curiosity, however, is the last emotion to die in a healthy body, so seeing a chance to confiscate the paper, I did. My half-hearted scanning of the pages led me to a notice filed in between the various reports from the seat of war—for social items were of quite secondary importance in those days—just half a dozen lines announcing the sudden marriage of Mr. Thomas B. Keane and Miss Eleanor May Roberts.

I was not of the fainting sort, but I think when I declared my determination to leave my home in Albany and go West to stay with my father's sister, whose husband was the banker in the little village of Meadow Center, Illinois, my family must have drawn a relieved breath. There were enough woeful scenes about the town without having to bear up under the depressing presence of a love-lorn maiden.

I went away with the feeling that my life was finished. It was impossible to imagine interest in anything human or even divine. I had counted, however, without the stirring personality of the "Rev. Mrs. MacNally," as I have always thought of her through the years. "Elder" MacNally, gentle, kindly old man that he was, seemed ever to drop out of sight in the presence of his paralytically efficient and capable helpmeet. The Elder was a Baptist home missionary who was establishing churches in southern Illinois, and it is quite possible that Mrs. MacNally and her type—strong, energetic, quick-tempered, and at times bitter-tongued—were meant to meet the emergencies of those hard and dreary days. Meagerly educated the type was too, for it was not expected then as now that a minister's wife should be a college woman of high degree.

Fervent in prayer she must be and was, with a trolley of faith which despite many seeming inconsistencies, somehow managed to touch the divine current.

I encountered Mrs. MacNally on the second morning

of my stay in Meadow Center. My aunt and I had ventured out to the one short business street of the village, and with nearly frosted fingers and toes had taken refuge in Kent & Harris' hardware store. By the red-hot stove stood a tall, bony woman who wore a straw bonnet which had been bound with black

MacNally threw her long body back and opened her mouth in a hearty laugh. "Of course," she added, "we'll have to canvass the town to see if there ain't more, and every place we go we'll just tell about the supper, and that'll advertise it, you see."

She paused, and cast an ominously thoughtful frown at me.

In this way it came about that during the next two days I, who would have been deemed too sensitive and delicate to undertake anything like aggressive church work in my Eastern home, by sheer force of impulsion from an abnormally active personality found myself tramping from house to house in the outskirts of Meadow Center, knocking with numb fingers upon frosty front doors, and stepping clumsily within to stand and thaw out a bit before I could put the question:

"Are there any Baptists here?"

I found only kindly folk. When they could not claim even a distant kinship to a Baptist they yet promised generally to come to the supper.

"Oh, we'll make at least ten or twelve dollars," remarked Mrs. MacNally lightly on the second evening as we sat before my aunt's grate fire of pine chunks, "mebbe fifteen. Mr. Carter has offered that lot across the street from his house for a hundred dollars. We ought to be able to get up a supper once a month between now and spring, and then there'll be ice-cream festivals and mebbe a candy pull for the young folks. Oh, we'll make it!"

She spoke with loud cheerfulness, gave a swing of her large foot, and crossed one knee over the other. Clapping her hands about the knee she suddenly plunged with equal zest and relish into pungent comments upon the favorite bits of village scandal, the details of which, at the end of a fortnight's residence in Meadow Center, she seemed to have arranged in orderly files in her memory.

The next day the town was one huge drift of snow. The banks were up to the schoolhouse windows; no mails could come either in or out; report said that a southern-bound train was blockaded two or three miles from the little station; pumps were frozen up, and householders were kept busy thawing them out and carrying in wood to keep their families from freezing up also.

Mrs. MacNally, nevertheless, rose superior to snowdrifts and piercing winds. She had set Thursday night for the first church supper, and Thursday night it should be. Early in the

afternoon we carried our provisions to the Kent & Harris hardware store, which had been cleared and swept. No business could be done anyway, so the firm resigned itself to the service of the Baptist enthusiasts.

My aunt and I, muffled to the eyes and carrying huge loaves of bread, cake and blanc-mange, and small pails of cream, found our provisions congealing on the way. The men-folk had been working all day to clear paths in the middle of the streets, for the board sidewalks had simply to be abandoned until a thaw should come. We went through a miniature canyon of snow all the way to the store.

Mrs. MacNally was already there, and the tables with spotless cloths and huge, round frosted cakes in the center, gave an air of welcome cheer to the big bare place.

After everything was ready and the coffee had begun to simmer in a large wash boiler, we all—eight women of us—sat down by the stove. The usual feminine chatter was hushed, however, for the bare windows revealed the fact that the sky had darkened and the snow was again falling heavily. Mrs. Carter, a pretty, dressy woman of forty, gave a plaintive wail:

"Oh, what shall we do? Not a soul will come out to-night. That's Meadow Center! Everything's got to be comfortable if they come to a church supper at all."

"And such a lot o' food!" murmured Miss Ayres, the milliner, with a suggestive [CONTINUED ON PAGE 18]



We stood alone, he and I, gazing spellbound

velvet ribbon in deference to the present weather. She was warming a pair of shapely, cold-roughened hands before the blaze, and she greeted my aunt with a loud, half-familiar: "Law, Mrs. Winston! You've just come in time."

She glanced a bit suspiciously at my rather fashionable attire and the white fur cape and muff I had received for Christmas. Then she looked keenly into my face.

"Is this your niece? Is she a Baptist too? Oh, I heard you was one, Mrs. Winston—a little bird told me. We're goin' to work all these girls in on our church supper."

At an inquiring look from my aunt, Mrs. MacNally threw back her broché shawl and loosened her cheap fur pelerine, thus revealing the shabby seams of the second-best black silk which was the conventional attire of ministers' wives. She lowered her voice and spoke confidentially to my aunt.

"Yes, we're really goin' to have it."

"But where?"

"Oh, of course none of the houses are big enough, but I just been talkin' to Mr. Kent, and he says we can have this store here. He'll push things back for us and we can get tables next door from Sanderson's—I asked 'em just now. Why, there's ten Baptists of us already, and Captain Brand says that every chip we turn over seems to have a Baptist under it." Mrs.

Serum, Science, and Sausage

How U. S. Inspection of Serum Plants and Their Products Helps the Hog Raiser

By D. S. Burch, Associate Editor

ON ONE occasion in attempting to get some official information on hog cholera for the readers of FARM AND FIRESIDE, I asked the office attendant of the man I wanted to see if Mr. So-So were in. "We have no Mr. So-So in this office," I was informed, "but if you want to see Dr. So-So, he is in his private office right straight ahead."

I suppressed a smile and saw the doctor, who proved a very human sort of a person after all. But the sequel to this incident is fully as interesting. A few days later—it was during the time of the foot-and-mouth disease epidemic—I happened to be at Springfield, Illinois, and wanted to see the secretary of the State Live Stock Board. I knew his name but had never met him.

"Where can I find Dr. Lowery?" I asked the well-poised, broad-shouldered gentleman who rose from his chair to welcome me.

"I presume I am the man you want to see," he said pleasantly, "but I am not Dr. Lowery. I am Mr. Lowery."

An Efficient Farmer-Official

When the first almost stunning effects of the surprise had worn off I concluded that in the State of Illinois at least everyone wasn't going tittle-mad.

Later Mr. Lowery said: "I have been in this office five years, coming here directly from the farm. During that time about two million hogs in this State have been vaccinated against hog cholera, and all the reports come to my desk. We have cholera in every county, but in the herds vaccinated the losses lately have been only about one per cent. That includes the sick herds where the disease was quite well advanced before any treatment was administered. In the well herds the losses have been very, very small. Here are the records so far this year."

The records were extremely simple. They showed first the serial number of the serum used, next the number of hogs in the herd, and finally the number that died. In fully two thirds of the herds not a hog died; some of those herds had over 100 hogs. In most of the remaining herds one or two died; and in a few herds the losses were heavy.

"These places where they lost a third or a half of their hogs," explained Dr.—I mean Mr. Lowery, "were due to sick hogs."

"They didn't vaccinate the hogs beforehand, and when they got sick it was usually too late. Our people know that the treatment is a good thing and works, and most of them get fine results; but every once in a while the tardy ones get caught by the cholera and lose a good share of their hogs."

"Theoretically there should be no losses if everyone had his hogs vaccinated, but in dealing with all kinds of people and all kinds of hogs we can only hope to keep the losses as small as possible. They will average just about one per cent, sometimes a little more, sometimes a little less."

All the serum used in Illinois must be, and is, made in factories operated under U. S. Government license. That is a state requirement. Besides that, and in order to guard against careless vaccination, all virus must be administered by graduate veterinarians or by owners who have first shown that they are qualified to do the work and who then receive a permit for it.

Showing Off Before Uncle Sam

These regulations as well as others which apply to quarantine may seem very strict, but Mr. Lowery doesn't think they are any too strict. He is a well-seasoned farmer himself and knows the damage and despair that follow in the wake of a cholera epidemic where the proper precautions are slighted.

There are five serum factories in Illinois, all under government license. Up to the limit of its capacity the state-owned factory near Springfield furnishes serum free of charge, save for the expressage. The rest of the serum used is purchased from the other manufacturers in the State or from government-licensed factories outside of the State.

Just how important is the government inspection of serums is a matter I will let the men whose plants are inspected talk about first. H. C. Moore, president of the Pitman-Moore Company of Indianapolis, says he is *absolutely* in favor of government license for all serum factories. The Pitman-Moore Company has perhaps the largest and also one of the most complete serum plants in the world. "Where you are making a product like anti-hog-cholera serum that is sent out all over the country and injected into hogs, you can't have the regulation surrounding its manufacture too strict," said Mr. Moore.

Dr. Roberts, who has general charge of the plant, said the same thing. "We not only want government inspection, but we want the very best man the Government can station with

THE control of hog cholera is neither simple nor easy. There is much more to it than short popular reports indicate.

Fear of cholera has already discouraged a good many hog raisers, and it looks as though the business and its profits will finally go into the hands of those best posted on the subject of hog diseases. Are you one of these?

Disease control is getting to be as important as feeding and breeding. The rewards of the pioneers are great, but the rewards of those who stick to a thing to the finish are also great. In presenting this article and those to follow, Farm and Fireside is trying to help you be one of the successful stickers in the hog business. Next issue—U. S. Suspected and Saved.

us," he added. The government inspector was on the job when I visited the plant. From what I saw there and at other plants likewise under government inspection I am forced to conclude that the serum made and sent out by any plant under government supervision is on an average superior to serum made without such supervision.

I have noticed, too, that government-licensed plants are inclined to comply not only with every detail the federal inspector insists on, but even go in for further improvements of their own get-up. I presume it is for the same reason that a boy likes to show off his accomplishments before his father. At least there is an incentive of some kind, because the state-licensed plants I have visited do not show the same attitude.

The Pitman-Moore Company maintains at considerable expense a bacteriological laboratory. This is not required by the Government. Mr. Moore admitted that the laboratory was not necessary, "but," he added, "it makes us feel surer of our products."

Just how much danger there is of serum's being contaminated by harmful foreign bacteria is a matter of conjecture. I should say that with scientific precautions the danger was slight. Still, the fewer bacteria you have the purer the serum is. The Pitman-Moore Company makes a bacteriological test on every batch of serum as a means of checking up the cleanliness with which each batch is produced. Guided by the results following different methods, the average bacterial count per c.c. (cubic centimeter, about a thimbleful) has been reduced from about 50,000 to less than 700. This is exceptionally good. The count in the best grades of certified milk averages about 5,000 bacteria per c.c.

Don't Mix the Twins

Another plant which puts out purer serum than government inspection requires is that of the Great Western Serum Company of Chicago. All the windows are double, are always closed, and are practically air-tight. Fresh air comes into the building through ventilators of special design, and all air first passes through a purifier which takes out dust and germs. Besides that, the air pressure indoors is kept at about two pounds per square foot greater than the outdoor pressure, so that when you open a door there is a slight gust of air outward, which keeps dust and flies from entering. This is a greater precaution than is taken in any hospital I know of, and when you consider that is all done for safeguarding the health of hogs, it is certainly getting the manufacture of serum down to a fine point.

The Great Western plant is under government inspection, and General Manager Barnett says that the very strictest inspection is none too strict for the good of the business and the good of the public. Every once in a while there is a tightening up of the requirements.

Shortly before I visited the plant the U. S. veterinarian in charge had given orders that all dirt must be chiseled out of the grooves in the cement on which the hogs stood. One inspector is there all the time, and two a part of the time. Eight employees of the company, about one third of the force, are required simply to look after the sanitary requirements which the Government insists on.

All of the plants operating under government license are not as thoroughly modern or as well equipped as those just mentioned, but they are all well operated. The two principal products manufactured by serum plants are anti-hog-cholera serum and virus. Both of these are used for making a hog immune against the cholera.

They look exactly alike, but looks are all they have in common. The serum prevents the disease, while the virus is used to produce it in mild form for the sake of producing immunity. Recognizing the danger of even the most careful worker's getting the two

mixed, the Government will not permit serum and virus to be made or even handled in the same room. Good intentions do not satisfy the gentleman who wears a starry hat and striped trousers. Uncle Sam insists on having the work laid out so that mistakes cannot be made. For these reasons you are safe in getting serum and virus from a plant operating under government

license. State inspection may mean one thing in one State and something else in another. At the Iowa State serum plant at Ames separate rooms are not provided for handling serum and virus. The work is done on separate tables in the same room.

Different States conduct the work in different ways. I have talked with a good many state officials who have charge of serum manufacture and long ago gave up all hope of trying to reconcile the totally different methods used and theories maintained.

Better Serum Since 1913

In Ohio anybody can start a serum plant and sell the product without inspection of any kind so long as it is sold inside the State. In Indiana you first have to get a license. The president of one Indiana serum factory said that he was going to get a government license as soon as things were fixed up a little more, and in the meantime would operate under a state license, which he was doing at the time of my visit. This one fact shows the inferiority of state regulations compared with the government's.

In Illinois the State furnishes the serum free, but you must hire a veterinarian to administer it, or get a permit to do it yourself. In Ohio the State charges for the serum, and until 1914 the state veterinarians have been doing the work free—just the opposite arrangement. This year you must hire a veterinarian to administer it. If he uses state serum he must first receive three days' instruction in hog-cholera work, but if he gets his serum anywhere else he doesn't have to take any course of instruction, or you can do it yourself in any way to suit yourself.

In just the three sister States mentioned, see what a hodge-podge of different methods there are; and besides that, remember that in Illinois all of the serum factories are government-licensed, in Indiana one is government-licensed and the others are state-licensed, while in Ohio there are no licenses at all.

Government inspection is practically standard. It means supervision by inspectors appointed under U. S. civil service, and they are always qualified for their work, as far as I have observed. Still, no serum manufacturer, even under no inspection, is knowingly going to send out poor or even doubtful serum unless he is a plain crook. A most modestly equipped serum factory represents an outlay of several thousand dollars, and may run up to \$100,000 or even more if the plant is a large one. Much of the expense is for concrete foundations, floors, driveways, and pens which cannot be easily moved to another State where requirements are less strict. No, a serum plant cannot be any fly-by-night concern.

According to stories I have heard, a good deal of poor serum was put out prior to 1914. The spring of 1914 seems to have been the turning point in the quality of serum and in hog-cholera control generally.

Now's the Time to Take Hope

About that time quite a lot of government and state money was available for educational work and for inspection of serums and serum factories. Uncle Sam took a reef in his suspenders, as you might say, rolled up his sleeves, and started out to see if he could find any shysters in the serum business.

The whole trouble was that people were beginning to be afraid to raise hogs because of the tremendous losses. Some of the losses were caused by fear or failure to vaccinate at all, and the hogs died in frightful numbers—about seven million in 1913. Some hog raisers vaccinated either too late, or with bad serum, or with poor judgment, or in an insanitary way, and lost a big percentage.

A great many hog raisers and veterinarians—some scientists too—didn't understand the merits of the "double treatment" over the serum-alone treatment, and they found it out only after the sacrifice of hogs that might as well have lived.

The figures are beyond comprehension. But maybe you can get an idea of the loss if you can think in terms of sausage. If all the hogs that died of cholera in 1913 had been made into Bologna sausage weighing a pound per foot, that sausage linked end to end would have gone around the earth at the equator six times. Think of the hungry people that meat would have fed!

Those hogs are gone forever. But in the meantime ways of fighting hog cholera have been perfected, and at a cost of less than half a cent for every pound of hog marketed you can safely raise all the hogs you care to.

How to Know Good Serum

The quality of serum depends on the skill and care used in all processes of its manufacture.

Some Ways of Judging Serum

Serum may be confidently relied on if—

1. The label shows it to be made in an establishment holding a U. S. Government license.
2. And if the manufacturers are men of known experience, integrity, and ability.
3. And the serum has no disagreeable odor when uncorked. (Virus may be judged by the same rules, with the additional requirement that virus must not be over ten days old when used.)

Most serum from state-owned plants is reliable, but only a few state plants are under government inspection. I should prefer serum (virus also) from a government-licensed private plant to that of a state plant not having a government license.

Unreliable Ways of Judging Serum

You cannot tell anything definite about the quality of serum—

1. By the looks of the bottle or the beauty of the label.
2. Or by the results someone else has claimed to have secured with it.
3. Or by the approval or disapproval of the average veterinarian. (He may for commercial reasons prefer a cheap serum when a better serum may be had.)

Why Not Grow Nuts?

Judging From Present Indications Southern Kernels May Thrive in New Territory

By Harry B. Potter, Associate Editor

THE latest government year book announces three new apples, one new peach, two new grapes, one new persimmon, one new orange, and one new nut—the Boone chestnut. One of the duties of the Secretary of Agriculture is to keep the country posted on the subject of promising new crops. Ask your Congressman for a year book, and from it you can see whether your soil and climate fit the requirement of the new crops.

If so, try them out on a small scale and you will be near the head of the procession in getting on the market with the new products when the public begins to demand them. The new Boone chestnut has been under development for twenty-five years. The nuts are large, sweet, and a rich brown. The 1913 crop sold for 30 cents a pound, but this price is not likely to last. But first let's go back and grow up (mentally) with the nut business.

Didn't California Hustle, Though?

English walnuts, the most valuable and important of all, have been grown in the United States for nearly two centuries. The first trees were introduced as curiosities. They have a white bark and are beautiful shade trees. A good many were planted in New York, New Jersey, and Long Island, but nothing was done with them commercially. Finally, about 1870, California took an interest in English walnuts (whose more correct but less used name is Persian walnuts). In 1897 California's walnut crop was 6,000,000 pounds; by 1905 she exceeded 12,000,000, and by 1912 had nearly a million bearing walnut trees producing 24,000,000 pounds of nuts. Besides this, over 500,000 more trees will soon be bearing.

Wide-awake Oregon copied California, and now has 10,000 bearing trees with 180,000 more growing as fast as they can. Mississippi, the third walnut State, is far behind with only 9,000 English walnut trees all told. So you can see that none of the States where English walnut growing started made anything at all out of the business compared with the Westerners. The markets, too, are good, for even with the increased production the average yield in California for ten years back has been 5,000 tons a year short of importations.

English walnuts are regarded by the California Development Board as a line of farming "where the production is regular and the returns good." The average price to the grower for the past ten years has been \$300 a ton, or 15 cents a pound.

The trees require rich soil, plenty of moisture, and a moderate climate. Some of the hardiest English walnut trees on the Atlantic Coast are found as far north as Massachusetts. From New Jersey southward the business has commercial possibilities. Choosing suitable varieties cannot be emphasized too strongly. The new kinds lately developed may do well where other kinds have in the past failed entirely. As with corn and peaches which years ago were considered only Southern crops, English walnuts may with care be grown in middle latitudes.

It grafts readily on black walnut stocks, and such trees are claimed by trustworthy authorities to yield more abundantly and also stand the winter better than those grown on English walnut stock. Maryland has about 100 English walnut trees, according to Mr. C. P. Close of the experiment station of that State.

He asserts that the quality is good, and one tree fifty years old has produced from 3 to 10 bushels of nuts per year for the last thirty years. The station has purchased 1,200 English walnut trees which are to be used for experimental purposes.

"The National Nurseryman," a trade publication dealing with nuts, cites the purchase of 16 acres of Connecticut land to be used for English walnuts. Mr. E. C. Pomeroy, who has acquired this land, has studied the California walnut industry, and believes in the success of hardy English walnuts commercially in the East and Northeast.

Peanuts Second, Pecans Third

The second most important nut in the United States is the peanut. Scientifically the peanut is a pea, and not a nut. But popular opinion has classed it as a nut because of its flavor. Like the English walnut, the peanut didn't become important until about 1870, though it had been known for a long time before.

The peanut is now grown all through the southern half of the United States, and the 20,000,000 bushels raised in 1909 (last census) were worth about \$18,000,000. The popularity of peanuts is due to the ease of shucking and the low retail price. The early age at which the American public learns to love this nut also helps to explain perhaps its remarkable popularity.

EW



This is how the clusters of pecans grow

The pecan stands third in importance. Pecan orchards are most highly developed in Georgia, Alabama, Louisiana, and Florida. But Texas and Oklahoma have the most bearing trees, pecans growing wild all over eastern Texas. The area in which pecans do well commercially extends westward to central Texas, as far north as southern Iowa, Illinois, Indiana, and

shadow the output of the United States and, in spite of home development, importations have more than doubled since 1908.

Pecans need a deep fertile soil, moist but well drained. Persons wishing to engage in pecan culture have 67 prominent varieties to choose from. Unfortunately pecan culture has been abused and the five and ten acre plots sold by some development companies to persons entirely ignorant of its care have been stocked with inferior trees, and many dreams of wealth have been shattered.

Why the Demand is Steady

Pecan trees need skilled care and cultivation just like any other orchard fruit. Pecans will grow on the Pacific Coast, but have not received much attention there because the crops now grown bring better prices. While some pecans bring as much as 50 cents a pound, the average price to the grower has been about 8 cents a pound. In 1909 (last census) nearly 10,000,000 pounds of pecans were grown in the United States, Texas producing about three fifths.

The trees make good shade trees, and for nut-growing require eight or twelve years to mature. From 17 to 20 trees are planted per acre. The pecan is closely related to the hickory nut and can be grafted on hickory stock. E. R. Kone, commissioner of agriculture of Texas, says that few of the hickories bear profitable crops of nuts, and recommends that the 10,000,000 hickory trees in Texas be worked over into pecan trees.

The customary method of marketing is in carload lots, though several growers have developed profitable markets through parcel-post and express shipments.

The uppermost limit of successful pecan culture now is Virginia. Farther north the trees will live, but the nuts are smaller and do not fill out well.

W. N. Hutt of the North Carolina Department of Agriculture is encouraging pecan culture in that State. He says there were about 25 large pecan orchards in 1911, and interest in pecans was growing faster than the orchards. Maryland has about 200 pecan trees.

The almond is the fourth most important nut. California has about 1,500,000 almond trees, and all the rest of the United States less than 50,000. California's almond production is about 7,000,000 pounds a year, worth about \$750,000. Arizona, the next most important of the almond States, grows only 34,000 pounds a year.

The principal other nuts grown in this country are the native black walnut, butternut, hickory, hazel, chestnut, and beech. But compared with the principal four, they have a low market value and the demand is largely local.

California is the champion nut State of all. Her total nut products are now estimated at about \$4,000,000. Texas is next with a \$500,000 nut industry.

Now for New Nuts

A good deal could be said about the food value of nuts, and the many products made from them. In brief, nuts are a good food and nut products are getting popular. But the main thing to remember is that California's \$4,000,000 nut industry is only a young industry. It didn't start itself. It had to be started and given a chance, and it might have started a hundred years before it did. Watch the new discoveries as the Government announces them, and remember that nut culture is moving northward. The English walnut is up into Oregon and the pecan is into Indiana and Maryland. The Northern Nut Growers' Association, a co-operative institution for the general good, is authority for this statement:

"It is probable that most nuts will grow wherever the peach will. Outside the peach area there is probably not much use in trying to grow the pecan or Persian walnut. Yet it must always be remembered that nut-growing in the North is at present almost entirely experimental, and that anybody may be able to disprove the authorities."

The best thing about nut production is the steady demand for the staple sorts. Even the wild nuts of the woodlots can usually be sold for something, and such a thing as a glut of pecans, English walnuts, or almonds is unknown. The reason is that, unlike most fruits, their sale extends over a large part of the year, and as they get cheap, people eat more of them. Further indications of the interest in nuts is found in the prizes offered by the Northern Nut Growers' Association to persons discovering improved varieties of walnuts, hickory, or hazel nuts. Secretary W. C. Deming of that association (Georgetown, Connecticut, and to whom correspondence and samples of nuts should be addressed) points out that some of the most valuable commercial trees are simply improved wild trees, and that occasional wild trees bear nuts of superior quality.



A five-year-old California almond orchard that produced three hundred dollars' worth of nuts per acre. This orchard is irrigated once or twice each season. It had just been irrigated when the picture was taken

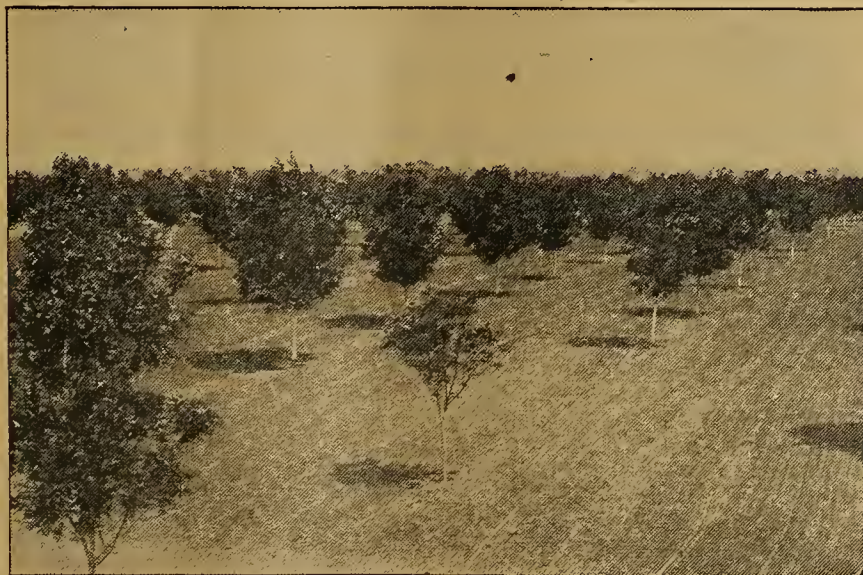
Virginia, and from there down the coast except for the mountainous areas where the tree refuses to grow.

Altogether about 300,000 pecan trees are under cultivation in the United States, but Texas alone has over 10,000,000 native uncultivated pecan trees. Five towns in Texas ship out about \$250,000 worth of pecan nuts a year. Wild pecans from Mexico, however, over-

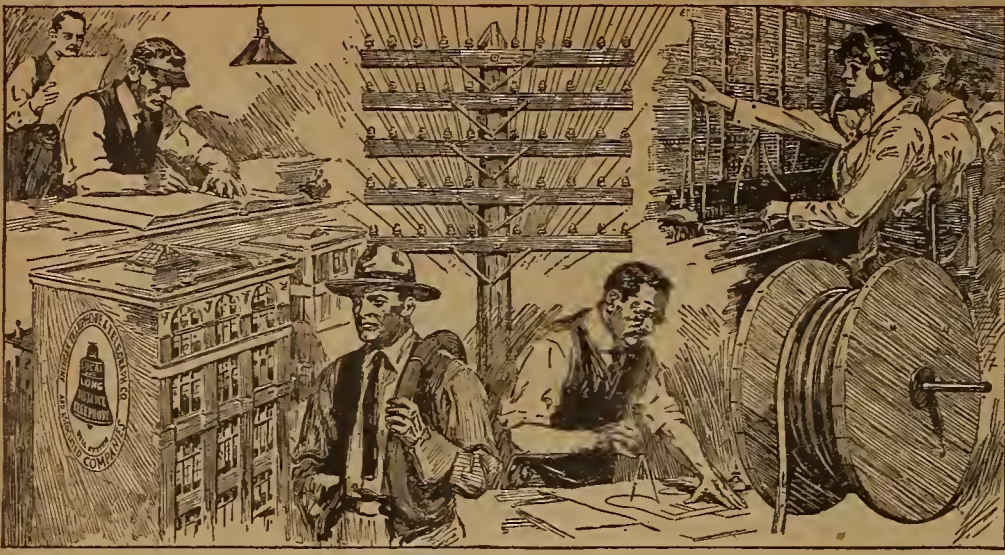
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A well-kept pecan orchard seven years old. Such an orchard requires much the same preparation as an apple orchard



Managing the Business of 8,500,000 Telephones

Imagine a manufacturing business having millions of customers scattered over the country, with millions of accounts on its books, most of them less than \$30 a year, and including a multitude of 5-cent charges.

Consider it as having shops and offices in thousands of cities, and reaching with its output 70,000 places, more than there are post offices in the United States. Think of the task of patrolling 16,000,000 miles of connecting highways constantly in use.

This gives you a faint idea of the business of managing the Bell System.

Not all the 8,500,000 telephones are in use at once, but the management must have facilities always adequate to any demands for instant, direct communication.

In so vast an undertaking, every branch of the organization must work in harmony, guided by one policy. The entire plant must be managed in the light of accumulated experience, and with the most careful business judgment.

The aim of the Bell System is to make the telephone of the utmost usefulness. This requires an army of loyal men and women, inspired by a leadership having a high sense of its obligations to the public.

Animated by the spirit of service, and unhampered by red tape, the 150,000 Bell employes have the courage to do the right thing at the right time upon their own initiative. They work together intelligently as a business democracy to give the public good service.

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The Money They Paid Me

Experiences Like That Related by J. L. Corathers

We Made 366 5/8%
By G. W. Collins

WE ARE going to go Mr. Corathers one better and take the profits of only one year to do it; but our flock of sheep is much smaller in number.

1914	
To 4 medium wool ewes . . .	\$14.00
By 6 March lambs sold Oct. 16th, 562 lb @ 7c	\$39.34
By wool, unwashed	6.00
By ewes worth (would not take it)	20.00
To balance	51.34
	<hr/>
	\$65.34 \$65.34

arranged a creep for them, and fed oats, all they would take. You will notice that my sheep sheared an average of 12 pounds per head, but I sold 4 cents per pound lower than I should have. I shall endeavor to get a better price next year. I hope to find a reliable commission man. The value of the manure is sufficient to cover labor expenses.

[FARM AND FIRESIDE can be of assistance to any reader who desires the names of reliable commission men in his community.—EDITOR.]

Who Could Ask for Better Results With Sheep?

By S. A. Saum

I HAD 39 ewes, rather small ones, during the winter of 1912-13. We raised 39 lambs, and sold lambs and wool amounting to \$211.50, keeping the old flock.

We fed the ewes on oats and bran during the cold winter weather. For long feed we used fodder or clover hay. One pint of oats and bran twice a day was given. The ewes all had milk enough for the lambs.

The ewes cost me \$4.25 per head, or \$161.50. We sold 10 of the old flock and kept 28 last winter. This spring we sold lambs and wool amounting to \$150.50. We now have 44 ewes for this winter.

Pin-Money From Sheep

By Josephine G. Chapin

MY EXPERIENCE with sheep has been quite profitable, but my flock is very small. It is impossible for me to keep a large one either summer or winter.

In the year 1907 I was given a disowned lamb of good Leicester stock, which I raised on a bottle, and, excepting for one lamb which died when a few days old, I have had ever since a fair income, besides the four sheep now on hand for breeding stock.

As the sheep have cleaned up much that otherwise would have been wasted, and as their grain and other feed has been raised on the farm, I feel that the annual income is clear gain.

Following is an account of the transactions:

1908, By 10 lb wool @ 21c	\$2.10
1909, By 10 lb wool @ 25c	2.50
1910, By 26 lb wool @ 20c	5.20
By 1 lamb	6.00
1911, By 38 lb wool @ 15c	5.70
By 2 lambs @ \$6	12.00
1912, By 34 lb wool @ 20c	6.80
By 3 lambs @ \$6	18.00
By 2 lambs @ \$7	14.00
1913, By 40 lb wool @ 18c	7.20
By 3 lambs, 390 lb @ 6 1/2c	25.35
1914, By 55 lb wool @ 19c	10.45
By 8 lambs, 1,009 lb @ 7c	70.63
By 1 sheep	7.00
Total	\$192.93

My Crop of Wool and Lambs

By O. A. Renahan

THREE years ago I purchased nine grade Shropshire ewes for which I paid \$5 per head. These ewes were known to be very prolific breeders and most excellent mothers.

The first year (1912) these ewes all brought twin lambs except one, which gave birth to triplets. These lambs when six months old averaged 98 pounds and sold for \$6 per cwt. The wool sold for 24 cents per pound. The average income from each ewe this year was \$10.56.

In 1913 there were two single lambs, the balance twins. These lambs averaged 95 pounds and sold for \$6.35 per cwt. The wool sold for 20 cents per pound, giving, this year, an average per ewe of \$9.50.

This year there was one single lamb, a set of triplets, and the balance twins.

Close Figuring Shows Profit

By A. F. Ames

A STATEMENT of my feeding operations with sheep for the last four years would read like this:

Nov. 11, 1910, To 10 head Lincoln ewes . . .	\$125.00
Jan. 1, 1911, To 1 Lincoln buck, ewe and lamb	20.00
June 22, 1911, By 176 lb wool @ 14c	\$24.64
Oct. 26, 1911, By 3 buck lambs	32.00
Dec. 25, 1911, To 58 range ewes	188.50
June 10, 1912, By 756 lb wool @ 17 1/2c	132.30
June 20, 1912, By 7 old ewes @ \$3	21.00
July 28, 1912, To 1 Lincoln buck	20.00
Oct. 1, 1912, By 8 bucks	107.50
Jan. 30, 1913, By 22 S2-lb lambs	109.35
June 21, 1913, By 1,056 lb wool @ 15c	158.40
July 10, 1913, By 20 old range ewes @ \$3	60.00
Sept. 29, 1913, To 15 grade ewes	67.50
Feb. 2, 1914, By 24 lambs, 2,270 lb	125.70
June 7, 1914, By 1,468 lb wool @ 14c	205.52
June 20, 1914, By 31 Feb. lambs, 2,150 lb	129.00
June 20, 1914, By 3 wethers and 6 pelts	11.70
Sept. 1, 1914, By 2 bucks	27.50
Nov. 11, 1914, By invoice, 120 grade ewes @ \$6	720.00
Nov. 11, 1914, By invoice, 40 Lincoln ewes @ \$8	320.00
To balance account	1,763.61
	<hr/>
	\$2,184.61 \$2,184.61

Now, according to Mr. Corathers' method of accounting, my net gain in four years is \$1,763.61; but according to my method I have left out some very important items, as follows (To economize space I will give totals.):

To interest on investment, at 10 per cent	\$220.00
To rent on pasture, to equal 35 acres for one year	350.00
To hay, alfalfa, 125 tons @ \$5	625.00
To sundries, salt, wool sacks, shearing	50.00
To taxes	25.00
Legitimate expenses	\$1,270.00
\$1,763.61 less \$1,270.00 leaves	\$493.61
net profit.	

My sheep don't "destroy filth" as Mr. Corathers says his did, but they are great to clean up weedy fence rows, pastures, and ditch banks.

Notice that in 1912 and 1913 I kept my lambs until ten months old and sold as grain-fed lambs, and in 1914 I sold at four months for almost as much money per head and saved six months feed. I

What Was Your Rut?

And How Did You Manage to Get Out of It?

SOME farmers never get into a rut. Some never get out of one. The most interesting experience are those of the people who have been in a rut and pulled themselves out. We'll give two prizes of \$5.00 each for the best two letters from men who have pulled themselves out, telling what sort of rut it was and what started the machinery to pull them out. In addition to the \$5.00, we'll pay our regular rates for the prize letters, and also will pay for any other "rut" letters we publish. The chief good of these things, however, will be the aid the experience will be to others.

These lambs were from a purebred buck, and I sold two young rams for \$8 each. The remainder of the lambs averaged 80 pounds, and sold for \$7 per cwt. The wool sold for 25 cents per pound, making an average income per ewe of \$12.25.

This gives an average income per ewe, for the three years, of \$10.77.

Men often say to me that they would rather see a ewe have one lamb than two. I argue that the ewe has no other business than to raise lambs, and when one raises two lambs that average 80 pounds or better at weaning time, I call her a good ewe—and a money-maker.

But someone will ask, "What is your profit?"

Not counting the added fertility to the soil, nor the value of the sheep as weed destroyers, I always figure that the wool pays for the pasture, rough feed, and the very little grain which they consume. A pint of oats each day per head for a few weeks before lambing—continued till they are put on pasture, gives good strong lambs, and the mothers have plenty of milk, therefore there is practically no annoyance from ewes not wanting to own their lambs.

During summer sheep apparently thrive without water, but when on dry feed—during the winter—they are very hearty drinkers.

I believe every American farm should have its flock of sheep. They require much less attention than either cattle or hogs. They convert many noxious weeds and weed seeds into valuable mutton and give two crops a year—wool and lambs.

At the right of accompanying photo are one of these ewes and her twin "boys."

The pigs were Duroc-China cross, and the corn used was cull soft corn which I thought worth about 60 cents per bushel. The supplement used was palm-oil middlings and the separated milk from five cows.

Following are the figures taken from my notebook:

Value of pigs Nov. 22d	\$40.00
Paid for palm-oil middlings	12.00
80 bu. corn @ 60c.	48.00

Total cash cost\$100.00

1 pig sold Dec. 14th	3.50
7 pigs sold Feb. 1st, weight 150 lb, each @ \$7.75 per cwt.	81.37
5 pigs sold March 15th @ \$8 per cwt.	75.00

Total received for 13 pigs	\$159.87
Total cost for 13 pigs	100.00

Profit and pay for time \$59.87

From the \$59.87 must be deducted my time in caring for them, and the value of the milk, which I think would leave at least \$50 clear profit, considering the two loads of manure left on the place and the medium the hogs furnished for marketing my soft corn.

Palm-oil middlings contain 14 per cent protein and 6 per cent fat, and cost me at the rate of \$20 per ton.

I Didn't Lose

By H. Z. Ellis

I WOULD like to know in what State or county Mr. Corathers (who gave in the November 7th issue his experience with sheep) lives, to get sheep so cheap and sell wool so high. I see that he has

made a higher per cent on his investment than I have on mine, but I don't feel that I have lost anything on my \$100 invested. Besides, think of the days I would have spent cutting weeds!

Following is a statement of my \$100 invested in sheep, since April 1, 1913:

May 29, 1913, By 142 lb wool @ 18c.	\$25.56
Sept. 6, 1913, By 6 lambs, 460 lb @ 5c.	23.00
May 7, 1914, By 220 lb wool @ 21c.	46.20
Aug. 1, 1914, By 17 lambs, 1,370 lb @ 6½c.	89.05
Nov. 8, 1914, By 24 head on hand, value	150.00

Total	\$333.81
April 1, 1913, To 15 head sheep ...	100.00

Profit\$233.81

My First Year

By Wilbert B. Stewart

I HAVE been in the farming business just one year, and would like to give my experience. I was still working at my office position when I learned of the sale of some sheep, and so had my father purchase them for me and care for them until I moved to the farm, November 5, 1913.

Sept. 30, To 26 ewes @ \$3	\$78.00
Oct. 15, To 2 sheep killed by dogs	6.00
Jan. 15, To 1 sheep died of grub in head	3.00
Apr. 20, To 1 sheep died of old age	3.00
June 20, By 147½ lb wool @ 25c.	\$36.87
July 21 to Sept. 13, By 1,255½ lb lamb @ 7c.	87.88
On hand, 22 ewes @ \$3.75	82.50
To Balance	117.25

There were only 19 lambs, and one ewe would not own her lamb, so my little daughter raised it by hand. When it was about ten months old something got away with it, so only 18 lambs were sold, at an average of \$4.88. The oldest ones were sold before they were five months old.

The flock was not housed warmly. Snow blew in through the cracks of the shed, but the sheep did not get wet.

I hauled ten two-horse loads of manure and, like Mr. Corathers, I consider that the sheep paid for their keeping in this way.



Sheep require much less attention than either cattle or hogs

At the left are a pair of ewe lambs and a single. The photo was taken when the lambs were three and a half months old.

My Experience With Sheep

By Chas. M. Byar

IN MARCH, 1907, a neighbor gave me a little motherless lamb. I fed her milk, and she did nicely. This was my first experience with sheep.

The next year I obtained two more lambs in the same way. One was a male. For the next two years I obtained two each year, making seven in all. From this little flock I have been able to realize a neat sum.

Considering that my sheep have helped to clear my land of weeds and locust bushes (which are a great pest in my part of Kentucky) and have added fertility to my land, I figure that all money taken in is clear profit.

Below I give a statement showing the profits from year to year. Note the steady increase, except for 1913, when I sold off part of my older ewes and replaced them with younger ones.

1908, By wool	\$2.25
1909, To 1 ewe lamb	\$3.45
By wool	6.62
By lambs	13.00
1910, To 1 Southdown ram	10.00
By wool	14.40
By lambs and ram ..	21.90
1911, By wool	15.67
By lambs	55.90
1912, To 1 Southdown ram	10.00
By wool	17.25
By lambs and ram ..	77.30
1913, To 8 young ewes ...	43.75
By wool	21.00
By lambs and ewes..	106.05
1914, By wool	23.20
By lambs	92.95
By 17 head @ \$7 each ..	119.00
To profit	519.29

Total.....\$586.49 \$586.49

What the Notebook Shows

By H. R. Crabb

IN THE November 7th FARM AND FIRE-SIDE I read Mr. J. L. Corathers' article about his sheep, and your note asking for similar accounts. I am submitting an account of the 13 pigs I fed last winter, which I think paid about as well as one could ask. Could sheep have done better?

When I began keeping account, November 22, 1913, 7 of the pigs were two months old, and the remaining 6 were four weeks old.

CO₂ is the Chemist's Name For the Gas that Makes Soda Water

Read how it is now used to make rubber footwear fifty per cent. more durable.

The United States Rubber Company now owns the patents on a new process by which heavy service rubber footwear is vulcanized.

The rubber footwear when ready to be vulcanized is placed in an air tight compartment. All air is withdrawn—then CO₂ (carbon dioxide gas) is forced into the compartment and a uniform heat and pressure maintained for a certain length of time. The result is marvelous. By this process the rubber compound is given tremendous strength and toughness. All the pieces of which the footwear is made are welded into one composite whole.

Nearly all reliable dealers sell "U. S." Patent Pressure Process Heavy Service Rubber Footwear. If your dealer has none, write us, telling what kind of boots you wear, and we will see that you are supplied. Look for the seal—instant upon it.

United States Rubber Co., N. Y. City

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, Editor

January 2, 1915

Denatured Alcohol

THE materials for making alcohol can be produced from the farms in unlimited quantities; and if the residue of the crops used is returned to the soil, not a particle of the fertility will be taken from the land. Alcohol comes from the starch and sugar which are obtained by the plants from the air.

This must not be taken to mean that it is perfectly sure that we can grow crops from which we can make alcohol at prices which will compete with gasoline and kerosene, for they also are a gift to nature, and flow from the earth in huge quantities.

It does seem, however, that we ought to have a government demonstration as to whether or not we can make denatured alcohol in farm stills at a profit. If we can, it will be a good thing to know that we can. If we cannot, let us know that, and we can dismiss the matter from our minds. The minds of the American farmers are stirred up over the matter, and have been for many years. The notion has become quite generally accepted that great commercial interests controlling the supply of petroleum have secretly prevented progress in the making of denatured alcohol in farm stills.

We do not believe that any such sinister control has been exercised, but the best way for Congress to prove that they have not is to pass the Falconer bill, which will enable groups of farmers to have the demonstration made under government auspices, the Government paying a part of the cost because of the public interest in having the thing worked out.

Thus only, or in some similar way, can the reasons be made clear just why the farmers of France and Germany can make denatured alcohol and we cannot.

Sick the Solons on the Dogs

THE legislatures meet in the winter, and it is safe to predict that there will be more activity in dog legislation in the early months of 1915 than ever before in this country. Mr. O. D. Hill of West Virginia, a man of national repute, sends us his ideas on the subject embodied in a bill and petition. People desiring to sign the petition may get copies for West Virginia use by writing to Mr. Hill at Kendalia, West Virginia. The bill itself is a document of great interest.

It provides that every owner of a dog shall give bond in the sum of a thousand dollars to pay any damages done by the animal; that no dog shall run at large without a muzzle, except dogs holding a certificate signed by three freeholders who are engaged in farming or stock-raising, to the effect that the animal is harmless, trustworthy, and of value for stock or hunting purposes, and then he may run at large only

when actually in use on the owner's land or on other lands by and with the consent of the owner of the lands given in writing, or when actually going or coming on the dog's regular business of hunting or caring for stock, but even then, if the dog does any damage, the owner is liable on his bond; that every dog shall wear his owner's name and address on a collar; that dogs running at large in violation of law may be killed by anyone, and a bounty of five dollars will be paid out of the public treasury for the scalps of such dogs; that every dog shall be valued as personal property, and dogs legally kept shall be paid for at their assessed valuation by anyone destroying them.

The above is the gist of the bill. It seems to us to have some excellent points, chief among which is the provision for the listing of dogs, their muzzling when running loose, and the provision against dogs running at large. The provision for a bounty on outlaw dogs is a doubtful one.

It might easily lead to raids on the public treasury by breeders of dogs expressly for bounties. Five dollars is a good price, and dogs can be grown to bounty age for that money at a good profit. The provision against the owner's getting the bounty is one easily evaded. The killing of dogs by people seeking to earn bounties would almost certainly result in neighborhood feuds.

In another part of this paper is a draft of a law which is offered as a suggestion for legislation looking to the lessening of the dog evil without in any way lessening the blessings which many people find in the possession of this immemorial friend and companion of man.

A Reflection of Character

ALDERMAN LAWLEY of Chicago introduced in the city council an ordinance for the licensing of all commission merchants and jobbers in "agricultural or farm products other than horticultural." The object of the ordinance was stated to be the protection of shippers against commission sharks. Two hundred members of the Chicago Board of Trade appeared before the judiciary committee of the council to protest against the regulation. Mr. John B. Mitchell of the Butter and Egg Board was one of the speakers against the measure. The passage of the ordinance, he said, would be a reflection upon the honesty and character of the men engaged in handling foodstuffs.

After all that has been printed, said, and proved as to the irregularities of commission men—many of whom are quite free from blame—the worst reflection ever made on these men is their own objection to regulation.

Doing Things Without Law

WHILE we have been talking about national employment agencies, the Bureau of Immigration of the Department of Labor has been acting without any law, or authorized only by a clause providing for assistance "in the beneficial distribution of aliens." In response to a telegram from the state labor commissioner of Oklahoma the Department, by making employment agencies of the post-offices throughout the country, made a canvass for harvest hands, and an effort to get them in touch with farmers in need of help.

We should be glad to hear from Oklahoma farmers as to the results where results count—on the farms.

When the city of Salem, Massachusetts, was so largely damaged by fire that nearly three thousand textile workers were thrown out of work, the Department of Labor found places through similar agencies for about half of those unemployed. The law should be changed so as clearly to authorize the Department to act for American laborers as well as aliens. The need for such work is great, and the Department of Labor would seem to be the proper agency for performing it.

Apple Ignorance

A NEW YORK newspaper complains that while New York State grows more apples than all the territory west of the Missouri River, and the section in which the city is located produces the fruit with a flavor to which no other is "quite equal in delicacy," that the greatest city in the land gets the poorest of these. "Will it be said," is the query, "that the city does not know what a good apple is, or must it be said that the distribution of the crop is manipulated in the interests of the buyers?"

One would think that it would pay to sell the choicest apples in the world in the world's most luxurious city, if the people there really know a good apple. As a matter of fact, the apple business in New York is in the hands mostly of dealers who do not know one apple from another. They display the finest-looking fruit they can find, and call their duty done. Other dealers study their goods, but the apple dealer never. He will sell Ben Davis with no idea that it is not as good as Delicious, or Grimes Golden alongside Northwestern Greening ignorant of the fact that there is any difference between the two yellow apples. He will sell Lawver in November when it is not fit to eat until February. There are nearly three thousand named varieties of apples, and the average street dealer in New York City knows not one of them. Ask him what variety he has and he will say, "Oh, ver' good apple! Ver' good apple!"

What the variety is, whether or not it is good when prime, when it should be consumed, whether it is good for baking, for pies, for sauce, or for eating out of hand, how long it may be kept, and other questions come up in the consideration of each of the hundred or more commercial varieties of apples. What is most needed in New York, as in all cities, is the development of a critical taste in apples on the part of consumers, and night schools where retailers may learn the rudiments of this branch of pomology.

Schools and Jails

THE state superintendent of Alabama speaks plainly after a recent survey of the schools of the State. He says that many a farmer pays more for the upkeep of his automobile than the entire community spends for the maintenance of the school, including the teacher's salary. "The jail," says he, after describing the dilapidated rural schoolhouse, "has sanitary drinking fountains, shower baths, clean floors, plenty of light, good ventilation, and is otherwise attractive. Could a person from the district in which this school is located be blamed for preferring the jail?"

Of course the superintendent is speaking of some of the rural schools of his State only. There are others which are among the best in the country. Probably there are bad jails in the State, also.

Are the people of the districts with the disgraceful schools to blame for them? Not always, and probably not often. The districts are too small. The schools are too purely local institutions. The governing body of every school should come from a large enough district so that its members may take the larger view and not be hampered by too few constituents. In many of the Alabama districts, and thousands of districts all over the country, there are not enough people in the district to be able to entertain a real public opinion or act in a public way.

The trouble lies not in the people but partly in the schools, and partly in the way school districts are organized.

A whole county was taxed to make the jail of which Superintendent Feagin speaks. If the whole county had built a school it might have been quite as "attractive" as the jail.

The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Five

IN ORDER to break a deadlock on the school board, Jim Irwin was nominated district-school teacher. Then each of the three members of the board gave him one vote, each believing his would be the only one Jim received. Thus placed by accident in charge of the children's education in Woodruff District, Jim Irwin set about educating the boys and girls for the lives they were likely to lead, to the horror of parents clamoring for culture, and to the consternation of his old sweetheart, Jennie Woodruff, who was elected county superintendent.

XIII

The Black Alpaca Dress

JIM IRWIN was to be crushed like an insect. The little local gearing of the big party machine was to crush him. Jennie dimly sensed the tragedy of it, but very dimly. Mainly she accepted Mr. Peterson's suggestion as to "lining up" Jim Irwin as so thoroughly sensible that she gave it a good deal of thought that day. Her sense of irritation made the task easier.

She could not help feeling a little resentment at Jim for following his own fads and fancies so far. We always resent the necessity of crushing a weak creature which must be wiped out. The idea that there could be anything fundamentally sane in the overturning of school methods under which both he and she had been educated was absurd to Jennie. To be sure, everybody had always favored "more practical education," and Jim's farm arithmetic, farm physiology, farm reading and writing, cow-testing exercises, seed analysis, corn clubs, and the tomato, poultry and pig clubs he proposed to have in operation the next summer seemed highly practical; but to Jennie's mind the fact that they introduced dissension in the neighborhood and promised to make her official life vexatious seemed ample proof that Jim's work was visionary and unpractical. Poor Jennie was not aware of the fact that new truth always comes bringing, not peace to mankind, but a sword.

"Father," said she that night, "let's have a little Christmas party."

"All right," said the Colonel. "Whom shall we invite?"

"Don't laugh," said she. "I want you to invite Jim Irwin and his mother, and nobody else."

"All right," reiterated the Colonel. "But why?"

"Oh," said Jennie, "I want to see whether I can talk Jim out of some of his foolishness."

"You want to line him up, do you?" said the Colonel. "Well, that's good politics, and incidentally you may get some good ideas out of Jim."

"Rather unlikely," Jennie dissented.

"I don't know about that," insisted the Colonel, smiling. "I begin to think that Jim's a brown mouse. I've told you about the brown mouse, haven't I?"

"Yes," admitted Jennie, "you've told me. But Professor Darbishire's brown mice were simply wild and incorrigible creatures. Just because it happens to emerge suddenly from the forests of heredity it doesn't prove that the brown mouse is any good."

"Justin Morgan was a brown mouse," said the Colonel. "And he founded the greatest breed of horses in the world."

"You say that," argued Jennie, "because you're a particular lover of the Morgan horse."

"Napoleon Bonaparte was a brown mouse," stated the Colonel. "So was George Washington, and so was Peter the Great. Whenever a brown mouse appears he changes things in a little way or a big way."

"For the better, always?" asked Jennie.

"No," answered the Colonel. "The brown mouse may throw back to slant-headed savagery. But Jim—sometimes I think Jim is the kind of Mendelian segregation out of which we get Franklins and Edisons and their sort. You may get some good ideas out of Jim. Let us have them here for Christmas by all means."

In due time Jennie's invitation reached Jim and his mother, like an explosive shell fired from a distance into their humble dwelling—quite upsetting things.

Twenty-five years constitute rather a long wait for social recognition, and Mrs. Irwin had long since regarded herself as quite outside society. To be sure, for something like a half of this period she had been of society, if not in it. She had done the family washings, scrubbing, and cleanings; had made the family clothes and been a woman of all work, passing from family to family, in an orbit determined by the exigencies of threshing, harvesting, illness, and child-bearing. At such times she sat at the family table and participated in the neighborhood gossip, in quite the manner of a visiting aunt or other female relative; but in spite of the democracy of rural life, there is and always has been a social difference between a hired woman and an invited guest.

When Jim, having absorbed everything which the Woodruff school could give him in the way of education, found his first job at "making a hand," Mrs. Irwin, at her son's urgent request, ceased going out to work for a while, until she could get back her strength. This she had never succeeded in doing, and for a dozen years or more had never entered a single one of the houses in which she had formerly served on occasions.

"I can't go, James," said she; "I can't possibly go."

"Oh, yes, you can! Why not?" asked Jim. "Why not? Let's forget habit once and be neighborly."

"You know I don't go anywhere," urged Mrs. Irwin.

"That's no reason," said her son.

"I haven't a thing to wear," Mrs. Irwin stated.

"Nothing to wear!"

I wonder if any ordinary person can understand the shock with which Jim Irwin heard these words from his mother's lips. He was approaching thirty, and the association of the ideas of Mother and costume was foreign to his mind. Other women had surfaces different from hers, to be sure, but his mother was not as other women. She was just Mother, always at work in the house or in the garden, always doing for him those inevitable things which made up her part in life, always clothed in the browns, grays, gray-blues, neutral stripes, and checks which were cheap and easily made. Like the sun, they were taken for granted.

caress was called for by the established customs between them, which sanctioned kisses at stated times.

"Don't think of that, Mother," said he, "for years and years yet."

XIV

Jim the Conjurer

THERE is no doubt that Jennie Woodruff was justified in thinking that they were a queer couple. They weren't like the Woodruffs at all. They were of a different pattern. To be sure, Jim's clothes were not specially noteworthy, being just shiny, and frayed at cuff and instep, and short of sleeve and leg, and ill-fitting and cheap. They betrayed poverty and the inability of a New York sweatshop to anticipate the prodigality of nature in the matter of length of leg and arm and multiplicity of bones and joints which she had lavished upon Jim Irwin. But the Woodruff table had often enjoyed Jim's presence, and the standards prevailing there as to clothes were only those of plain people who eat with their hired men, buy their clothes at a county-seat town, and live simply and sensibly on the fat of the land. Jim's queerness lay not so much in his clothes as in his personality.

On the other hand, Jennie could not help thinking that Mrs. Irwin's queerness was to be found almost solely in her clothes. The black alpaca looked undeniably respectable, especially when it was helped out by a curious old brooch of goldstone, bordered with flowers in blue and white and red and green—tiny blossoms of little stones which looked like the flowers which grow at the snow line on Pike's Peak. Jennie felt that it must be a cheap affair, but it was decorative, and she wondered where Mrs. Irwin got it. She guessed that it must have a story—a story in which the stooped, rusty, somber old lady looked like a character drawn to harmonize with the period just after the war. For the black alpaca dress looked more like a costume for a masquerade than a present-day garment, and Mrs. Irwin was so oppressed with doubt as to whether she was presentable, with knowledge that her dress didn't fit, and with the difficulty of behaving naturally—like a convict just discharged from prison after a ten-year term—that she took on a stiffness of deportment quite in keeping with the idea that she was a female Rip Van Winkle not yet quite awake.

But Jennie had the keenness to see that if Mrs. Irwin could have had an up-to-date costume she would have become a rather ordinary and not bad looking old lady. What Jennie failed to divine was that if Jim could have invested a hundred dollars in the services of tailors, haberdashers, barbers, and other specialists in personal appearance, and could for this hour or so have blotted out his record as her father's field hand, he would have seemed to her a distinguished-looking young man. Not handsome, of course, but the sort to make people look after—and follow him.

"Come to dinner," said Mrs. Woodruff, who had a hired girl but was under the yoke nevertheless when it came to turkey and the other fixings of a Christmas dinner. "It's good enough, what there is of it, and there's enough of it such as it is; but the dressing in the turkey would be better for a little more sage."

The bountiful meal piled mountain high for guest and hired help and family melted away in a manner to delight the hearts of Mrs. Woodruff and Jennie. The Colonel, in stiff-starched shirt, black tie, and frock coat, carved with much empressement; and Jim felt almost for the first time a sense of the value of manner.

"I had bigger turkeys," said Mrs. Woodruff to Mrs. Irwin, "but I thought it would be better to cook two turkey hens instead of one great, big gobbler with meat as tough as tripe and stuffed full of fat."

"One of the hens would 'a' been plenty," replied Mrs. Irwin. "How much did they weigh?"

"About fifteen pounds apiece," was the answer. "The gobbler would 'a' weighed thirty, I guess. He's pure Mammoth Bronze."

"I wish," said Jim, "that we could get a few breeding birds of the wild bronze turkeys from Mexico."

"Why?" asked the Colonel.

"They're the original blood of the domestic bronze turkeys," replied Jim, "and they're bigger and handsomer than the pure-bred bronzes even. They're a better bird than the Northern wild turkeys that our common birds were bred from."

"Where do you learn all these things, Jim?" asked Mrs. Woodruff. "I declare, I often tell Woodruff that it's as good as a lecture to have Jim Irwin at table. My intelligence has fallen since you quit working here, Jim."

There came into Jim's eye the gleam of the man devoted to a cause, and the dinner tended to develop into a lecture. Jennie saw a little more plainly where his queerness lay.

"There's an education in any meal if we would just use the things on the table as materials for study and follow their trails back to their starting points. This turkey takes us to the chaparral of Mexico—"

"What's chaparral?" asked [CONTINUED ON PAGE 17]



"I've been saving it for my last dress"

Clothes? They were in the Irwin family no more than things by which the rules of decency were complied with, and the cold of winter turned back—but as for their appearance! Jim had never given the thing a thought further than to wear out his Sunday best in the schoolroom, to wonder where the next snit of Sunday best was to come from, and to buy for his mother the cheap and common fabrics which she fashioned into the garments in which alone, it seemed to him, she would seem like Mother.

A boy who lives until he is nearly thirty in intimate companionship with Carlyle, Thoreau, Wordsworth, Shakespeare, Emerson, Professor Henry, Liberty H. Bailey, Cyril Hopkins, Dean Davenport, and the great obscurities of the experiment stations may be excused if his views regarding clothes are derived in a transcendent manner from Sartor Resartus and the agricultural college tests as to the relation between shelter and feeding.

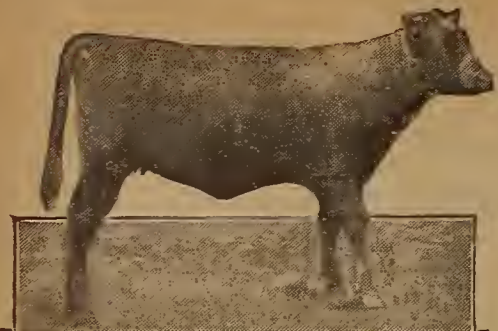
"Why, Mother," said he, "I think it would be pretty hard to explain to the Woodruffs that you stayed away because of clothes. They have seen you in the clothes you wear pretty often for the last thirty years."

Was a woman ever quite without a costume?

Mrs. Irwin gazed at vacancy for a while, and went to the old bureau. From the bottom drawer she took an old, old black alpaca dress—a dress which Jim had never seen. She spread it out on her bed in the alcove off the combined kitchen, parlor, and dining-room in which they lived, and smoothed out the wrinkles. It was almost whole, save for the places where her body, once so much fuller than now, had drawn the threads apart—under the arms and at some of the seams—and she handled it as one deals with something very precious.

"I never thought I'd wear it again," said she, "but once. I've been saving it for my last dress. But if it's going to give you a bit of pleasure I guess it won't hurt to wear it once for the benefit of the living."

Jim kissed his mother—a rare thing, save as the



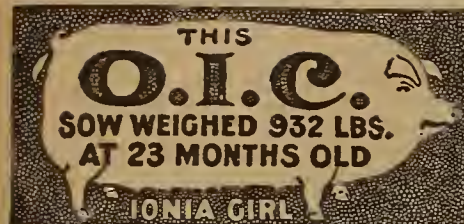
Raised Without Milk!

Her name is "Daisy" and her owner, W. A. Riddle, of Chapin, Iowa, raised her on Blatchford's Calf Meal, which costs less than half as much as milk.

Blatchford's Calf Meal

An absolute preventive of scouring. Calves raised "The Blatchford Way" are heavier, bigger-boned and healthier. Known as the complete milk substitute since the year 1890. Sold by your dealer or direct from the maker.

See Actual Figures—based on results—that show you how to increase your calf profits. Write today. Blatchford Calf Meal Factory, Dept. 4031, Waukegan, Illinois



I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months' old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, Masonic Bldg., Portland, Mich.

9 1/2 CORDS IN 10 HOURS



BY ONE MAN. Proven by sworn witnesses. It's KING OF THE WOODS. SAVES MONEY and BACKACHE. **SPRING PRESSURE and GUIDE**, on end of saw, a **BIG 1915 IMPROVEMENT**. Send for free catalog Q12 showing LATEST IMPROVEMENTS. First order gets agency. Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.



Live Stock and Dairy

Two Shorthorn Cows With Real Records

By John Brown

MIDWAY DUCHESS, fresh April 4, 1914, till November 1, 1914, gave 5,822 pounds of milk, average test of about 4.5 per cent, or 301.2 pounds 85 per cent butter.

May, fresh April 28, 1914, till November 1st, gave 5,651 pounds of milk, average test about 4 per cent, or 254.94 pounds 85 per cent butter. (This from three-quarters only.)

These are dual-purpose cattle, I claim.

We made our own butter and received an average price of 28 cents a pound, or \$155.71 from the two cows.

They had just common farm care, no pampering. From May 10th until November they had pasture only, and a part of the time it was poor owing to dry weather.

As to the beef end, I have a heifer out of May, two and a half years old (fresh in a few days) that will weigh 1,200 pounds or better, and good all over. Was offered \$80 for her in July by a butcher; this off of grass and no grain. Last year a calf out of Midway Duchess weighed 800 pounds at twelve months, and not fat either. The other calves have sold when from three to six months old, so don't know what they did at maturity. My calves are all raised on skim milk and grain, and are not pampered.

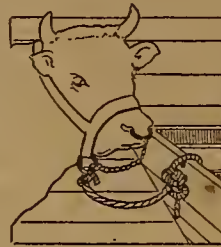
Would strictly dairy cattle do any

better than these cows have done, care considered? or paid any more profit for feed consumed? For my part I doubt it, under farm conditions. I have all registered stock now. I can't give records of all my cows, as I got the others when they had been giving milk six months or more.

Safe Tie for the Bull

By John Y. Beaty

A FEW days ago a dairyman who lives near my home purchased a pure-bred Jersey bull that had been mistreated and had become rather vicious. He saw that the bull was dangerous, and knew enough to be on the safe side and not trust the animal too far. The bull's nose was sore, for he had pulled one ring out of it. For that reason it would have been cruel to tie the bull by his nose only. A strong halter was put onto his head, and the tie rope was run directly to that. Then from the ring of the halter to the ring in the bull's nose, a slack chain was run. This was so adjusted that with ordinary motions there was no pulling on the nose at all. But when the bull got atry and tried to move sideways the chain tightened and he was at once under control. The picture shows the arrangement of the rope and chain. When properly fitted the chain does not interfere with the bull in his eating.



The Veterinary Profession

By David Buffum

A YOUNG man writes me: "I desire to know whether veterinary surgery is a desirable profession for a young man to enter to-day." This is a very important question which is also most difficult to answer without knowing the young man personally.

There are at present a comparatively small number of really expert veterinary physicians. The majority of those who attempt it fall into two classes: First, ignorant fakers who do a thousand times more harm than good; and, second, men educated for the profession who are still so unfamiliar with animals in a general way that they constantly fail in their diagnoses—and, of course, if the diagnosis is wrong the treatment is necessarily so. In my opinion a young man should be thoroughly familiar with animals before he takes up the study of veterinary practice at all; and he should also be, by nature, fond of them. Familiarity, sympathy, and the ability to understand the unspoken language of dumb creatures are all necessary to the correct diagnosis of a case.

Without knowing a young man's previous experience or natural qualifications, I cannot possibly judge whether his chances of becoming a successful veterinarian are good or otherwise. To become a really good veterinary physician and surgeon is to enter upon a high mission; to become a poor one is to face the probability of doing infinitely more harm than good. So the only honest and, therefore, the only advisable thing for a young man to do is to examine himself fairly and impartially and then act according to his own judgment.

The pecuniary returns of the profession do not average very high, but the right kind of a man can make a comfortable living out of it, if rightly situated. In a country locality it is usually necessary to practice it in connection with farming or some other business, at least at the start. The best location is a medium-sized city.

A New Milk Champion

WHAT does the statement mean to you that Tillie Alcartra, a Holstein cow owned at Woodland, California, has given over 30,000 pounds of milk in a year?

This is her record, no matter how it impresses you.

It is a most astounding achievement in milk production. It means that this great milk-producing machine called Tillie Alcartra gave a 15-quart pail of milk every milking, morning, noon, and night, for eleven months of the year—for such a cow would have to be milked at least three times a day. Imagine, ye who think it is a wonderful thing to have a cow give two pails of milk a day when fresh, what this animal did when at the flush of her great lactation!

This sort of cow is like the horse which can trot a mile in two minutes—not a creature which every man may hope to possess, but a mark to be set as the possible of attainment. On the average farm Tillie would die of ill usage. She could not safely be chased by dogs or worried by swearing men and stone-throwing boys. It would not do to take the milk stool to her as a part of her education, nor to leave her lowing at

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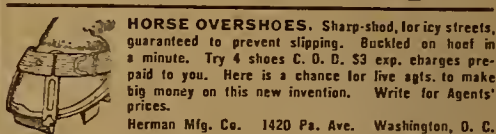
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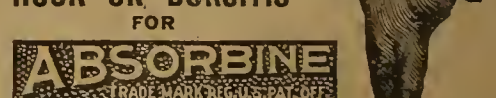
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Canadian Wheat to Feed the World

The war's fearful devastation of European crops has caused an unusual demand for grain from the American Continent. The people of the world must be fed and there is an unusual demand for Canadian wheat. Canada's invitation to every industrious American is therefore especially attractive. She wants farmers to make money and happy, prosperous homes for themselves while helping her to raise immense wheat crops.

You can get a Homestead of 160 acres FREE and Other lands can be bought at remarkably low prices. Think of the money you can make with wheat at its present high prices, where for some time it is liable to continue. During many years Canadian wheat fields have averaged 20 bushels to the acre—many yields as high as 45 bushels to the acre. Wonderful crops also of Oats, Barley and Flax.

Mixed farming is fully as profitable an industry as grain raising. The excellent grasses full of nutrition are the only food required either for beef or dairy purposes. Good schools, markets convenient, climate excellent.

Military service is not compulsory in Canada, but there is an extra demand for farm labor to replace the many young men who have volunteered for the war.

The Government this year is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or

M. V. McINNES, Detroit, Mich.
178 Jefferson Ave.,
W. S. NETHERY, Columbus, O.
Interurban Bldg.,
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ABSOLUTELY ON APPROVAL
Gears thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address: AMERICAN SEPARATOR CO. BOX 3058, Bainbridge, N. Y.



the bars until nine, either morning or night, waiting to be milked. Under such conditions Tillie's great udder would be ruined by pressure of milk or the bruising and tearing of running and jumping about to avoid punishment.

She must be a wonderfully vigorous animal, but her vigor is directed to milk production, and not argument with a harsh owner or a struggle with ill usage of any sort. The man who desires the best in dairy cows must educate himself and his household up to her standard.

Wolf in the Tail and at the Door

By Clifford E. Davis

FARM papers can jeer at the idea of "wolf in the tail" in cows and point out the fallacy of the notion. But some farmers, both old and young, stubbornly hold to the notion, and continue cruelly to split the tail of the animal at some point and put in salt and pepper to supply new bone.

A year ago I bought a young Jersey cow so run down in flesh and out of condition that I could hardly get her home. She had "wolf in the tail," and there were two places where there was apparently no bone, and I was told I must "split and salt." I did use the salt, but not in the tail. I gave her all the salt she wanted to eat. I fed her bran mashies, sliced carrots, potatoes, and good corn fodder. She was given good pasture and care, and she thrived so wonderfully that now she has no indication of "wolf in the tail." The bone is firm and solid, and I didn't split either.

A moment's search after the cause will teach any man to apply common-sense methods of curing any evil, be it wolf in the tail or wolf at the door. Both are bad, and both due to mismanagement.

A Good Chance for Cheese

"SOME consumers," says the editor of the "Butter, Cheese, and Egg Journal," a trustworthy produce publication, "accept a cheese because it is imported, though it may not be true to type, or it may lack the characteristic flavor. Much of the imported kind is consumed simply because it is imported, whereas a good well-flavored American cheese would be relished more if the honest expression of the consumer was obtained."

Stocks of imported cheeses are now about cleaned up, and American-made cheese will get more attention than usual. The average European eats cheese at nearly every meal, and altogether consumes about eight times as much as the average American. Even after the war is over we need expect very little foreign cheese to be sent us for a while, because there will be so few cattle and goats left. Now is a good time to learn to make cheese; a good demand is certain.

The Virginia Dog Law

THE following is the text of chapter 164 of the Virginia Code, and is entitled, "An Act to Prohibit the Running at Large of Dogs, and to Provide a Penalty for the Violation Thereof."

Be it enacted by the General Assembly of Virginia, That it shall be the duty of every person owning or having in charge any dog or dogs, to at all times confine such dog or dogs to the limits of his own premises or the premises on which such dog or dogs is, or are, regularly kept.

Provided, that nothing in this act shall be construed to prevent the owner of any dog or dogs, or other person or persons having such dog or dogs in his or their charge, from allowing such dog or dogs to accompany such owner or other person or persons elsewhere than on the premises on which such dog or dogs is, or are, regularly kept.

Any person violating this act shall be deemed guilty of a misdemeanor, and shall be fined not less than two nor more than fifty dollars.

This act shall not apply to the running at large of any dog or dogs within the corporate limits of any city or town in this State that require a license tag to be kept on dogs. But this act shall not apply in any county in this State until the same has been adopted by the board of supervisors of such county.

We shall be glad to hear from our readers as to what they think of it—especially from Virginia readers.

Curing the Cribbing Habit

By Dr. A. S. Alexander

AN EIGHT-MONTHS-OLD colt belonging to a FARM AND FIRESIDE reader is a bad cribber. The colt has been given the use of a box stall in which it runs loose, is fat and in good condition. Its feed has been mostly oats and clover hay.

Cribbing is an incurable vice when fully established. It is learned during idleness, or from a cribbing horse, or is induced by irritation of teething. The latter is not a cause in so young a colt.

Make the colt run out every day. Buckle a strap, fairly tight, around the neck just back of the throatlatch. This tends to prevent wind-sucking. Remove from the box stall everything upon which the colt can set its teeth or rest its chin to practice the habit.

Another Good Way

If these measures fail, take a piece of clothesline, or similar small cotton rope. Tie one end to the ring of the halter. Pass the free end under the upper lip, over the gums of the upper incisor teeth; draw fairly tight and tie to the other ring of the halter. This will often prevent cribbing and wind-sucking. Some people saw between the incisor teeth, or spread them apart slightly with wedges, to cause soreness of the mouth. This is cruel practice and should not be countenanced.

Farm Wit and Wisdom

Condensed and Modified from Various Sources

TO THE successful rabbit-repellent wash for trees which has been described in these columns, add this, vouched for by the U. S. D. A.: Unslaked lime, 20 pounds; flowers of sulphur, 15 pounds; water, 50 gallons. Mix well, and apply with a brush. All the ingredients are rather more commonly found than some of those in our favorite recipe.

Is it a new disease which will scourge the duck farms? The Los Angeles "Times" states that the wild ducks of Tulare Lake are dying by hundreds of some dysenteric disease.

THERE is no specific remedy for the foot-and-mouth disease. Since the germ has never been isolated, it has never been possible as yet to find any serum that would act either as a cure or preventive, and the public may be quite certain that anyone who says that he is an employee of the Department of Agriculture, and at the same time attempts to sell or even recommend anything of the sort, is simply an impostor.

THE Nebraska Pig Club contest seems to have adopted a sensible way of giving awards. Prizes will be awarded in a contest in which the hundred points marking perfection will be made up as follows: Best hog with respect to the purpose it is to serve, 40 points; greatest daily gain per hog, 15 points; cheapest cost of production, 25 points; best kept records, 20 points. If there is any fault in this it would seem to be too much importance given to records, and too little to cheap production because of too much attention to the best hog. Isn't the cheapest pork always found in the best hog? In other words, isn't the cheapest the best by reason of the fact that it is the cheapest?

A HUGE pumpkin vine growing in a pile of coal ashes reminds one of the fact that all the experts say that these ashes have no fertilizing value, and that a great many people report good results from their use. Let's hear from such of our readers as have actual experience in this matter, be their votes yea or nay.

A FARM without a dipping tank is in bad condition for bringing in new blood for the flocks and herds. No one can tell what disease germs may stick to the animal in shipment. Dipping kills the disease germs you know of, and lots of pests of which you have no suspicion. It is like the spraying of trees in that respect.

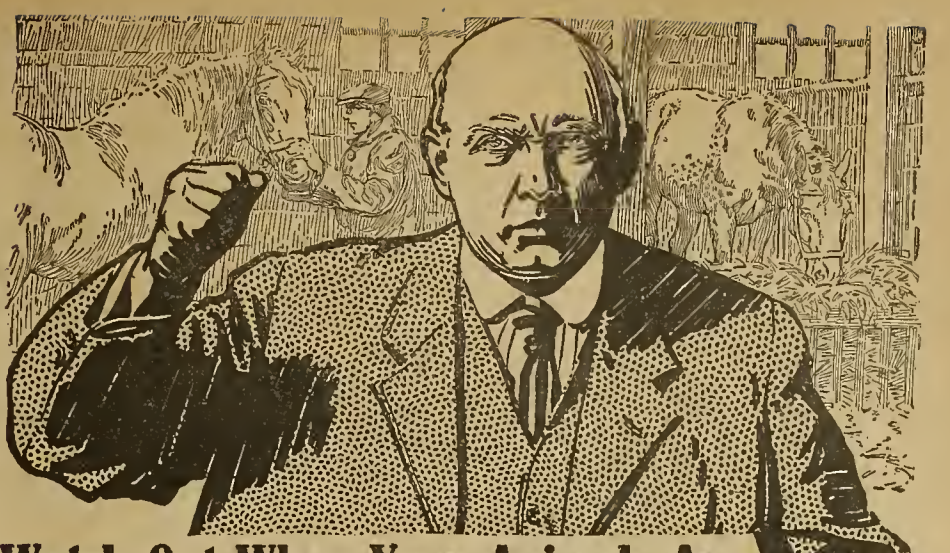
SILAGE is no better than the crop of which it is made. Don't try to fatten stock on it. Study its value, and feed grain to balance it up.

An Error

WE HAVE the following letter from Mr. G. R. Ingalls of Wisconsin, which explains itself:

I am in receipt of a copy of FARM AND FIRESIDE under date of November 21, 1914. My attention was called to an article on page 23 under my name, which states that I am authority for the statement that the best cows in many Wisconsin herds are returning a profit of \$500 each per year. I am sure I do not know from what source you got this statement, for I am quite sure that it is exaggerated, and do not remember of ever having made such a statement either orally or in writing. I take this opportunity to call this matter to your attention because I do not wish to be misquoted.

FARM AND FIRESIDE regrets that this error should have crept into its columns.



Watch Out When Your Animals Are On Dry Feed

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

Right now is the most trying season of the whole year for farm stock; they have been taken off pasture, put on dry feed and thereby deprived of the natural laxatives so liberally supplied in grass; confined in stables with consequent loss of exercise and pure air.

In my lifetime experience as a doctor of veterinary science, many a time have I been called in to treat cases of chronic constipation, stocking of the legs, dropsical swellings, skin diseases; but the most common and dreaded ailment of all—especially among hogs—is worms—worms, and all these troubles are most prevalent during the stall-feeding period—during winter and spring, when stock are off pasture. I want every farmer and stock raiser—I want you—to feed

DR. HESS STOCK TONIC

A Conditioner and Worm Expeller

feed it this winter at my risk—on my guarantee below. This scientific preparation contains tonics to tone up the animal's system and enrich the blood, laxatives to regulate the bowels and ingredients for expelling worms.

Right now is the time to feed Dr. Hess Stock Tonic, because it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that digests its dinner that pulls on the bit, the hog that is well and worm-free that gets to be a 200-pounder in six months.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that I have authorized my nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

Dr. Hess Stock Tonic is never sold by peddlers—only reliable dealers; I save you peddler's salary and expenses, as these prices prove: 25-lb. pail \$1.60; 100-lb. sack \$5.00; smaller packages as low as 50c. Except in Canada, the far West and the South.

Send for my book that tells all about Dr. Hess Stock Tonic—it's free.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

This is the time when egg prices are high and your hens ought to be making up for the small egg crop during moulting. Pan-a-ce-a tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 30 fowl per day. 1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks or, if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c. Except in Canada and the far West. I guarantee it.

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for thousands of farmers. And I've got the cost down so low that I can give you a perfect, economical milker at a price that will astonish you. You can milk in the most sanitary way and save time, money and work with a



R. L. Hinman Sit right down and write today for my Free Illustrated Book. I want you to know all about what I have spent years in developing for your benefit. Simply say in a letter or on a postal: "Send your FREE BOOK telling how to make more money with cows."

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R. L. Hinman, HINMAN MILKING MACHINE COMPANY ONEIDA, N. Y. 68-78 Elizabeth Street



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This Offer For January Only

Corn Grader Given

My Corn Grader that grades Seed Corn perfectly for your drop planter, now Given with my Chatham Machine. Formerly it sold for \$5.00 extra.

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My new Wild Oat Separator will be given in place of the Corn Grader Apparatus. GIVEN, remember, with any Chatham. New Gang takes out every Wild Oat—from wheat, barley and flax—gets them—EVERYONE.

I announce for the next 30 days absolutely the lowest prices and most liberal terms ever known. This Offer Extraordinary is made possible only through tremendously increased sales and consequent reduction in factory costs.

Reduced Prices

The total cost of my Chatham Grain Grader and Cleaner with all equipment and attachments is almost \$10.00 less than a year ago. That's an astounding saving on a machine of this kind.

Liberal Credit

I now sell for cash or on long time credit, requiring no security except your personal promise. You can wait till next October to pay, if you wish.

Free Trial

I now ship on wide open free trial, no matter where you live—no money down—no deposit—no notes or promises to pay until you have had a full month's home test and have decided you want to keep the machine.

Write

This offer is so special that I reserve the right to withdraw it in 30 days. If you want to take advantage of it ACT AT ONCE.

Send Postal today and get, by return mail, my Special 30 Day Proposition and Free Book, THE CAMPBELL SYSTEM OF BREEDING BIG CROPS.

The Manson Campbell Company Dept. 102 Detroit, Michigan Kansas City, Missouri Minneapolis, Minnesota

- Chatham Grain Grader and Cleaner, with 1915 equipment, handles practically every Grain and Grass Seed grown on American Farms.
 - Capacity: Up to 60 bu. per hour. Hand or Power Drive. Among the more important things it does are:
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 - CORN** Blasts cobs, chaff, silks. Removes broken grains, shoe pegs, tips, butts and uneven kernels; grades flat, even grains for 98% perfect drop.
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 - ALFALFA** Removes dodder, foxtail; blasts out shrubs, frozen or droughted seed.
- Backed by my Free Service Dept. (extra screens and sieves free) I guarantee you can do all these things.

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Take any other galvanized steel, bend it back and forth several times, hammer it down each time. You will be able to flake off great scales of galvanizing with your finger nail. Apply this test to a piece of Edwards Tightcote Galvanized Steel Roofing—you'll find no flaking.

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No matter what kind of a building you have in mind there is a style of EDWARDS Tightcote Galvanized Roofing exactly suited to your need. Lightning-proof, Fire-proof, Rust-proof, Rot-proof. Lasts as long as Building Stands.

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Farm Notes

Camphorated Engine Fuels

MOST gas-engine users are familiar with the claim that small amounts of camphor added to gasoline will increase its power and efficiency. To test such a claim by actual experiment would seem an easy thing to do. This has been done, but the results as reported do not agree. One investigator says:

About one ounce of gum camphor is dissolved or deposited in five gallons of gasoline. Then the engine is started and the result compared with the non-camphorated gasoline. Those who are using the former are convinced that the efficiency and economy of the camphor-gasoline mixture far surpasses the other.

M. Boje of Marseilles, France, says he has increased the efficiency and running capacity of his motor boat 15 per cent per gallon. To disarm skepticism he quotes the claim of Latham, Blierot, and Curtis in support of his camphor idea. All of these men used it, and the latter two, still living, are recommending its general adoption for heavier-than-air machines.

To the foregoing claims Mr. James A. King, an Iowa traction engineer, replies:

The "Motor Age" reports that simple, practical experiments performed with a commercial automobile under normal usage conditions showed no benefits in the form of increased mileage per gallon of fuel arising from the use of camphor in the fuel.

FARM AND FIRESIDE is inclined to believe that the alleged benefits from the use of camphor have been rather highly colored, and that hopes in that line will be shattered. The best really economical mixtures are those of kerosene and gasoline. One gallon of kerosene to four of gasoline makes a good combination for gasoline engines, and some engineers have successfully used one gallon of kerosene to two of gasoline at a saving of expense and with an increase of power.

This Will Please the Bees

MANY farm beekeepers and suburbanites keep one or more hives of bees for their own table honey rather than for the profit they intend to make. To these little beekeepers the loss of a colony of bees by winter-killing means more than to the professional beekeeper who figures the loss of a colony when in winter quarters only an incident in a successful career.

But the little beekeeper either considers it too much trouble to protect the bees, or he thinks they will get along without any protection. He is too "wise" to listen to good advice from people who know. If it were not for this class of



Boxes make good homes

beekeepers and the beginners, what would the dealers in bees and queens do? There would be no bees dying through the winter to be replaced. You say that not all the bees that die are replaced. True, but in ninety cases out of a hundred, "Once a beekeeper always a beekeeper."

Professional beekeepers have thousands of post cards coming in with the following, or words to the same effect, upon them:

Suburbanite, Fall, 1914.
MR. A. PROFESSIONAL.
DEAR SIR: How shall I care for my bees to protect them from freezing? Expectantly awaiting an answer, I remain,
In your debt, NOVICE.

The professional beekeeper sits down and writes Novice the following kind words:
Beeville, Winter, 1914.

MR. NOVICE.
DEAR SIR: In answer to your card of recent date would say that bees do not freeze but remain dormant through the winter. The reason they are protected in

well-regulated apiaries through the winter is not so much on account of the cold as on account of the dampness. Good dry cold does not hurt them a particle. There are as many different ways of protecting them as there are makes of automobiles, but I shall cite you only a few of them. The principal thing to guard against is the getting of water or slush into the entrance of the hive and freezing, thereby shutting off the air inside and suffocating the bees.

Many people wrap tarred paper about the hives to keep them dry, but the main objection to this is if the sun happens to come out on a cold day the paper is apt to warm the interior of the hive and the bees fly out when they should not, thereby becoming chilled and not being able to return to the hive. This sometimes so depletes a hive that all surplus for the year is lost.

A good protection, and one that I would recommend, is the double-walled hive. The only drawback to this plan that I know of is the expense. Double-walled hives cost a little more than single-walled.

Another way (and one that I would recommend where one wants to winter the bees as cheaply as possible) is to get some dry-goods boxes (these can generally be procured at any store for the asking), knock off the top and bottom and, if they need cutting down to fit over the hive, cut them down, leaving about six inches between the box and the hive for packing material. Now nail cleats across your cover, making it all one piece, and cover with tin, old roofing, or any water-proof material. Before packing the bees in for winter put about three or four thicknesses of burlap or old cloth of some kind over the top of the brood frames to absorb the moisture. If packing in leaves or other such material, I would advise leaving off the wooden super-cover and also the outer cover, giving the moisture a good chance to escape. If this is not done your combs may mold and the bees get the dysentery.

I consider the double-walled hive the best; but if you cannot afford that, use the dry-goods box plan, and I can assure you of success if your bees have plenty of stores. Your friend when in need,
A. PROFESSIONAL.

A Good Foot Powder

By H. L. Harris

IN YOUR October 24th issue Harry N. Holmes says:

Another affliction appears in the form of excessively sweaty feet which are rubbed raw by heavy shoes. Frequent washing is good of course, but an absolutely satisfactory treatment is the application of powdered borax to the feet and socks. No other foot powder equals this for the purpose.

In reply to the above quotation I beg to say that borax is not a good foot powder: boric acid, however, is, and it has been used in all of the armies to keep the soldiers' feet in good condition. The powder is dusted in the socks and shoes.

Where the feet have been rubbed raw, washing same with a borax solution is beneficial, and a salve made of 50 per cent vaseline and 50 per cent powdered boric acid mixed thoroughly together is a very good salve for such cases.

I Like It Here

By C. H. Wolworth

GEORGE B. HILL'S article on Florida is an honest statement of the case. It gives the State neither the best nor the worst of it. While it is quite complete for a short story, it strangely omits Florida's greatest asset, viz., her climate. This is simply delightful, as is attested not only by thousands, but by hundreds of thousands, coming here every winter to enjoy it.

A comparatively narrow strip of land projecting down between the big Gulf and the Atlantic, which absorbs the heat in the summer and gives it off in the winter, Florida has a climate which is very equable. This is made still more so by the fact that the days are much shorter in the summer and longer in the winter. So, while the winters are very mild, there seldom being any frost, the summers are not as hot as in the North, as is shown by the U. S. Weather Bureau reports. This is my own experience as well.

A year ago I came here from Nebraska, where I had lived for twenty-five years and had seen the remarkable development of the great Middle West and the Far West. I am profoundly impressed with the magnitude of the undeveloped resources here. It seems to me that not one acre in a thousand is under cultivation.

Wild lands can be had near the railroads here in Orange County at very reasonable prices (\$10 to \$40 per acre). They are good citrus-fruit lands, and this county ships more oranges than any other county in the State.

Frost we sometimes have, but it is no more dangerous to citrus fruits here than it is to deciduous fruits in any good fruit country. There is always some frost-peril in every fruit country that I have ever known.

While Northern people are coming here in great numbers, the development of Florida has only just begun, and those coming now will get in pretty nearly "on the ground floor."



Rat Poison From Matches

FIVE years ago we were overrun with rats, but after one trial of this remedy our troubles ceased. I took fresh corn-meal (one-half pint to begin with, and increased the amount as needed to give them all they wanted), and mixed to a stiff dough with new milk. I placed this in a clean dish and set it in an empty bin in the granary.

This was done every night for a week, and by that time the rats had a ravenous appetite for the dough. After they knew where to get their supper I took a large handful of sulphur matches and soaked them for two hours in enough water to make the evening meal. I used this water in place of the milk, and this last supper did the work. It never has had to be repeated.
C. W. KING.

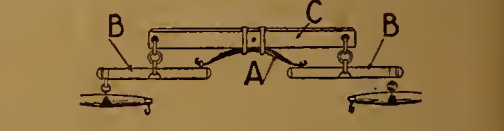
A Plumb-Bob Level

SOME years ago I needed a level, but could not secure one within ten miles. The one I constructed as a makeshift answered the purpose so well that I finished the whole job by it.

Take a piece of board having a straight edge. To this fasten two other pieces, forming a triangle. Now with a square find the point on the base from which a line leaving it at right angles exactly strikes the point where the side pieces meet. From this point suspend a plumb bob and your level is complete. I used an old peg top as a plumb bob, but almost any little weight will do.
DAVID BUFFUM.

Anti-Shock Double-Tree

THE doubletree (C) is very easy on horses since it reduces jerking. It is 3 feet long, with a clevis at each end.



The spring is bolted on the center with two bolts. Each end of the spring is bolted to one end of the arm (B). The singletrees are attached to the opposite end of these pieces in the usual manner. This device adds also to the comfort of the driver.
WILLIAM L. SCHICK.

Steer Leads Like a Lamb

A WILD steer or stubborn cow can be broken to lead in a few minutes. Here is the method: Cut a long heavy pole, and tie one end under the hind axle of the wagon to which a team is hitched.

To the other end tie the steer by means of a rope or halter. The pole should be heavy enough at the end that drags on the ground to make it extremely difficult for the steer to lift it by pulling back. The result is that when the team starts, the pole pulls the steer's head downward, and he is unable to brace himself as when snubbed to a wagon.

Next he will charge forward, but the pole jockeys him clear of the wagon. A little of this and the wild-eyed steer will lead like a lamb.
L. E. DUBOIS.

Ax-Handle Economy

IF YOU want your ax handle to last as long as four handles usually last, wrap it with baling wire (or any light strong wire) as shown in sketch. The wire instead of the wood will get the wear, and the wire will strengthen the handle at the point where most of the strain comes. Wood-splitting is especially hard on ax handles.
R. A. GALLIHER.

Uses for Pine Pitch

FIRST, we use it for cuts or sores of any kind, in place of salve. Heat and apply as hot as possible without burning the skin.

Second, use on a pail that leaks. Heat and pour on the leaky spot, let it cool and the pail is ready to use.

Third, for a burst water pipe, wind with cloth and pour on some pine pitch. This will not allow pipe to leak if pitch is put on thick and smooth.
MRS. W. E. EVERETT.

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The Farmers' Lobby

Farm Life Stands Naturally for Constructive Effort

By Judson C. Welliver

A NEW fuel for motor cars was tried out not long ago on the motor speedway at Indianapolis. It is said to be a compound of water, naphtha, and some ingredients whose identity is kept secret but which are very cheap—cheap enough to make the manufacture of the fuel possible at 2 cents the gallon. It is explained that the basic idea is to disintegrate water without great heat—that is, to turn it into vapor without using a boiler. Thus vaporized, water becomes the chief constituent of the new fuel.

Produced at 2 cents the gallon, it is declared this fuel can be sold at a profit at 6 cents. If, as reported, it is even more efficient for internal combustion engines than gasoline, one must marvel to consider the revolution in power instrumentalities that it may work.

Of course automobiles would be commoner and cheaper than ever. But that is only a beginning. Traction engines could be expected to displace a very large proportion of horses on country roads and farms. Plowing by motor power is common enough in the country of league-long furrows and easy topography. It would be economical in the country of smaller fields and steeper hills. A myriad of farm operations would be handled with engine power. Nobody would need be without an electric plant. Railroad locomotives would presently be rebuilt to use the new power. Great power plants in the cities, running railroad and lighting systems, would be accommodated to the economies of the new fuel. It is doubtful whether there would be profit in harnessing water powers to compete. Turning this cheap power into electricity, we should very likely be heating our houses with electricity, cooking with it, and forgetting the uses of coal. In turn, the coal-mining industry would shrink in importance, while the people released from employment would be engaged in building machinery to use the new power. In short, there would be another industrial reorganization comparable to that which followed the introduction of steam power.

AND talking about industrial reorganizations, the Panama Canal has been in operation about four months, and already it is doing some mighty interesting things to business and commerce.

It is going to do more of them. Among other things, it is going to make over the agricultural trade routes and development channels of the country to an extent that is just beginning to be suspected. For instance:

The other day the president of the Southern Pacific road said that during the first three months of its operation the canal had shown it was going to take a great deal of tonnage away from the railroads. He figured thus:

In August, September, and October, 1913, when there was no canal for traffic, California sent 120,000 tons of freight to the Atlantic Coast; 67,000 by rail, 53,000 by sea.

Same three months in 1914, the canal being opened, California sent 67,000 tons by rail and 103,000 by water. The aggregate business, that is, increased over 40 per cent, and the railroads just held their own; the water carriers got the entire increase.

But our railroad authority is fearful whether in future the railroads can do so well. The canal carriers are bidding now for fruits, vegetables, and other perishables, offering as quick time as the railroads, refrigerator ships, etc. Business by the canal route is in its infancy. No telling to what it may grow. Without question, the water carriers can make much lower rates than the railroads.

BUT it isn't necessarily such a calamity for the railroads. Here's another side to it.

A few years ago hogs from South Dakota found their market at Sioux City, Chicago, Omaha, and South Saint Paul.

This year, stockmen from Sioux City tell me, a large share of hogs from South Dakota are being shipped, not eastward to these markets, but west to North Pacific Coast markets. Why?

Because the coast needs them. It doesn't raise meat enough and reaches east for supplies. The railroads get to haul them.

Likewise I am told that wheat from Montana and other Northwest regions is this year moving to the coast in a volume never before dreamed of. Why?

Because the canal is open, and it is possible to haul grain from a great distance inland to the Pacific terminals, and there put it on ships for Eastern and European ports cheaper than it can be taken east by rail.

This all adds to the west-bound traffic of the railroads, which was not discussed in the statement of the California railroad man. As time sees more development of the canal's possibilities the Pacific ports will draw more and more from inland; they will reach farther and farther east; and the railroads will profit.

The Great West will develop under this stimulus; the Middle West will find both Atlantic and Pacific and also Gulf ports bidding for its products. Every trainload that goes west, that formerly went east, will be that much subtracted from the flood of agricultural products that in the past has swept eastward and submerged the agriculture of the Eastern States. Eastern

cities and industrial districts will need new supplies. They will have to get them nearer home; and getting them nearer home means that they must raise them. That means a huge impetus to the agricultural revival in the East and Southeast.

SPEAKING of the railroads, they have plenty of troubles without inventing or imagining more.

If their employees threaten to strike for more wages Government steps in, mediates, and awards some part of the increase asked. Between labor organizations and government intervention the railroads have next to nothing to say about the wage bills they will pay. Their pay rolls are made up for them by outside authority.

At the other end their rates are fixed for them by government commissions. They have little to say!

weeks or months can do business on the ninety-day basis. The farmer, who requires a round year from the time he puts winter wheat into the ground until he can sell it, needs credit for corresponding periods.

These features of agricultural credit are getting to be understood. A recent conference of agricultural financial experts in Washington considered the subject, and one proposal was the census and survey of agriculture's problem. Now it develops that there will be bitter hostility to a Congressional provision for it, on the ground of economy. It's no time to spend government money recklessly, the economists say.

Maybe not. But some of these same economists are organizing to fight for the river-and-harbor pork-barrel bill, and the public-building-bill pork hogshead. They think those things necessary—can't be delayed.

Perhaps they're right, but the people who want better agriculture in the country and lower living costs in the city know that reforms in methods of financing the country are absolutely necessary. Constructive work demands them. Other countries have established such reforms. This country must before long.



Why draw away his attention with anything so useful? He might drop his balance pole

There is left for the railroad managers the problem of squeaking out enough revenue from rates fixed by somebody else to meet pay rolls also fixed by somebody else, and have left enough to pay returns on capital that will not invest in them unless it gets its rate.

Everything is decided for the railroads from the outside, except the absolute necessity that they shall pay. More and more, railroad men, both operators and financiers, talk about the possibility that unless there is a change government ownership must come. It is astonishing how much of it is heard here among public men too. Most of them regret the possibility, but admit it.

A GREAT agricultural census and survey of the country has been proposed as a means to getting accurate facts, and plenty of them, on which to base discussion of proposals for a system of rural credit. About everybody has got far enough along to recognize that the farm needs a different credit system from other businesses.

The difference between the credit a farmer needs and the credit another business man needs was recently illustrated to me. A young stockman in a Western State, owning a good farm, bought a bunch of cows and a registered bull. He borrowed most of the money to make the deal, for three months, with a general assurance that his note would be renewed.

At the end of three months the bank called the note. His summer pasture had gone into the stock. The cows had been bred. They were in no condition to be sold. Forced sale would have left him worse off than when he bought them. The bank had got worried about the European war and domestic financial conditions, and insisted on its money. Given till next May, that man would have been able to settle at a fine profit. Forced to close his deal in ninety days he stood to lose heavily.

That is no way to finance farm business. The merchant who turns over his stock of goods in a few

LORD KITCHENER says the war will last not less than three years. If that be true, there will be left at the end not so very much more than the bare land, the remnant of human resources, and the debts to be paid. Of all these the human capital will be vastly the greatest, and it will be the first time in many centuries when the human capital will have commanded so high an appreciation.

While the war is going on, immigration to this country will be very small. After it ends, immigration, according to the commonest theory, will be greater than ever.

Will it? I am not so certain, and I find a number of students of the subject who agree with me. There will be a pitifully large population of widows and orphans in Europe. Will the men desert them? Will not the Governments, finding that a great share of the most efficient young manhood has already been sacrificed, adopt rigorous measures to discourage emigration?

Ireland lost half its population through the famine of the middle of last century. The result was that the British Government adopted measures to stop the hegira. Among these measures were the land laws that made it possible for the Irish peasantry to buy their lands, whether landlords wanted to sell or not.

Under these laws Ireland is fast becoming a land of small resident proprietors, while this country is losing its Irish immigrants.

Europe has viewed with concern for a long time the loss of its young men, drawn away by the superior opportunities of new lands. Every country has sought means to stop the emigration. Heretofore the youth of the Continent was needed for fighting. A man was a potential fighting unit if the Great War should come. It has come, and the young men are being slaughtered.

When the Great War is over, the men who remain will be needed, more than ever, to rebuild. It will not do to let them

hurry away to new and more promising lands. Government will cast about to find means to keep them. They will not long miss the real solution: letting every man own his little piece of the soil. That is what rehabilitated Ireland and brought prosperity back to it. It is what will at last save Europe from depopulation after the Great War.

MOST of the people who live in the world now have little to lose by a war, except their lives; and only a very few, comparatively speaking, could lose their lives in any war. The great mass who have lived just above the borderline of subsistence would continue to subsist. The world's machinery of production and distribution would be reorganized by a long war at present tension. Old industries would be discarded, new ones introduced. Old wastes would be ended, new economies inaugurated. There would be more utilitarianism everywhere; less frivolity and luxury; more purpose, earnestness, sincere thought.

This world, driven back to first principles of the struggle for existence, stripped of all artificialities, but left with the stores of knowledge and understanding that it has inherited from the ages, would be reduced to the common denominator of simple humanity. How different our institutions would look then! How much easier it would be to understand and accept the teaching of the Sermon on the Mount! How much easier would be the reconstruction, the reforms, the reorganization, that are so manifestly needed and inevitable.

At the end, of course, a long and exhausting war would have to mean a long and restoring peace. But it would mean more than that; it would mean new institutions of peace and productivity; it would open the way to a wider, truer view of the destiny of mankind.

Perhaps, then, there may be some compensation for the horrors of the struggle. Certainly, so long as our own country is out of it we seem to be insured our full share of the blessings that humanity may gain, and to be exempted from paying our tax for them.

STICK TO IT

Until Coffee Hits You Hard.

It is about as well to advise people to stick to coffee until they get hit hard enough so that they will never forget their experience.

A woman writes and her letter is condensed to give the facts in a short space:

"I was a coffee slave and stuck to it like a toper to his 'cups,' notwithstanding I frequently had severe attacks of sick headache; then I used more coffee to relieve the headache, and this was well enough until the coffee effect wore off.

"Finally attacks of rheumatism began to appear, and ultimately the whole nervous system began to break down and I was fast becoming a wreck.

"After a time I was induced to quit coffee and take up Postum. This was half a year ago. The result has been most satisfactory.

"The rheumatism is gone entirely, nerves practically well and steady, digestion almost perfect, never have any more sick headaches and am gaining steadily in weight and strength."

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Crops and Soils

Basic Slag Wins

By A. J. Legg

LAST spring on my West Virginia farm I selected a plot of ground for testing out basic slag on corn as compared with acid phosphate on corn. The soil was rather poor, but it was supposed to be uniform in fertility.

The season proved very unfavorable. It was extremely dry and none of my corn made more than one half a crop.

On May 19th I planted three rows of corn 54 feet long, with 11 pounds basic slag put in the hill. By the side of this I planted three rows with a 16-per-cent acid phosphate in the hill. Then I planted three rows of corn without fertilizer.

Each lot of corn was cultivated just as the other corn around it.

These three plots were carefully harvested and kept separate. On November 11th, it was husked and the ear corn carefully weighed with the following results:

Corn with basic slag	36 lb
Corn with acid phosphate	32 lb
Corn without fertilizer	25.5 lb

The plots were small, as there were only about two and one-half square rods in each plot. The fertilizer was used at the rate of 700 pounds per acre. Using the unfertilized plot as a base there was a gain of 41 per cent because of the use of basic slag, and a gain in production of 25 per cent because of the use of acid phosphate.

A good season ought to have doubled the production. Such a season as we had last year is hardly a fair test, so I am preparing to try the experiment again next year.

The Spreader is Better

By Martin Keplinger

REFERRING to the article in FARM AND FIRESIDE about the manure spreader, why was it a better crop of wheat when it was covered with the spreader and not with the fork?

I will tell you. With the fork from the wagon, manure cannot be so evenly distributed. With the fork there will be all the time more or less lumps which rest on the wheat and check the growth by cutting off the air.

Covering with the fork is better than nothing at all, however.

The spreader covers the wheat uniformly, leaving enough air, and giving shade so that it cannot dry out. The rain does not fall directly on the ground. This keeps the ground open, and therefore one can do better work with the cultivator.

The Prize I Drew

By Henry Field

I ALWAYS did like to experiment with new crops. It is lots of fun and occasionally even profitable. I have drawn blanks, plenty of them; but sometimes I draw a prize.

This time I feel that I have drawn a prize that will repay me for lots of failures. It is the new crop plant Sudan Grass.

Really it is too big to be called a grass. That title is misleading, for it grows all the way from 6 feet to 8 feet high; but I guess grass is as good a name as any for it, and when you come right down to botanical terms corn itself is a grass, so we will let it go at that.

Technically Sudan Grass is a sorghum, and is supposed to be the parent type of all the cultivated sorghums. It is about second cousin to Johnson Grass, but is a much more respectable member of the community and has absolutely none of the bad habits which have made Johnson Grass an outlaw and a vagabond.

In appearance it looks a little like Amber Cane, but is much more slender and graceful in appearance, about as tall, leaves more slender and lots more of them, stalks very fine, never larger than a lead pencil, and more often the size of a slate pencil. Not sweet like sorghum, but just sweet enough to make a splendid feed. Cures out readily, and makes the best of hay or fodder. All kinds of stock eat it greedily and thrive on it.

The characteristic thing about it is its habit of stooling. It acts like wheat,

only more so. It makes anywhere from 12 to even 100 stalks from a single seed. They just keep on coming all summer until you have a bunch of them 6 inches through at the base. For this reason it should be seeded very thinly. I had mine in rows 2 feet apart, but 3½ feet would have been better. Three or four plants to each foot of row is enough.

It should be drilled rather shallow, after the ground is well warmed up, say two weeks after corn-planting. Use 2 or 3 pounds of seed per acre. It grows slowly at first, but when hot weather comes it simply humps itself. Mine was ready to cut for hay in eight weeks from sowing, and ready to cut for seed in about thirteen weeks. It seeds heavily, and can be harvested and threshed like any grain, but its greatest value is for hay. It should be cut as soon as it heads out, and can be cut two or three times more at intervals of about four weeks.

Frost kills it. It does not live over in the ground, and the seed will not come up volunteer.

It is strictly an annual. It will yield all the way from 4 to 10 tons per acre. Mine made about 7 tons besides a crop of seed.

It was discovered in the Sudan country of Africa by one of the U. S. D. A. explorers, who sent seed to this country in 1909. It has been tested out mostly in the Southwest, as its remarkable drought-resisting ability makes it very valuable for that region; but last summer it was tested out all over the country. It will stand more drought than anything I ever saw.

Now, maybe you think I am over-enthusiastic about it, but you write to the U. S. D. A., Washington, D. C., for their bulletin No. 605 on Sudan Grass. They are crazier about it than I am. And they are dead right too, in my opinion.

Good authorities think that it will drive out all millets for hay and fodder purposes, as it makes more feed of a far better quality, will stand more drought, and will succeed over a wider range of territory. It is better than cane because it cures easier and will make more cuttings, and is not so coarse. Also it will stand drought better on thin land.



It grows with a great abundance of leaves and slender stems



Six to seven feet high in ten weeks from seeding — not bad is it?

Except for grain, it is better than Kafir or milo. They will always be needed for grain in the dry countries, but Sudan will beat them three to one for fodder.

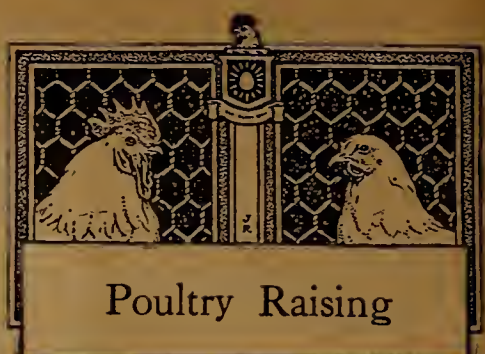
While its greatest value is in the dry land and high altitudes of the West, it will also be of great value in the corn belt, and even in the Eastern States, as it makes a convenient catch crop to provide roughness for the stock, and is better than either millet or cane, which are used so much for this purpose.

What are its drawbacks? Frankly, I have found none so far, and I have watched it closely both on my own place and in other States. The failures, if any, are likely to be from planting too early, too deep, and too thick. Also, it is a little tall to handle with a grain binder. A corn binder is all right, and so is a mower.

It can never become a pest. It will fit into almost any rotation. It cures easily.

The seed is rather high-priced as yet, but it takes so little seed to the acre that the price does not make much difference.

Be sure that you get seed that is guaranteed free from Johnson Grass and free from mixture with other sorghums. It mixes and hybridizes easily with any of them.



Poultry Raising

Selling Month-Old Chicks

By J. A. Reid

LAST summer I decided to try a new phase of the poultry business. It was the selling of chicks, not day-old chicks, but one-month-old ones. I knew there was money to be made, and being made, selling day-old chicks at 10 or 15 cents each.

However, I knew there were many people who would be glad to pay more to get pure-bred chicks that were already past the danger period. Therefore I determined to hatch some chicks, raise them to the age of one month, and then sell them. With this in view I started a 140-egg incubator on the 15th of March, filling it with 140 eggs. At the end of three weeks I took 110 nice, lively chicks from the incubator. I immediately filled the incubator again with eggs, and continued filling it every three weeks until the 15th of June.

In all I put 550 eggs into the incubator, and took 395 chicks out of it. I realized that I could not sell all my chicks locally to advantage, therefore I had a small advertisement inserted in a farm paper, offering pure-bred one-month-old chicks at 35 cents each. The advertisement cost me \$5 for three insertions. I received inquiries every day through this ad.

I had some neat letterheads and envelopes printed, and answered all inquiries the same day they were received. I also had a photographer take a picture of a "bunch" of my chicks, and enclosed one in every letter I sent out. I think that helped me sell my chicks more than anything else. I found that there was a good demand for four-week-old chicks, and at times had more orders for them than I could fill.

The inquiries and an occasional order kept on coming for weeks after I had sold all I had. I never imagined that there would be such a demand for them or I would have run several incubators instead of one.

There are several reasons for selling one-month-old chicks instead of day-old ones. In the first place, there is a greater demand for them, due to the fact that few poultrymen as yet sell chicks at this age. There are also many people who prefer to buy chicks at this age because the mortality among them is very small after they have passed this period.

I received 35 cents each for my chicks, while the total cost of raising them, including cost of eggs, feed, advertising, etc., was 16 cents each. However, mine were only utility stock. fanciers, or those having extra good stock, would have no trouble getting 50 cents each or more for them.

Sprouting Oats on Burlap

By L. H. Cobb

IN WINTER sprouted oats are almost a necessity for laying hens. I have heard it argued that sprouted oats have no more food value than the dry oats, but one might as well say that a whole stalk of corn, Kafir, or other forage crop has no more feeding value than the single seed that produced it.

Three or four inches of top and a corresponding amount of root growth certainly has more value than a single oat.

Root crops and alfalfa meal or dried clovers are good, but not so good as the oats.

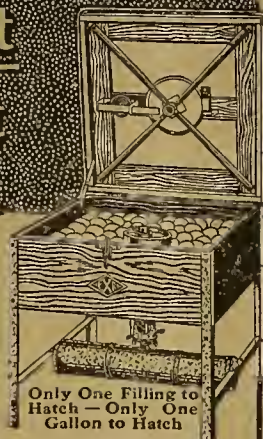
The great obstacle in the way of a general use of sprouted oats is the cost of the outfit for growing them. Racks and drawers cost money, and the heating process is difficult to prepare for.

I give here a very simple and inexpensive plan a friend of mine uses successfully. It is somewhat slower than where artificial heat is used, but that does not matter much.

You will need a room or cellar where there is some light and where the temperature does not fall below freezing. If this room has a cement floor your only expense will be for the oats and gunny sacks. If it has an earthen floor or boards it will be necessary to have a sheet of rubber or of metal.

Allow a quart of oats and a square foot of burlap for every twenty hens. Soak the oats twenty-four hours in warm water, and then spread out some in a box in a warm place for two days. Then spread out your burlap on the

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BERRY'S POULTRY FARM
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floor of your cellar and pour on your oats. Spread them evenly over it. Sprinkle with warm water.

Every day you soak a new lot. The fourth day you will have one lot soaking, one in the box its first day, one in the box its second day, and one just spread on the burlap.

Every day you spread out a new lot from the box, fill it with more soaked oats from the can and put another lot to soak.

Some feed oats once a week, but daily feeding is better.

Sprinkle the oats on the burlap every day. Use warm water for this, and be careful not to get them too wet. Stir them a little with the fingers to keep them aired until they start to sprout, after which they should not be disturbed.

When the roots have penetrated the burlap and formed a mass sufficiently to hold the oats in place hang them up to the walls or joists above. Drive a shingle nail through two corners of the burlap and let the two opposite corners hang down, or you can stretch a galvanized wire and hang your burlaps over it as you would a sheet over a clothes line, with the oats side out and the root side in. Sprinkle every day the same as when on the floor. They will require more water as the tops increase in size. Let them grow as long as you wish and then begin feeding. Simply throw the sack to the chickens and let them do the rest.

If you have many hens and thus a large piece of burlap, you had better cut it up some or the "bossy" hens will get the lion's share.

Sour Milk Did It

By Mrs. S. C. Davis

IN OUR California Valley it gets pretty hot in midsummer, and chicks are hard to raise then. When I read in FARM AND FIRESIDE about the sour-milk method, I set a couple of hens to try it out. They hatched 24 chicks, and 23 of them are half-grown now (October 5th). I gave them the milk before anything else, and gave it twice a day for a couple of months. Not one has been sick. I shall certainly use it hereafter for summer chicks.

ALFALFA is not a balanced ration. The thing needed to balance it is corn; or, if one hasn't the corn, milo maize or Kafir corn. When a ration is not balanced it usually pays to find out what is lacking and buy it. The amount of even as good a fodder as alfalfa or clover which an animal must eat to get a sufficient supply of fats, starches, sugars, and oils is terrific. The way to waste feed is to feed it in an unbalanced ration.

A Broody-Hen Contest

HERE'S some broody-hen arithmetic that ought to set every poultry keeper thinking seriously. The figures are based on the government census reports, and are the most reliable to be had.

The United States has about 225,000,000 hens that lay in a year about six dozen eggs apiece. The eggs from each of these average hens are worth about a dollar, and every time a hen sits and raises a good hatch of chickens she loses fifteen cents' worth of time, which is more than repaid by the value of the chicks. But if she sits and doesn't raise chickens she loses fully ten cents' worth of time besides getting thinner in flesh. If she is a better layer than the average her time is of course worth more.

Now if only half of the hens in the country (we are conservative) sit away ten cents' worth of time apiece without producing chickens, we lose over eleven million dollars a year just from failing to break them up and get them to lay again.

Now who knows the best humane way to break up a broody hen? Prizes of \$3 and \$2 will be awarded for the first and second best, and \$1 will be paid for all used. Be as definite and brief as possible. Contributions should be mailed to reach Springfield by February 1st. Address the Contest Editor, Farm and Fireside, Springfield, Ohio.

Lost People

HARRY E. HIMSTEAD has been missing since January, 1908. Was last heard from in Montana. Any information regarding his whereabouts will be gladly received by his mother, Anne R. Himstead.

MRS. JESSIE HITCH MCKEE, age about 29, medium size, brown hair and eyes, was last heard from in April, 1907, at Chattanooga, Tennessee. Any information of her present whereabouts will be greatly appreciated by her sister, Fannie Howard of Tennessee.

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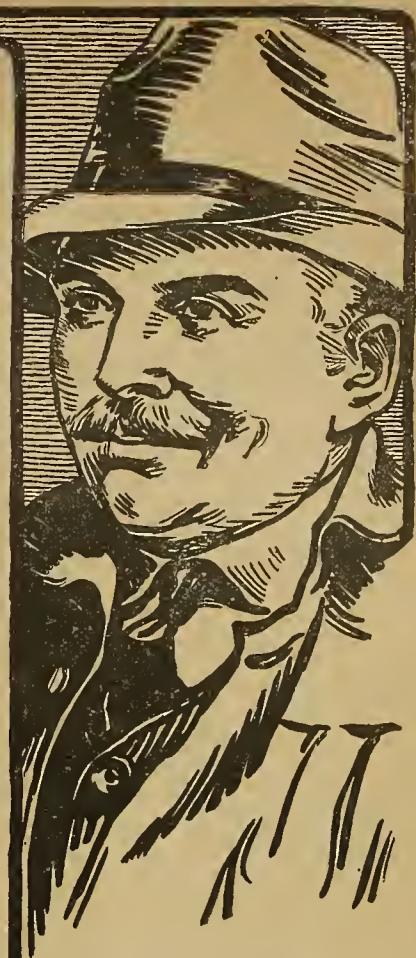
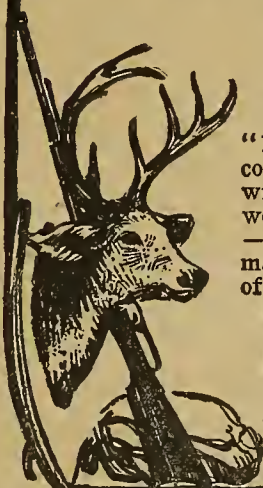
The greatest distinction about "PIPER" to a man who likes a smacking good relish to his chew is the famous "Champagne Flavor." The Piper taste mingles on his tongue with the natural, mellow sweetness of the ripest, richest, carefully selected tobacco leaf. "PIPER" is the highest type of chewing tobacco in the world—wholesome, healthful and satisfying.

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It is easier to keep up than catch up. It takes two years for trees to bear after the foliage is destroyed. Remember, too, that dormant spraying is important, and in some states spraying is compulsory. Sprayed fruit is good fruit, and good fruit always brings a good price in any season.

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Use in any wagon.

Fruit-Growing in Western New York

How the Orchards Are Started

By W. H. Jenkins

THE Lake Ontario fruit belt of western New York is the land between the southern shore of Lake Ontario and the "Ridge Road," which is supposed to be the original shore of the lake. This soil is a rich alluvial deposit which was formerly the lake bottom. The climate is tempered by the nearness of the lake. Profitable fruit-growing is not restricted to the lake regions, but fruit culture there is attended with so few disadvantages that it has become exceedingly popular.



Thorough cultivation of the soil accomplishes many good things, but it plays one of its most important roles when it holds the moisture for the use of the trees

The smoothness of the land permits cultivation with modern machinery, and frosts are so light in the growing season that peaches can be successfully raised. Good lands, not in orchard, are valued at \$300 per acre, and the best bearing orchards at \$1,000 per acre. The best fruit-growing opportunities for the man with small capital seem to be the sloping or rolling foothills of the more hilly portions of the State, that are fairly easily cultivated and naturally drained. Such lands cost \$50 per acre, and grow apples, pears, and other hardy fruits. I am growing tree fruits on such land, and frosts have not seriously injured the crop oftener than one year in ten.

Planting the Young Orchard

One of the successful growers I visited showed me his four-year-old cherry orchard, the trees of which were as large as most orchards five or six years old.

"Did these trees bear this year?" I asked.

"Yes, we harvested a nice crop. I buy trees in large quantities," he explained, "about 10,000 trees in the last few years. I buy the best grade of one-year-old trees of a reliable wholesale nurseryman, and thus save all dealers' profits. I plant the trees on land occupied the year before in hoed crops such as beans, corn, and potatoes. I get the soil well pulverized early in the spring, then furrow deep, 40 feet each way for apple trees, 20 feet for pears, and 15 to 18 feet for cherries, plums, and quinces. In the apple orchard I plant a filler of cherries sometimes. After the trees arrive I keep them well 'heeled in,' and the roots moist until I am ready to plant them. When ready to set I cut back the roots about one third. I plant the trees a little deeper than they stood in the nursery, and tread fine surface soil over the roots, then fill in and keep the surface of the ground loose around the tree. I cultivate continually in summer.

"But I do not lose the use of the land while growing an orchard," he continued. "For the first five years I grow almost as much on the land as if there were no

trees on it. The usual inter-crops are beans, potatoes, corn and tomatoes for canning. It is hardly any trouble to cultivate and hoe the space close around the trees when working these inter-crops.

Next we drove to a seven-year-old pear orchard that was bearing a large crop; and then to a four-year-old peach orchard with a crop on the trees estimated at two bushels each. In these young bearing orchards inter-crops will no longer be grown, but the plan of culture will be summer cultivation with cover crops sown at the last cultivation.

Most farmers who do not make a specialty of fruit-raising give the orchard very little attention except to harvest the fruit. The trees are usually in sod ground, and the soil is never cultivated or fertilized. One large fruit orchard I visited in the Ontario fruit belt was cleaner than any cornfield I ever saw. As far as I could see in every direction there was an expanse of perfectly cultivated soil. All the space between the trees was covered with a finely pulverized earth mulch. The cultivations have been done with a gasoline tractor of sufficient power to draw a gang of four plows side by side.

In the early spring as soon as the soil is in condition for working, the orchard is plowed shallow, then a disk harrow is used, and lastly a pulverizing harrow.

The benefits of such cultivation are these: First, the decaying vegetable matter furnished by the cover crop or stable manure is finely pulverized and made more quickly available for plant food. Second, the finely pulverized cultivated soil absorbs and retains rainfall more readily than ground left in sod. Third, cultivation lets the air and sunshine through the soil, thus warming it and hastening chemical changes. Fourth, the cultivation forms a fine earth mulch.

In the orchards I saw the results of this kind of cultivation were very evident. Underneath the surface the soil was moist although there had been drought all summer. The foliage on the trees was dark green and healthy, and the growth of wood seemed vigorous, and the fruit was developing well.

Clover, Manure and Fertilizers

The general practice in this orchard country is to sow clover in the orchards about the last week in July if the weather is favorable for its germination. While clover is one of the best cover crops, orchardists do not like to buy high-priced seed if they are not certain it will germinate and make a fair crop during the fall. Later than the last of August a combination of rye, vetch, and cow-horn turnips is considered a safer cover crop to sow. Where the cover crop makes a large growth in the fall, some cut it with a mower and leave it on the ground until spring, then plow it under. Cultivation follows as described.

Most orchardists in western New York supplement the cover crop with stable manure where they think it is needed. Some chemical fertilizers are also used.

Tomatoes in a Dry Year

By F. R. Finch

FROM 3¼ acres 1,275 bushels were grown in 1914 by R. O. Finch of Hamilton County, Ohio. The sod hill-land produced about 40 bushels of corn per acre in 1913. It was sown in rye and then disked. In the spring 300 pounds of good fertilizer per acre were scattered broadcast after plowing under the rye. Six loads of manure were also scattered. After disking, the ground was rolled and harrowed until in fine condition. Some plants were set as late as July 1st. The Stone variety was used. They were hauled four miles to a cannery, at 50 cents per bushel.

Mr. Finch is one of the boys that stayed on the farm.

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The Housewife is a bright, entertaining monthly magazine containing many wholesome serials and short stories and articles of unquestioned merit. It is a magazine that any woman looks forward to receiving each month. It is well illustrated with the work of the best-known artists. The Housewife is edited by Lillian Dynevor Rice.

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Farm and Fireside, Springfield, O.

The Experience Bazaar

How Much is a Home Worth?

DEAR FIRESIDE EDITOR: The question of how to make farm life more attractive for the boys and girls is an interesting one. Not the least important item to be considered is the house they live in. It is very pretty, of course, to say that true love will make any home ideal, but the material abode has a very great influence, whether the love within it is ideal or not.

A point upon which I have never been able to satisfy myself is whether it is ever justifiable to go into debt to fit up a home. Indebtedness is always to be avoided when possible. Losses, sickness, and misfortune have a way of turning up at a critical period, and at such times indebtedness is not only annoying but frequently disastrous.

On the other hand, the dangers of bringing up a family in undesirable surroundings should be considered. Environment has a great deal to do with formation of character.

In poor and ugly surroundings children grow up dissatisfied and envious, and often grouchy and ill-tempered. By the time the money to build or remodel has been accumulated, childhood is past, and with it some of life's keenest joys and most precious opportunities. Years of waiting cause young lives to grow old rapidly, and discontent comes and sits on the hearthstone. Being forced to do without, or a scarcity of, pocket money, generally has the effect of making either misers or spendthrifts. Children constantly restrained from spending grow up with a desire to spend—spend, once they acquire the money; or they have formed stingy habits, and as a result are niggardly for life. Surrounded by makeshift furniture, unattractive table furnishings, coarse linen, and cheap clothing, they lose the opportunity to gain qualities of mind which in

THESE are important letters. How much is a home worth?

How valuable are the happy and refining influences which spring up only around the family hearthstone?

Is it better to enjoy the security of an income free from debt, with a bank balance free to meet the emergencies of illness and misfortune; or is it better to endanger the income, if that is necessary, in order to equip the character with habits of happiness, self-respect, and good taste?

These, it must be remembered, are forces not only in the social but in the money-making world.

Is it better to have your bank account safe, or to have your characters and your children's characters safe?

after life would be invaluable. Then, too, the justifiable sense of pride young people feel in a well-appointed home exerts a stimulating influence. It gives them characteristics which make for success.

History of course proves that humble origin produces Lincolns, or did in one remarkable instance; but I know from personal experience that it also leaves marks upon the individual that are not the most desirable, a sense of bitterness toward the world, or distorted notions of life and a tendency to look on the ugly side. It seems to me that a few hundred dollars wisely invested in making home cheerful and gracious, even if borrowed for the purpose, are well spent because

they enable us to give young people the right start.

I wish some of the readers of this paper would express their opinions on this subject, which looks like a very important matter to me. I am at present trying to solve the problem for myself, and am not making much progress.

C. O., Iowa.

Don't Wait

DEAR FIRESIDE EDITOR: Isn't it pathetic to see a family scrimp and save for years to build a big house, rearing the children in squalor and depressing sordid surroundings, and then about the time the children are ready to flit build a house to astonish the natives? A parlor ever so fine, with velvet carpet and a piano, will not minister materially to Grace's culture after she has grown up on shabby sordidness. How much more the family would have enjoyed that fine house if it had come little by little every year! Then its influence would have contributed to the children's education in their formative period.

That is why I like the phonograph and think it one of the farm home's greatest means of culture. The first cost is not prohibitive, and the records may be increased as the income permits. Meanwhile the family's pleasure and musical education begin with the first record.

Think about your children's bedroom. Perhaps it is dark and dingy. The children just "hate" it—with good reason. They will never need the influence of bright, pretty surroundings as they need them now, in their childhood. So instead of waiting for that far-off time when you can afford to give them a fine room, why not let in another window, if it be only an odd-sized one, repaper and repaint in light colors, not forgetting to enamel the furniture? If it is necessary, borrow a little money. A. L., Kansas.

The Brown Mouse

Continued From Page 9

Jennie as a diversion. "It's one of the words I have seen often and know perfectly to speak it and read it, but after all it's just a word, and nothing more."

"Ain't that the trouble with our education, Jim?" queried the Colonel, cleverly steering Jim back into the track of his discourse:

"They are not even words," answered Jim, "unless we have clothed them in flesh and blood through some sort of concrete notion—'Chaparral' to Jennie is just the ghost of a word. Our civilization is full of inefficiency because we are satisfied to give our children these ghosts and shucks and husks of words instead of the things themselves, that can be seen and hefted and handled and tasted and heard."

Jennie looked Jim over carefully. His queerness was taking on a new phase, and she felt a sense of surprise such as one experiences when the conjurer causes a rose to grow into a tree before your very eyes. Jim's development was not so rapid, but Jennie's perception of it was. She began to feel proud of the fact that a man who could make his impractical ideas seem so plausible, and who was clearly fired with some sort of evangelistic fervor, had kissed her once or twice on bringing her home from spelling school.

"I think we lose so much time in school," Jim went on, "while the children are eating their dinners."

"Well, Jim," said Mrs. Woodruff, "everyone but you is down on the human level. The poor kids have to eat."

"But think how much good education there is wrapped up in the school dinner, if we could only get it out."

Jennie grew grave. Here was this brown mouse actually introducing the subject of the school—and he must know that she was planning to line him up on this, if he wasn't a perfect donkey as well as a dreamer. And he was calmly wading into the subject as if she were the ex-farmhand country teacher and he the county superintendent-elect!

"Eating a dinner like this, Mother," said the Colonel gallantly, "is an education in itself, and eating some others requires one; but just how larin' is wrapped up in the school lunch is a new one on me, Jim."

"Well," said Jim, "in the first place the children ought to cook their meals as a part of the school work. Prior to that they ought to buy the materials. And prior to that they ought to keep the accounts of the school kitchen. They'd like to do these things, and it would help prepare them for life on an intelligent plane while they prepared the meals."

"Isn't that looking rather far ahead?" asked the county superintendent-elect.

"It's like a lot of other things that we think are far ahead," urged Jim. "The only reason why they're far off is because we think them so. It's a thought, and a thought is as near as it will ever be the moment we think it."

"I guess that's so—to a wild-eyed reformer," said the Colonel. "But go on. Develop your thought a little. Have some more dressing."

"Thanks, I believe I shall," said Jim. "And a little of the cranberry sauce. No more turkey, please."

"I'd like to see the school class that could prepare this dinner," said Mrs. Woodruff.

"Why," said Jim, "you'd be there showing them how! They'd get credits in their domestic-economy course for getting the school dinner, and they'd bring their mothers into it to help them stand at the head of their classes. And one detail of girls would cook one week, and another serve. The setting of the table would come in as a study—flowers, linen, and all that. And when we get a civilized teacher, table manners!"

"I'd take on that class," said the hired man somewhere below the salt. "The way I can make my knife feed my face would be a great help to the children."

"And when the food came on the table," Jim went on, with a smile at his former fellow laborer, who had heard most of this before as a part of the field conversation, "just think of the things we could study while eating it. The literary term for eating a meal is discussing it. Well, the discussion of a meal under proper guidance is much more educative than a lecture. This breast bone, now?" said he, referring to the remains on his plate, "that's physiology. The cranberry-sauce, that's botany, and commerce, and soil management. Do you know Colonel, that the cranberry must have an acid soil, which would kill alfalfa or clover?"

"Read something of it," said the Colonel, "but it didn't interest me much."

"And the difference between the types of fowl on the table, that's breeding. And the nutmeg, pepper, and coconut, that's geography. And everything on the table runs back to geography, and comes to us linked to our lives by dollars and cents, and they're mathematics."

"We must have something more than dollars and cents in life," said Jennie. "We must have culture."

"Culture," cried Jim, "is the ability to think in terms of life—isn't it?"

"Like Jesse James," suggested the hired man, who was a careful student of the life of that eminent bandit.

There was a storm of laughter at this sally, amidst which Jennie wished she had thought of something like that. Jim

joined in the laughter at his own expense, but was clearly suffering from argumentative shock.

"That's the best answer I've had on that point, Pete," he said after the disturbance had subsided. "But if the James boys and the Youngers had had the sort of culture I'm for, they would have been successful stockmen and farmers instead of train robbers. Take Raymond Simms, for instance. He had all the qualifications of a member of the James gang when he came here. All he needed was a few associates of his own sort, and a convenient railway with trains running over it. But after a few weeks of real 'culture' under a mighty poor teacher he's developing into the most enthusiastic farmer I know. That's real culture."

"It's snowing like everything," said Jennie, who faced the window.

"Don't cut your dinner short," said the Colonel to Pete, "but I think you'll find the cattle ready to come in out of the storm when you get good and through."

"I think I'll let 'em in now," said Pete by way of excusing himself. "I expect to put in most of the day from now on getting ready to quit eating. Save something of everything for me—I'll be right back."

[CONTINUED IN NEXT ISSUE]

Straw Sculpture for Children

By Pearle White McCowan

SOME day when the children are pinning for something to do send them to the straw stack with a pair of shears, a spool of stout thread, and a good long darning needle, and tell them to build a straw castle. They will need to select perfect straws and to cut them into uniform lengths, two and a half or three inches in length. These should then be strung on the thread and arranged, by means of tiny, almost invisible knots, into squares and cubes, which are then joined to other squares and cubes and combined into any fantastic shapes which may suggest themselves to the fertile brain of the child.

One little girl fashioned out of these straw units an airy little castle about two feet in diameter. It excited much comment and admiration as it hung from the ceiling of a country store.

Another lassie varied hers somewhat by making it into a sort of Japanese wind bell, and hanging it on the porch where it swayed and chimed at the slightest breeze. The bell attachment was made by suspending inside the castle several bits of colored glass glued by means of tiny pieces of paper to strings which were slipped inside several lengths of straw, and tied neatly to the framework.

"BUNCOMBE"

It Don't Always Pay to Be Skeptical.

When a newspaper writer and proof reader that works nights can feed himself out of dyspepsia, which most all that class suffer with, it is worth while to know the kind of food used.

This man says:

"Being a newspaper writer and proof reader, also a graduate in medicine as well, though not practicing, makes a combination that would produce a skeptic on the subject if anything would."

"Day after day I read the proof on the Grape-Nuts advertisements with the feeling that they were all 'buncombe.' All this time I was suffering from dyspepsia from the improper food I was eating at the restaurant."

"One day I saw a package of Grape-Nuts at the restaurant and tried some with cream. The food took my fancy at once. After a few lunches on it at midnight I noted an improvement in my feelings, and was able to work with less fatigue."

"I have used Grape-Nuts as a regular diet since then, and have improved greatly. The old dyspepsia and bad feelings that I thought were necessary adjuncts to night work disappeared, and I am able to do much more and better work with less effort than ever before."

"I was nearly ready to give up and seek health in some other walk in life but thanks to my change in diet I am now all right." "There's a Reason."

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Utility Gifts for the Bride

By Hulda Hamilton



She sopped up the water with tea towels and tablecloths

THERE was once a bride. All the happy year preceding her wedding day her friends had delighted in bringing gifts for her "hope box." There were embroidered luncheon cloths, crocheted table covers, and doilies and guest towels *ad infinitum*. The girl gloried in her treasures, and no one seemed to remember that homely, useful

things have also a place in a well-ordered household. After the honeymoon the bride took her belongings to the trim little flat. Everything was new—every piece of silver, every towel, every apron—and after a little it became perfectly maddening to feel that every article she possessed was too good to use in some of the menial work incident to every household.

One day there was an unexpected leak in the waterpipes which threatened to deluge the flat. The distraught little bride sopped up the water with tea towels and napkins and tablecloths, and finally when it seemed that the plumber was never coming she sacrificed her dainty blue bedroom ring.

"If you'd taken an old bed comfort you could have held the water in check till I got here," the emergency man remarked as she stood looking at the havoc.

"An old bed comfort!" she laughed hysterically. "All my comforts are of down, and every sheet I have is embroidered."

After that when she saw people bringing gifts for some girl about to be married she always implored, "Oh, put in something old!"

A utility box is one of the young housekeeper's best friends. Take a good-sized wooden box with a hinged lid. Cover it neatly with some durable material like burlap or heavy art paper, divide the body of the box into compartments, and tack strips of rubber elastic across the inside of the cover.

Fill the box with all sorts of old soft cloths—the kind needed in the everyday life of the home. Pieces of old soft underwear and bits of ontung flannel, the tops of stockings, both black and tan, strips of old calico and remnants of cheesecloth, should all find a place in this box. Be sure to put in an old cotton blauket or an old shawl and some half-worn sheets for the pressing board. Some pieces of pants cloth for mops and old pieces of silk for dusting will not come amiss. If you have an old counterpane, cut it into squares and buttonhole the edges with white knitting cotton for dishcloths.

Some thoughtful friend will surely want to provide a button box. Put in it all sorts of buttons of the shapes and sizes that collect in any family, but which frequently cannot be bought at any price. In a separate compartment put all sorts of hooks and eyes, patent fasteners, buckles, etc., and if you want to be particularly generous add a dozen little bobbins of thread in the unusual shades and numbers so often needed for mending gowus and fine lingerie.

An emergency box is another useful gift. It should contain court plaster, salve, some remedy for burns, absorbent cotton, a roll of gauze or soft linen, adhesive plaster, and peroxide or some other good antiseptic. Have a little bunch of rubber bands, which are much better than cord for holding a cloth around a small cut, and put in several finger shields made by dipping the finger ends of old kid gloves in paraffin. One of the Red Cross emergency cards may be tacked to the lid of the box.

A case of herbs, most of them grown

in her own garden, was the gift of one old lady to a prospective bride. The herbs were arranged in small jars, each one labeled. There was sage, summer savory, mint, hops, celery seed, caraway, dill, candied orange peel, and citron; and the young housekeeper had reason to bless her thoughtful old friend many times during her first year of cookery.

There are scores of practical every-day things which one has only to look about her own kitchen in order to remember. Let someone give an old steel caseknife and fork, some tight-covered tin cans, some empty lard pails, some small glass jars with screw tops for holding the odds and ends for which the kitchen cabinet doesn't provide. Some tin cans with the tops melted off would come "mighty handy" for brown bread or steamed puddings, and a pair of kitchen shears for trimming steaks and cutting celery and meats for salads would prove invaluable.

Don't stint unnecessarily the dainty, beautiful things for the bride, but put in some homely, practical articles as well.



A Simple Diamond Insertion

This crocheted insertion grows rapidly if you keep it for odd-minute work. Why not make some for summer dresses? Directions will be sent on receipt of a self-addressed stamped envelope. Address Evaline Holbrook, Farm and Fireside, Springfield, Ohio

The Impossible—Continued from Page 3

glance toward Mrs. MacNally who had insisted upon an abundant provision. "Enough to feed the whole town, I say."

Mrs. Pendleton, the grocer's wife, pushed back a pair of heavy bracelets from her lean, dark wrists, while the corners of her mouth drooped.

"It's just impossible to have any kind o' get-ups here. The folks just won't come out."

The missionary's wife sat close to one of the oil lamps and swung a shabbily clad foot from her crossed knee while she steadily ran a darning needle back and forth in a coarse gray sock of the Elder's. Her face wore a placidly absent look. Presently, as all the women were looking with varying expressions at her, she spoke, and interpolated her remarks with emphatic orders to various docile men-folk who were moving about or sitting on the counters.

"Well,"—she paused to bite off the yarn—"I'm restin' it.—Mr. Jones, if you're goin' to bring in them oyster cans and open 'em fer us you might as well do it now and git it done.—You see, after I carry an armful o' wood up-stairs to our room at Mrs. Stowell's house I don't stand there and hold it. I lay it on the fire, and I don't waste no time worryin' fer fear the flames won't know how to lick up them sticks, either.—Pa,"—she was addressing the Elder himself now,— "you go out and see if the snow has gathered on them steps, an' if it has you take that there broom behind the counter and sweep 'em off. We don't want all them folks tumblin' and breakin' their necks right at the door."

"All them folks!" muttered Miss Ayres. "I don't know who they be."

"After I've done what I see to do," continued Mrs. MacNally as if she hadn't heard, "I just drop it into the Lord's hands. And I don't think about it any more.—Say, some o' yon folks that's got charge o' the coffee, you better see that it ain't goin' to boil over."

The women all started and ran toward the cook stove which Mr. Kent had put up for us at the back of the store. I moved over to the chair next Mrs. MacNally and snuggled up to the lean, shiny-silk shoulder. I longed for something strong on which to rest my aching heart.

"Well, Miss Gertie!" she welcomed me as she adjusted the scant headdress upon her tightly knotted hair.

"But suppose the thing you want," I said in a low voice, "is something—something impossible. Something that isn't exactly wrong to want, because it really is yours, you know that it is, yet it

has been made impossible to you. What good will it do to pray for such—" my voice broke, and my head went down upon Mrs. MacNally's shoulder.

She kept on darning, but her "Hum, hnm!" was full of sympathy. She seemed to be thinking. "There ain't no such thing," she presently broke out. "What's yours is yours, and nothin' on earth can take it from you. Besides, the Lord cau do anything. We can't see how: we're too blind and foolish. But if I felt and knew that the moon belonged to me I wouldn't do any worryin'. I'd just pray, and say right out loud that the One that told me to wait the moon knew how to give it to me. And then I'd just go on lightin' candles until He saw fit to give me the moon."

I sat up and dried my eyes. I gazed at Mrs. MacNally as the pagans of old must have gazed at the shrine of the oracle which had given them a convincing message.

My oracle arose at a call from one of the women, and with the darning needle in her mouth went to test the coffee.

I slipped to the back of the store where it was dark, and looked out through a window up into the wintry sky. After I had stood there in silence a few minutes I went back to the tables and said with enthusiasm:

"Now I want to work. I wish someone would come to be served. Give me that biggest tray! Here, Mrs. MacNally, I'm going to carry the heavy things. You take the little side dishes."

My oracle looked at me for an instant with her face set in grim lines; then she wagged her head. "You're a good 'nn!" she snapped.

During the next hour a few business men came in to supper, with now and then one of the more venturesome from among the wives of the townsmen. But by half-past seven it was difficult for the most hopeful of us to keep our faces from reflecting our flagging spirits. Mrs. MacNally ordered us all to take a drink of coffee, and we were just emptying the cups when our leader suddenly sat up very straight. She made me think of my uncle's pointer.

"What on earth's that?" she demanded of nobody in particular.

We hushed our talk. We heard a rhythmic hum of distant voices. An occasional shunt from the strained throat of a man rang through the frosty air. Nearer and nearer came the sounds.

As we sat, breathless and wondering, the store door was thrown open. Tramp, tramp, tramp! Through the opening

came three carloads of hungry soldier boys from that blockaded south-bound train. Shaking the snow from their shoulders and confiscating the tables, the counters, and every available sitting place, they looked like angels to us.

We forgot ourselves and fairly flew to the work, of which we found plenty. Mrs. MacNally was as cool and comfortable as if she were dispensing pancakes to her own little family. She even found time to joke.

"Say, you girls, don't you be falling in love with that there young captain with the shinin' epanlets on his square shoulders! He is awful good-lookin'."

I seized my big tray and set it upon a serving table. The boys were chanting:

Pass some soup,
Pass some soup,
Pass some soup—soup—soup!

I lifted a heavy threen and set it upon my tray. It was well, however, that I did not lift the whole burden, for just at that instant the broad-shouldered young captain strode up between the tables to take the seat to which Mrs. MacNally was beckoning him. He turned toward me. Our eyes met.

The hardware store and its hospitable appointments disappeared. We stood alone, he and I, gazing spellbound, unbelieving. I think I knew then what it would be to come awake in heaven.

How we crossed the intervening space I never knew, but I found myself wrapped in his arms, and sobbing.

"Tom—Tom—Tom!"

He raised my head and looked at me. "Why, Gertie, darling! How—where—" then a flash lit his dear blue eyes. "Why did you run away from me?"

At that I remembered the reason I had run, and I drew swiftly back.

"Where is your wife?" I asked icily.

He dropped his arms and stared harder than before. Then he burst into a laugh and seized me again.

"Oh, you little goose! Did you see that notice? Why, it was Tom L. Didn't you know that he had been mooning about Miss Roberts for a year?"

My head went down again. I had forgotten Tom's third cousin, whom I scarcely knew, indeed.

I felt my sleeve pulled, then my shoulder was given a vigorous shake.

"My land, child," Mrs. MacNally was saying; "listen to them boys! They're all starvin', and they're laughing at you."

As I started back, a lusty youth arose to his feet and shouted:

"Three cheers for Captain Keane and the girl he left behind him!"

The cheers rang out, and then they all broke into the familiar song. I turned to run away, but my oracle had fast hold of me.

"Here, them boys at you far table want the cream. You take it to 'em." Then she added under her breath: "I guess you and me've both found out something about 'the impossible' to-night. I been coutin' noses, and we'll make a hundred and thirty-eight dollars. Our lot is more than paid fer."

I pressed her hand and seized the tray. A chanting appeal rose above the clamor:

Want some cream,
Want some cream,
Want some cream—cream—cream!

In spite of the merry glances I must encounter, I didn't mind serving those boys. There was even a touch of motherly feeling in my heart as I went about the tables. Their mischief, too, was tempered by respect, for they knew as well as I that I was going to be their captain's wife.

So I was, the very next day, with dear Elder MacNally blessing us. Tom would have it so, for any time the thaw might come and the train go on its way.

Strange it was that whereas Tom had felt that he must conceal from me as long as possible that he was training this company—so tenderly had I always been handled—he now found his wife buckling on his sword and actually smiling through her white lips.

Although I then entered upon a new phase of suffering—as any soldier's wife will understand—yet there was this difference: The first suffering was a false condition into which I had plunged myself through my own vain and selfish will. The new suffering was beautiful, sweet and tender, for it came from the hand of God.

As I finished writing the last lines the library curtains parted and old Jim tiptoed to the grate and gave the logs a poke.

"Gen'l Tom jes' come in, Miss Gertie."

"Oh, is the General through with his gardening, Jim? I wish you would ask him to come in here when he can. I want to show him something."

Jim's white coat disappeared. I reached for a check book. What fun for Tom and me to help that church—whose material body we have never seen, yet whose spirit is so closely related to ours—to celebrate its fiftieth anniversary!

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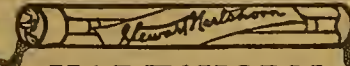
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Miss Gould Tells How to Turn Old Garments Into New Ones With Little Effort

No. 2610—Blouse with Bolero in Cape Effect
32 to 44 bust. Material required for 36-inch bust, one and three-fourths yards of forty-inch for the whole blouse, with three-eighths yard for the collar, one-fourth yard for bolero belt. Price of pattern, ten cents

No. 2661—Waist with Jersey Overblouse
32 to 42 bust. Material required for 36-inch bust, two and one-eighth yards of thirty-six-inch, or one and seven eighths of fifty-four-inch width, with one and one half of twenty-seven-inch material for jersey. Price of pattern, ten cents

No. 2621—Bolero Blouse with Pointed Girdle
36 to 46 bust. Material required for 36-inch bust, one and three-fourths yards of thirty-six-inch material, with three-fourths yard of fifty-four-inch for bolero and one-fourth yard for collar. Pattern, ten cents



No. 2610—Showing the Cape-Like Bolero
The blouse made in this way requires two and one-fourth yards of forty-inch for the bolero and girdle, one and one-eighth yards of forty-inch for back and fronts of blouse, and three-eighths yard for the collar. Pattern ten cents

No. 2666—Matinée with Vest
32 to 44 bust. Material required for 36-inch bust, two and three-eighths yards of thirty-six-inch material, with one yard of plain material for vest and the trimmings. The price of this matinee pattern is ten cents

Patterns for the designs shown on this page may be obtained from either of our two pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio.

MOST of us have a garment or two hung away which we hesitate to discard but which cannot be worn in its present style. There are numberless ideas and suggestions this season for turning these useless "closet" clothes into becoming, wearable ones without the slightest indication of the "made-over" in their appearance.

fon, net, cotton voile, or other sheer material; in the bolero use silk or satin matching or in harmony with the tailored suit—it will be dressy enough for almost any occasion.

The new becoming sleeveless effects, the vests, and the various girdles and guimpes are all helpful. A dress may be given an entirely new appearance each time it is worn by varying the girdle or guimpe.

A sleeveless overblouse, such as shown in Nos. 2661 or 2621, offers an excellent way to make use of a left-over piece of satin or velvet which has been laid aside with the vague idea that sometime it will come in handy. It is also an effective way of combining contrasting materials. An overblouse of this kind, made up in black satin, velvet or in jersey, the material shown in the illustration, will transform a somewhat out-of-date summer dress into a charming little dance, party, or church dress.

The other sleeveless design, No. 2621, shows a pretty way to change a dress of serge or other heavy fabric. The underblouse may be of sheer material for dressy wear or of silk or satin for more practical purposes. By having two or more guimpes the dress may be varied to suit the occasion.

The blouse shown in No. 2610 may be developed in the simple way shown on the first figure, with long set-in sleeves, flaring collar, and shaped vest-like girdle of wash silk or cotton. The second adaptation shows the bolero-like overblouse. This bolero offers a practical way to remodel shabby frocks and blouses, especially blouses. Make it with the underblouse of chif-

An attractive vest is a feature of the matinee, No. 2666. If one does not care to purchase new material for a garment of this sort it may be made from a discarded summer or light silk dress, or even an old flannel wrapper, using a contrasting silk, flannel, or all-over lace for the vest. The tasseled points complete the little garment most effectively.

Among the new high collars that are coming back into favor is the upstanding ruff of net or lace, such as shown in No. 2661. For more general wear with tailored dresses and suits there are stiff white collars, high in back and open in front. Many of the tailored dresses and waists show high, close-fitting collars, closing military fashion down the front, finished with a few rows of braid. While the high collar seems to be gaining in popularity daily, the open throat still holds its own, and one is free to choose between them and still be up-to-date.

Be sure to choose the collar that is becoming.




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Brown Potatoes
Macaroni au Gratin
Baked Apples

Cook your whole meal at one time in the

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and save labor and expense. "Wear-Ever" heats more quickly and retains heat longer than other ware. Cannot rust, chip or scale.

Replace utensils that wear out with utensils that "Wear-Ever"

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WANTED: Men to demonstrate and sell "Wear-Ever" Specialties. Only those who can furnish security will be considered.



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Send prepaid 1-qt. "Wear-Ever" Stepan. Enclosed is 20c in stamps—money refunded if not satisfied.

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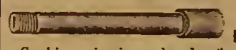
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Hog Troughs 89c



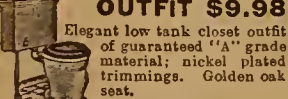
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Bath Tub Complete \$13.00



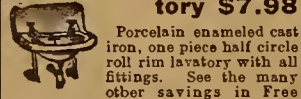
White enameled, cast iron, one-piece, heavy roll rim bath tub; 5 ft. long; latest style nickel-plated trimmings, including Fuller double bath cocks for hot and cold water, nickel-plated connected waste and overflow and nickel-plated supply pipes. Order lot No. F-101.

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Other like savings in Free Plumbing Book.

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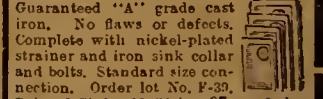
Porcelain enameled cast iron, one piece half circle roll rim lavatory with all fittings. See the many other savings in Free Plumbing Book. Send for it today!
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Wood bottom smoothing plane. Length 8 in.; outer 1 1/2 in. A good tool for all purpose use. All other small and large tools proportionately low.

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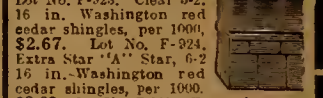
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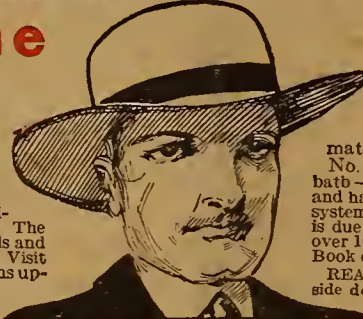
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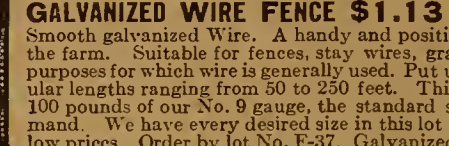
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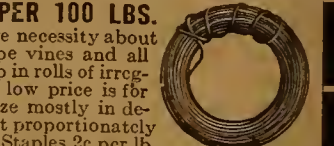
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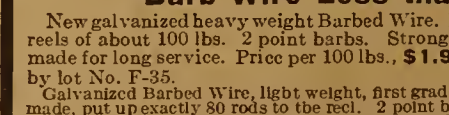
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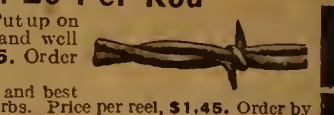
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ESTABLISHED 1877



“My Roland . . . my horse without peer.”—*Browning*

WITH THE EDITOR

ON PAGE 5 of this issue appear some pictures illustrating what is called the "char-pit" method of removing stumps.

It is merely an improvement upon an old method—simply "burning 'em out."

I have a letter from Mr. W. H. Ballou, which, to my mind, adds interest to these pictures, for the char-pit method of destroying stumps seems to be in part the basis of one of the most important forward steps ever taken by an American State. This forward step is the new policy of the State of Washington, under which the State will clear and reclaim lands for settlers.

Do my old-fashioned readers see what this means? Think of what it would have meant if the State had cleared the first ten or twenty or forty acres of each farm in the timbered lands of New England, or New York, or Pennsylvania, or Ohio, or Indiana. Think what it would have meant to our forefathers in the saving of toil and waiting and suffering. Think of how much more rapidly these States would have settled up if the settler could have had a ready-made farm offered him on the sole condition that he would pay the Government the expense of clearing—an expense which would have been so much less to the Government than it inevitably was to the settler, less in money, if lost wages count for anything, less in loneliness, less in the enforced ignorance of the children who grew up in the woods. But let Mr. Ballou tell about the Washington law and its objects and probable results.

Acres That Should be Making Money

The new law has gone into effect in the State of Washington with a rush, whereby 2,500,000 acres of logged-off or stump lands of cleared forests are open to settlers with or without means, to stop further migration to Canada. No more drastic communal legislation has ever been enacted, and ambitious newcomers will have unlimited credit and assistance. Logged-off lands have always been known as rich in the most productive soils, but their costs of \$10 per acre, and of \$40 to \$150 per acre for removal of the huge stumps of 300-foot trees, have barred them from cultivation, except about 600,000 acres taken up for tillage and pasturage by people of means.

New and economical methods will vastly reduce the cost of stump extermination from an average of \$5 per stump by stump pullers to 30 cents, or an average of \$9 per acre. The latest methods comprise the use of modern gas tractors as rapid stump pullers, and the new char-pit method of stump-burning. A gas tractor of the right sort will yank out stumps, when they are not too large, roots and all, as fast as men can hitch the cables to them. Two men can burn 50 stumps per day by char-pit method, roots and all, with no machinery whatever.

Under the new Washington law county commissioners may call elections for the purpose of creating agricultural development districts, each district comprising either a county or section thereof. An election may be called upon petition of 10 per cent of the county electors, at which three commissioners may be elected to direct matters without pay. The commissioners may carry into effect clearing or irrigation of land, building or improving roads, purchase or manufacture of supplies for sale to settlers



at cost, aid marketing farm products, or do anything in reason for the uplift of the district and its settlers. The law requires all officers, state, county, or municipal, and experts of state institutions and experiment stations, to give their services to any agricultural development district on call. All such districts may be financed by issuance of 20-year bonds, up to 5-per-cent assessed valuation, thus encouraging as large districts as possible to increase the value back of the bonds and assist in their sale.

The commissioners may acquire undeveloped lands within their respective districts to fit them for productive use and sale thereafter at not more than \$20 per acre for logged-off and \$25 for arid lands. But no lands shall be cleared when they rate above \$100 per acre. Any citizen settler may sell to commissioners up to 20 acres of his land for improvement, and retain preferential right of repurchase after improvement. Any settler can have 20 acres of land cleared at his own terms, or can get paid for doing it himself, and have 20 years in which to make all payments, or he can settle after three years' residence, or sell or assign his contract after two years' residence.

The char-pit method is simply an adaptation of the old and well-known method of making charcoal by burning in closed pits. It depends for its efficiency on concentration of heat.

The Char-Pit Method Takes an Old Idea and Uses It in a New Way

A ring of loose wood, bark, etc., is first laid all the way round the stump and as close to it as possible, and this is then covered to a depth of about six inches with earth, leaving a small opening in the direction from which the wind is blowing. The wood is then lighted at this point and left for about half an hour until the fire is well started, when this hole is covered up like the rest. As the fire burns back into the stump the blanket of earth must be kept right up to the stump so that the fire never has an opportunity to break out. The top of the stump doesn't burn, but is simply burned off cleanly at a point about level with the top of the earthen blanket.

When the top has been cut off by the fire and rolls off, the whole crown of the stump is covered with earth, and is left without much further attention until the roots have been burned out; and this is sometimes done to a depth of 15 feet or more.

The length of time required to destroy the stump

depends on what kind of wood it is, and whether green, dry, or rotten. The most stubborn stumps will disappear in two weeks at the most, while many are done away with in three or four days. In some cases fuel oil and coal tar have been used.

The experiments which have so far been successful have been with clay soil. This baked and hardened by the fire conserves the highest degree of heat. Sandy or stony soil sifts in, and puts out the fire or permits it to spread. Professor Sparks of Washington State College is now working out certain theories by which he expects to perfect a similar method adapted to other soils than clay.

To me there is something beautiful in this matter of state preparation of lands for the people—beautiful and splendidly revolutionary.

It is a principle which will grow. I have seen it in operation in the dry lands in the form of government irrigation projects; and in Canada I have seen irrigated farms watered, fenced, plowed, sown, and provided with house, well, and barns by the railway company which sold the land.

Why stop at irrigation? This question has been asked in Washington, and the answer was: "We will not stop at irrigation!" One of these days Michigan, Minnesota, and Wisconsin will ask the same question as to their cut-over lands. So will the stump-land States of the South. So will Oregon and California.

Ask the Question Yourself

Honestly carried on, in the hands of experts like those who built the Panama Canal and the great irrigation systems, government activities do this work more cheaply than can the weak and feeble settler. Moreover, the State can do it for millions who would never in the world do it for themselves. The settlers will be kept at productive work in their own old homes while the State on a huge scale carries on the unproductive pioneer work.

And if it pays to clear lands of stumps, why not of stones? New England may answer this question some day. And why not clear the land of water—that is, drain it? Florida is trying to answer this question, and it may well be pondered by Illinois, Missouri, Arkansas, Tennessee, Mississippi, Louisiana, Texas, Alabama, Georgia, the Carolinas, Virginia, Maryland, Delaware, and other States.

The richest unreclaimed lands in the world are in the tropics. The Amazon Valley might be the abode of countless millions if it were not for the fact that the clearing of the land is too expensive for the unaided individual.

The State of Washington, confronted by a problem of stumps too numerous and too large to be coped with by the private landowner, is taking steps which, followed by Brazil, Venezuela, Mexico, Central America, and the countries of Asia and Africa, not to mention our own States, may make the world immensely larger and happier and more prosperous.

Herbert Quick

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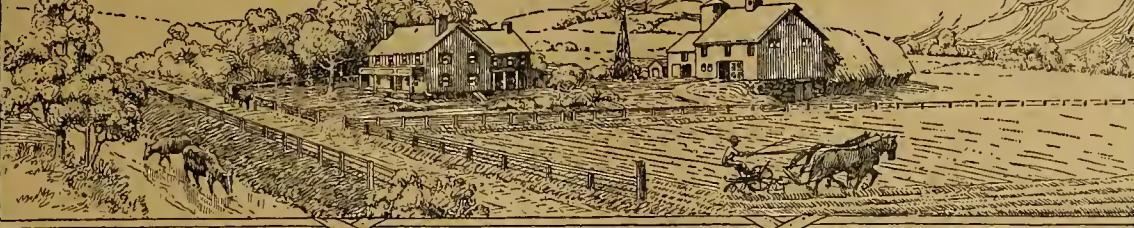
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U. S. Suspected and Saved

How Cholera-Sick Hogs Are Handled in the Principal Live-Stock Markets

By D. S. Burch, Associate Editor

THE benign face of Uncle Sam nearly always compels attention. He unmistakably shows his preference for American-made clothes, and in many ways helps to make us good and patriotic citizens. Sometimes we are inclined to think of him as a simple old chap who takes things easy, and unless reminded of him by a passing postman or mail wagon we might forget him entirely.

But I want to say that around the packing houses and stockyards of any large city there are plenty of reminders. A person has to have a government permit for nearly everything he wants to do. The government inspector-in-charge could, with very little training, qualify as Czar or Kaiser.

The Shote That Ran for Science

The middle of last November 25 per cent of the hogs received at the Kansas City stockyards had hog cholera. During the last week in October the cholera-sick hogs had run as high as 40 per cent of the total receipts. To handle such receipts fairly, promptly, and to properly dispose of diseased and dead hogs, is a job that can best be done by men who have plenty of authority and are not afraid to use it. From what I have seen, heard, and overheard, the government inspectors are doing that part of their work well.

At the South Omaha Stockyards, the percentage of hogs having cholera was less than the Kansas City figures, yet I saw pen after pen of dumpy-looking hogs that had been set aside by the government inspectors to have their temperatures taken. The method of inspection and handling is briefly this. As the hogs are let into the yards an inspector points out those that look sick, and they are put in "suspect pens."

The temperature of every one of these hogs is then taken. The normal body temperature of a healthy hog is about 102 degrees. Those showing a fever of four degrees or more (that is, having temperatures of 106 or over) are ordered killed in the yards. Their entire carcasses are made into grease or fertilizer.

The hogs have a day's reprieve, however, for if the owner desires it he may rest his hogs twenty-four hours, and if the temperatures of any of them fall below 106 degrees such hogs may be slaughtered subject to post-mortem inspection. A good many such hogs show only slight infection, and the meat brings "lard" prices. Then, too, all "suspect" hogs do not have cholera, but may simply be off feed and dumpy-looking as the result of worms, indigestion, or some trouble that does not affect the meat. If nothing more serious than that is the matter the whole carcass may pass government inspection. Furthermore, high temperatures may be due to nothing but excitement. This is most true in warm weather and with large hogs.

For an interesting demonstration of this fact I am indebted to Dr. G. R. Brown of the Chicago Serum Company. While I was inspecting their plant in Chicago, the question of the rise in temperature due to excitement came up.

Doctor Brown caught a shote weighing 60 pounds, and took his temperature, which proved to be 102.3 degrees. Then we chased that shote around a small pen for

two minutes and took his temperature again. It was 103.8. In just two minutes' time the temperature of that pig had gone up a degree and a half. The weather at the time was quite cold (40 degrees), and the pig was not greatly excited, for he quieted down at once, and was not even panting.

You can readily see from this simple test the importance of handling hogs quietly, and also why so many owners exercise the privilege of holding high-temperature hogs for a day. Only about 90 per cent of the

He was quick as lightning in arithmetic when money matters were concerned, but otherwise his education seemed limited. Through studying the physical symptoms of sick hogs he had trained himself for his work. He claimed that he rarely made money on Iowa or Illinois hogs, which he had found the worst for cholera, but he was pretty safe in speculating with sick hogs from other States, Nebraska being one of the best in his experience.

Here was a man whose field of operations was the few days' interval between ante-mortem and post-mortem inspection, but who, through close observation, had trained himself to profit by a picked-up education in handling sick hogs.

Almost Grease, But Saved by Serum

He did a small commission business on the side, he said, but I thought to myself how fine it would be if every stockman would profit by his example and study more carefully the health, habits, and disease symptoms of swine. A few weeks later when I was in Kansas, Doctor Schoenleber, the state veterinarian, remarked that the losses in hogs due to disease would not be nearly as great if people studied the hog as much as they do horses and cattle.

A still more interesting example of what a man can do with sick hogs, if he understands vaccination, is the work of J. F. McAmany, general manager of the Grain Belt Supply Company, Omaha. The company manufactures serum among other things, and has adopted a splendid way of showing that its serum is all they claim for it. In the first place, the serum is made under government inspection; and, secondly, it is tested commercially right in the South Omaha Stockyards where every animal is under government observation.

Mr. McAmany buys cholera-sick hogs in the yards, vaccinates them and then sells all that survive the treatment. Whenever possible, he finds out from the shipper how long they have been exposed, how long sick, how they have been taken care of, and other things likely to show the possibility of recovery if vaccinated. The facts learned concerning the hogs also have a bearing on the amount of serum and the method of treatment the hogs receive.

If a hog has not been exposed to cholera over a week, and has not been sick over three days, the temperature will usually be found to be gradually increasing. When the temperature is on the first rise, such hogs are considered a good risk, and Mr. McAmany pays 4 or even 5 cents a pound for them. After being rested and kept under observation for a day they are vaccinated with varying amounts of serum and virus. Their ration is reduced (as should always be done when a hog has cholera) and a surprisingly large percentage of the hogs pull through.

They are quarantined for three weeks; then they are dipped in a cresol solution, after which they are put in a disinfected pen. They are held there six hours, and after inspection are put in a disinfected car and shipped out as cholera-immune hogs for fattening or breeding. I saw about 100 of these hogs that had virtually been brought back to life, and they were a nice-looking bunch. Only a few showed the



This picture shows 1,150 people. If all the hogs that died of cholera in 1913 had been saved, their meat, at a pound a day per person, would have been sufficient to feed this crowd for 2,082 years

hogs ordered to the suspect pens in the corn-belt markets have cholera. The other 10 per cent either have some other disease or are healthy. Of course no inspector can detect every affected hog as a herd goes by him at a trot, nor would you expect every animal that looks dumpy to be diseased. The ante-mortem inspection is therefore only approximate. The post-mortem in slaughter houses tells the rest of the story.

To go back a moment to the hogs whose temperatures fail to go down after the animals are rested, I will explain that they are known as "grease" hogs because they are killed for grease. For such hogs, and also those that die in the yards, the packers pay about 1 cent a pound. Thus the shipper gets very little out of condemned hogs unless he can get a speculator to buy them. At the Union Stockyards of Chicago I met a speculator who in a small way made a specialty of dealing in sick hogs.

Self-Trained to Judge Sick Hogs He Makes a Living by It

If a bunch of "suspect" hogs did not look too far gone he would buy them for 2 cents a pound, sometimes 2 1/2 cents, and then take his chances on their temperatures going down and the meat passing government inspection. He is sure of his cent a pound for "grease," and as a small per cent of almost every bunch will usually pass inspection he makes enough on those to more than pay for his small losses on the others.

This man was not a veterinarian, and what he knew about cholera he had learned around the stockyards.

emaciating effects of cholera, and all of them had good appetites. Mr. McAnany's business in these restored-to-life hogs has averaged about 3,000 a month. Most of them weigh 100 pounds or more. They sell for about 2 cents over market prices, which of course includes the cost of vaccination. This little business—not so little either, only it seems small compared with the total business of the Omaha market—is useful in many ways. It advertises the serum made by the company; it brings in a fair profit; it enables a shipper of exposed hogs to get more than "grease" prices; and it is a source of reasonable-priced immune hogs for buyers.

But what I have related this case for is to show how the intelligent and prompt use of serum will save exposed hogs. If a man can take exposed or sick hogs that have undergone the strain of being shipped to market, excited by strange sights and sounds, living in infected pens (most stockyard pens are cholera-infected), and then save most of them, the stockman should be able to do it on his own farm. The stockman has the further advantage of more correctly knowing the time of exposure, and if the sick animals are separated and quarantined at once a good many of the hogs will not take the cholera at all.

Being a dumb brute, the hog has no way of telling just how long he has felt the cholera coming on or how bad he feels. His little pig eyes are not even very expressive, as are those of a horse or cow. So the task of diagnosing the advance of the disease is not easy. Most veterinarians rely solely on the general appearance of the hog, but that is not as reliable as the temperature. Mr. McAnany saved 20 out of 26 hogs none of whose temperatures was less than 106 degrees. This is considered very high, but the hogs were vaccinated when the temperatures were first going up.

How to Know a Sick Hog's Chances

When the temperature is falling the chance of saving a hog is poor. Some hogs are more susceptible to the disease than others in apparently the same condition physically, at least that is the common explanation. But Doctor Schoenleber of Kansas, whom I have already mentioned, gives a more satisfactory explanation.

"There are two rises in temperature," says the Doctor. "The first is due directly to cholera, and in the course of from three to five days the hog's temperature will rise to 106 or even 108 degrees. Then the fever subsides for a time, after which the temperature rises again, and during the course of this second fever the hog usually dies. If you vaccinate during the first rise in temperature you can often, in fact very often, save the hog. But after that, other complications besides hog cholera set in. The animal's constitution is weakened, and the serum is not a protection against all these other weakening causes. It protects against cholera and nothing else."

I think the doctor is right. I have known him for a number of years and he does not give an opinion till he has something definite—in this case experiments—back of his statements.

Furthermore, the government inspectors at Omaha require Mr. McAnany to fill out three sets of reports on his business with "suspect" hogs, and these reports, including answers to 34 questions, call for the temperature of every hog.

Mr. McAnany's observations agree with those of Doctor Schoenleber, and as they include many thousand hogs I should say that the stockman who takes and studies the temperatures of hogs coming down with cholera can save himself the loss of many hogs.

A stockman in southwestern Missouri had 300 sick hogs, and called in a veterinarian to vaccinate them,

which he did. Every one of the hogs died, and the job cost \$250, which I should consider must have made the stockman at least sick.

There's Always a Reason for Everything

Doctor Blanchard, one of the officers of the Missouri Valley Serum Company of Kansas City, cites two interesting cases. He personally vaccinated 167 sick hogs not one of which was able to eat, or to walk without staggering. To his surprise 160, all except 7, got well. Another time he vaccinated 216 hogs apparently just becoming sick. These had good appetites and scarcely showed the disease, but 64, more than a fourth of them, died. He used the same serum and did the work in the same manner. The only explanation that will account for such cases is the temperature explanation just given. If you can't save all your hogs it tells you which you can save, and saves the cost of vaccinating those that are too far gone.

The post-mortem examination of a hog that has died of cholera is important in arriving at an idea of how cholera works, and also in being sure that cholera instead of some other cause has killed the beast. The kidney is the surest sign of all. Take the kidneys and remove the outer skin just as you would peel the skin off a ripe peach. If there are little red spots or blotches on the kidney, giving an appearance resembling the shell of a turkey egg, the hog has had cholera. The meat is often reddish or purplish.

Hog cholera does not affect people at all (except financially), and if you should accidentally eat the flesh of a hog affected with cholera it would not give you that disease. But still the meat is diseased and, as already suggested, other complications set in when a hog is sick with cholera. In packing houses under government inspection, hogs showing acute symptoms of cholera are condemned for all purposes except fertilizer and inedible grease.

If the symptoms are only slight some portions of the carcass can be rendered into lard. The high temperature at which lard is rendered makes this disposition of the carcass absolutely safe. Government inspection is a perfect safeguard, but in small cities and villages not having meat inspection I have no doubt that a good many cholera-infected hogs are slaughtered and sold.

The large packing houses are interested, I have found, in all campaigns calculated to improve the quality of live stock. They are well informed in the matter of cholera control for the reason that fully half of the serum used in immunizing hogs is made in packing-house districts.

But there is one thing about the hog business the packing houses have strongly objected to. It happened in this way:

One of the largest packing houses in Iowa is the T. M. Sinclair Company of Cedar Rapids. Iowa has been very active in its campaign against cholera. In fact, the government experimental laboratory where the serum treatment for cholera was discovered is located in Iowa just a little way from Ames. Iowa farmers have used lots of serum. A state law requires that the serum made in the state plant be sold directly to the owner of a herd, and naturally before a person becomes expert in vaccinating hogs he may make some mistakes.

Sometimes Cooked Hams Came Back

So if anything wrong happened you would expect that such a packing house as the Sinclair Company would be among the first to know about it. That is just what happened, and this was the trouble: One day a butcher who had got 7 of their hams, returned 3 of them with the complaint of abscesses in the meat.

"For quite a while we couldn't explain it, and didn't know what to do," said Mr. S. E. Sinclair, president of the company, in going over the case, "but finally we took the matter up with the state veterinarian (of Iowa) and learned that the abscesses were caused by an infection that started when the hogs were vaccinated against cholera. I got in touch with Armour, Swift, Morris, and several other large packers, and found that some of them had received similar complaints."

Mr. Church, the slaughter-house superintendent, gave me further particulars. "Yes, we had a peck of trouble over those abscesses," he said, "let's go into the curing-room."

Mr. Hamilton, the government inspector, who had made most of the observations, explained the trouble briefly:

"When we got to looking for abscesses," he said, "we found about 15 hams in every 100 had them; or, in other words, 15 hogs out of 50. This was in the fall of 1913. There would be a bad spot on the surface, and when we cut into it we would find a whitish mass about the size of a walnut. It was nearly always close to the bone. But you had to look sharp to find them. Sometimes people would send back an abscessed ham all cooked; it was only when they cut into it that they found the ham wasn't right. The way we disposed of the hams when we caught them before they went out was to cut away all the meat around the abscess and make the sound meat into sausage."

Whereupon "Andy," who had charge of the curing-room, ventured the assertion that the ham was the most valuable part of the hog, and while it made excellent sausage it was a heavy loss for the packers to stand. I didn't care to start a debate with "Andy" as to whether the packers actually stood the loss or whether the hog raiser indirectly paid for it when he found the market price shaved a little.

But Only a Few Complaints Lately

But this is true. As most packing houses are managed it is impossible to trace the hogs after slaughter back to their original owners, so the loss from bad meat (except what is killed separately) is a general loss that all shippers must stand.

Most veterinarians I have talked with attribute abscesses in hams to impure serum; the serum manufacturers lay it to careless vaccination and to infection following it. I think there is no doubt but that a herd of run-down hogs is more likely to develop abscesses as the result of vaccination than a herd of vigorous animals whose blood quickly absorbs the serum and heals the wound made by the needle of the syringe.

Still, the packers have been glad to see the growing tendency toward vaccination in the fold of the neck or in the armpit. The results obtained seem to be just as good. Greater skill in vaccination, purer serum, and a growing understanding of the proper care of hogs after treatment are also noteworthy signs of the times. As a result, only a few rare cases of abscessed hams have been found lately in spite of the much greater number of hogs being vaccinated every year.

The Cudahy Packing Company, Cudahy, Wisconsin, had no complaint whatever. A. F. Stryker, secretary of the South Omaha Live Stock Exchange, said he hadn't heard of a specific case of abscessed ham for months back; neither had the president of the exchange heard of one. C. R. Canon, who has charge of the hog department for Clay Robinson & Company, Kansas City, knew of no recent cases. Kingan & Company, packers in Indianapolis, had had one or two complaints a long time ago, but they considered the trouble now not worth considering commercially.

Ye Final Teste

Being Ye Most Solemn and Veracious Ballad of John Henry

By Berton Braley

JOHN HENRY was a college man
Of Herculean mold,
A hammer thrower great was he,
A footballe player bold.

Atte baseballe he was eke no slouche,
Atte golf he was a crack,
He did excell at rowing too,
And also on ye track!

One summer at ye close of school,
Whenas ye days grew warm,
John Henry cried, "I will go forthe
To labor on a farm.

"Yea, I will be a hired man,
Engaged in husbandry,
Accumulating strength and tan,
And shekels too, maybe."

Ye farmer hailed him with much joy
And hired him on ye spotte,
And sware by all his cows and pigges
To show him what is what.

"Oh, he shall rise before ye dawn,
And swink ye lifelong day;
And he shall find how toil and work
Are different from play.

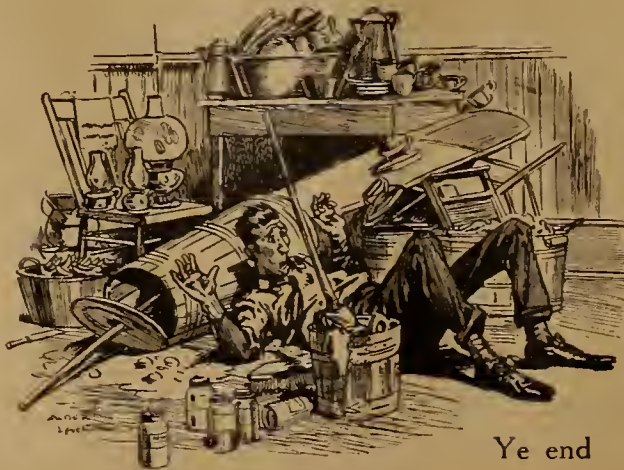
"His brow shall sweat, his backe shall ache,
With harvest work and such.
I guesse I'll show this ath-a-lete
That he ain't such a much."

John Henry plowed, John Henry sowed,
John Henry harrowed too,
He mowed and pitched ye new-mown hay
With muscles strong and true.

He labored in ye harvest field
Whenas ye sun beat down;
He wore ye husky farmer out,
This college boy from town;



Ye beginning



Ye end

He worked all day—yet danced each night,
"This job's a cinch," quoth he,
"Lay on Macduff, for I am tough,
Ye cannot weary me."

Then uppe there spake ye farmer's wife,
"John Henry," then she cried,
"Ye hired girl hath gone to town,
I want your help inside."

She bade him sweep, she bade him dust,
And help to wash ye duds;
She bade him feed ye pigs and chicks
And peel ye dinner spuds.

She made him cook and scrub ye floors,
And wash ye dishes too;
She kept him always on ye jump,
With never rest in view.

And when ye housework all was done
"John Henry," then said she,
"There is ye milking yet to do,
And ye must milk with me."

John Henry he was worn and wan,
And pale of face and browe,
But gallantly he took his paille
And sat beside ye cow.

He drew ye milk from bossies three,
He tried to make it four,
Bnt, lo, his mightie arms grew limp—
He fainted on ye floor.

'Twas long before they brought him to,
His strength had all but fed—
John Henry, college ath-a-lete,
Was really sick abed.

Yette when she'd helped to tuck him in,
Ye farmer's littel spouse
Went trotting blithely to ye barn
And finished up ye cows!

Clearing Lands by Char-Pitting Them



The smouldering fire is here being covered with clay to force it to burn to the roots' ends, for when the stumps are burned off at the top of the ground the job is but partly finished

A Method Used in Washington State

Photos by W. H. Ballou



The stump is burning underneath. It will soon break off at the surface when the fire, if covered, spreads to the ends of the roots



The citizens of Washington have realized the necessity of making use of their lands. Their work suggests what might, to the advantage of everyone, take place in many other States



The top of the stump is completely burned off. The fire is working down the roots. In other than clay soils this would not be possible with our present knowledge of the char-pit method

EDITORIAL NOTE: On page 2 Mr. Quick discusses details of the work being done in Washington State to clear-deforested lands of their stumps. By the char-pit method two men destroy fifty big stumps every twenty-four hours. The most important part of Washington's progress is represented in her Logged-off Land Law. Page 2 of this issue tells why.



The remains of a gigantic stump with underground roots still smouldering. The most stubborn stump will disappear in two weeks at the most. Many last only three or four days

Publicity for the Pumpkin—Let Us Get It

By Lewis E. MacBrayne

A MAN came to me during the past summer (I am the county editor of a newspaper that serves a large number of farming towns) with this problem: He had observed Swiss chard growing in many kitchen gardens in the suburbs of the city, and since there was none for sale in the markets, it occurred to him that he might raise a crop with profit. He had produced the crop, but the marketmen would not buy it of him.

"They will sell a ton of spinach, and this is a green that is cooked in the same manner, and naturally follows it," he told me. "But because they have never handled chard they are afraid of it."

We sat down together and in five minutes mapped out a little advertising campaign that cost less than \$10. We began it by informing three city markets that we were about to advertise that Swiss chard, raised on a particular farm, could be purchased from them. Two of the proprietors told us to go ahead. The third told us to "go to thunder."

Everybody Knew About It

Having started our paid advertising, we induced a city newspaper to print a brief article discussing the case of the farmer who was obliged to create his own market. They did not object to it because the line of argument held in it the possibility of a new line of advertising. We also instructed the clerks in the three stores to look intelligent when anybody called for chard, and to keep it out of the sun so that it might have a chance to make friends. The campaign was a success. Before the advertising ceased women were calling up the farmhouse on the telephone to learn how to cook the vegetable. We had created the demand.

When I speak of publicity for the pumpkin I merely make use of a certain phrase to attract your attention as a reader. To attract is one of the first requisites of publicity, and that applies with equal force to an attractive box of vegetables or to a properly arranged market window. In a fairly extensive experience I have had an opportunity more than once to see an industry built on almost nothing but intelligent advertising.

A city merchant with a large business and an advertising account running into the thousands said to me recently, and with some irony: "If I could get the free publicity that is being given to the farmers I would increase my business 20 per cent."

I asked him to be more explicit, and he called off the list of agricultural journals, farm sections in metropolitan newspapers, and free lectures by agricultural colleges. "Nobody is telling the story of the young man who on a \$2,500 dry-goods store is able to support his wife and seven children," he said. "No-

body is printing the pictures of struggling young business men, or telling them how to avoid mistakes in management. I'm not objecting; I am only saying that if we could get this publicity we would know how to turn it to account, and the farmer does not. What he needs is a sales manager."

When next I sat down with a group of farmers we talked this over, and I tried to show them just what the merchant meant by it. For example, all the newspapers printed an Associated Press dispatch that day to the effect that meat had gone up again; this time because of the war. The price of vegetables, as it happened, had been going down for a fortnight, chiefly because everybody had a good crop and was innocently dumping it upon the market.

"Now let us all chip in two or three dollars apiece and see what we can do to hold up prices," I suggested.

"And get prosecuted for combining in restraint of trade," said a farmer who had told me a moment before that he had a thousand barrels of cabbage ready for the market.

"You miss the point," I replied, and outlined the plan.

It cost us \$3.50 for 50 window cards that read: "Fresh vegetables from near-by farms. Buy now! Cost less than meat. Healthful in hot weather."

Each man agreed to deliver two of these cards to each market where he sold produce, explaining that the farmers were trying to create a better demand for their goods. It was also agreed that all vegetables were to be washed and graded, boxed attractively, and that salesmen were to be asked to do their part.

Upon this latter point I had already collected some interesting information. Salesmanship as it applies to vegetables is very poor in the average market. If a clerk never ate an eggplant in his own home, or never heard of the use of kale as a green late in the season, or has no personal knowledge of Brussels sprouts, he is not going to lift his finger to sell them.

It Worked Out All Right with Us

Well, this little plan for publicity also worked out all right. The grocer and the butcher really took kindly to the suggestion that his clerk take an intelligent interest in the sales. He was accustomed to the agent for manufactured food products coming to his store for window displays, ornamental signs, and a free distribution of samples to create a demand for his goods. If the farmer had begun to learn the lesson he was quite willing to treat with him as a salesman also.

Every farmer and fruit grower will agree with me

that the real problem of marketing is to sell the bumper crops. Prices not only go down at such a time, but, as in the case of our recent apple crop, the dealers and the public generally refuse to absorb the entire yield of field or orchard. In one county in Massachusetts we had in 1913 the best peach crop in ten years, and as the county had a population of 700,000, with an even larger buying population just beyond, everybody expected a very profitable season with his fruit. But two weeks ahead of the native crop, Delaware and Connecticut peaches began to come into the State by the carload.

Now the fruit dealers and the marketmen in the eleven cities of this county know how to move just one peach crop in a season. When it comes they line the front of their shops with the loaded peach baskets, and tell their customers that it is time to buy the fruit. They did this with the crop from outside the State, and sold it to the last basket.

Peaches Everywhere And No Salesmen

Then along came the peach growers from the nearby towns, their wagons loaded with the fruit. They were willing to sell a little under the crop that had paid the freight, and their fruit had the color and the flavor. But the dealers showed no interest at all. "The public has done with buying peaches," they declared: and instead of buying baskets in fifty lots they took half a dozen, and set them down inside their shops. Within two weeks I saw prime peaches being fed to the hogs, or left to rot on the ground, so discouraged were the owners of the orchards.

Yet who was really to blame? Not a dollar had been spent to create a demand for the native crop. Not a single co-operative committee had sought to interest the public or the dealers. It had been haphazard, individual selling, which resulted in unorganized failure.

At one of the county fairs that I attended during the past season, \$100 was offered in prizes for the best truck loads of vegetables and fruits raised on a market-garden farm and intended for the city markets. One of the prize-winners sold his entire load to the buyer for a city department store, who stipulated that it should be set up as shown at the fair. He said that it would boom the sales in his food department.

Now, that was the very thing that the committee had in mind in offering the prizes. It wanted to teach the farmer that there was a value in publicity for the pumpkin or any other product. The department-store buyer caught the idea at once, and carried it back to the city to turn to his own account.

After all, this is only the fringe of the subject. What the American farm needs most of all is salesmanship, and this is based on publicity.

THREE REASONS

Each With Two Legs and Ten Fingers.

A Boston woman who is a fond mother writes an amusing article about her experience feeding her boys.

Among other things she says: "Three chubby, rosy-cheeked boys, Bob, Jack, and Dick, respectively, are three of our reasons for using and recommending the food, Grape-Nuts, for these youngsters have been fed on Grape-Nuts since infancy, and often between meals when other children would have been given candy."

"I gave a package of Grape-Nuts to a neighbor whose 3-year-old child was a weakened little thing, ill half the time. The little tot ate the Grape-Nuts and cream greedily and the mother continued the good work, and it was not long before a truly wonderful change manifested itself in the child's face and body. The results were remarkable, even for Grape-Nuts."

"Both husband and I use Grape-Nuts every day and keep strong and well and have three of the finest, healthiest boys you can find in a day's march."

Many mothers instead of destroying the children's stomachs with candy and cake give the youngsters a handful of Grape-Nuts when they are begging for something in the way of sweets. The result is soon shown in greatly increased health, strength and mental activity.

Name given by Postum Co., Battle Creek, Mich.

Look in pkgs. for the famous little book, "The Road to Wellville."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

We Shall Need Money

By W. S. A. Smith

WE HAVE a number of bills pending on rural credit, but from what I, as an Iowa farmer, see or hear of them they don't fit our condition.

These bills are all patterned in a way on the German and French system: long-time loans, twenty-five to fifty years on the amortization plan—i. e., if a loan is made at 6 per cent, 4 per cent pays the interest and 2 per cent gradually wipes out the principal. Theoretically this figure is good, but it will be a great problem to take the German plan, which suits a country no larger than some of our States, and apply it here to a country which extends from the Canadian to the Mexican border.

This is still a new country, and our farmers are not yet farmers but miners merely, taking from the soil the fertility God Almighty put there.

When a loan is made in Germany it is made with the knowledge that at the end of thirty or forty years the land is still as fertile, whereas here in the corn-belt States if farming is carried on for the next forty years as it has been in the past the security on a long-time loan will be pretty thin.

The Waste Will Save Us

We have a great deal of wealth among our Iowa farmers—but how are they accumulating this? At least 70 per cent bought their land at from \$40 to \$60 per acre, and on this valuation with the help of a family they are not only making but saving money. These men are not making money from their farming but from their investment. How about the farmer who buys in at the present valuation of \$130 to \$200 per acre? Can he possibly increase his crops to such an extent as to overcome the difference in price between what the land is now worth and what his predecessor paid, to say nothing of the decrease in fertility?

I know he cannot. His only hope is in utilizing the waste on the farm; and to do this he must have tools and an outfit to work with, and this costs money. What is worrying him is how to get it, for it is only in the last twelve years since Iowa lands have doubled in value that a different system of credit is necessary.

I sold a farm two years ago—300 acres for \$41,500. The man who bought it had \$20,000 in money which he has earned. Of this, \$10,000 was paid down on the purchase, \$5,000 for a farm outfit, and \$5,000 used as working capital.

After he had the farm a year he came to me and said: "I'm up against it. I need to make this high-priced land pay money for hog-tight fences, silos, etc., and to utilize the waste; and the mortgage you hold for \$30,000 on the farm bars me. Six months' paper with a verbal promise of renewal is no good to me."

Iowa is an agricultural State. The growth of her cities depends absolutely on the growth and development of the country around them, and yet how hard it is to make her business men understand this!

Here in Sioux City a few years ago a million-dollar fund was raised to promote new industries. The merchants and business men pledged their credit through the Commercial Club, and the

local banks agreed to carry the paper of new industries when so endorsed. This gave us a little notoriety and two small factories. If this million-dollar fund had been used in making eighteen months' to two-year loans in Sioux City's trade territory to farmers for permanent improvements, such as hog-tight fencing, cement silos, drainage, alfalfa seed, etc., the bankers and merchants would have had just as good security for their money and the factories would have to come to Sioux City a great deal faster than they are coming now.

What the farmer needs is something better than a verbal promise that his six months' note will be renewed.

He wants to know that just as long as his security is good his loan is good. Something between a six months' note and a five-year mortgage. A merchant gives his note for six months on a bill of goods and expects to sell his goods and meet his note. A farmer buys a carload of cows and knows it's nine months after they are bred before they have their calves, and fifteen months after that before the calves are salable.

You can put all the agricultural experts in the country into Iowa, advising more live stock on the farms, but there have been too many farmers bitten on six months' paper for their teachings to have any great effect. Yet it is absolutely necessary to keep more live stock on our Iowa farms, for the farmer's greatest asset is fertility.

When the older countries began to fill up after the wars ending about 1812, the farmers chuckled and said the population was increasing. They must have our beef and grain. We were bound to have high prices. What followed? Bread riots and free trade. These countries were swamped with cheap beef and grain from this country, and the German and French land-loan system was formed for self-protection. We have the same condition here now.

Tariff is Off to Stay

Up to 1912 we had an advancing market on everything, and Mr. Consumer began howling about the cost of living, and the tariff was taken off beef and grain. It's no use blaming politics for this. It was a condition that had to come, and farmers must realize that Mr. Consumer will see to it that the tariff will never be put on again.

I believe the next two years will be the greatest years the American farmer has ever known, but after that when the war is over and our shipping laws are revised,—and Mr. Consumer is going to demand that too,—this country will be flooded with Argentine beef and grain, for the freight will be less from South America to New York than from Chicago to New York. Beef will be a luxury in the countries now at war, and beef will naturally come to the highest markets—and the highest market will be here.

When that time comes the farmers will need better rural credit than they have now, and need it badly.

I do not mean by this that the bottom is going out of American farming, but I do mean that the salvation of the American farmer is not in raising larger crops but in utilizing the waste, and he must have credit to enable him to do so.

Will the Honey-Bee Settle the War?

By Lewis L. Winship

YOU will possibly be surprised to learn that the war in Europe is connected with the bee industry, but it is. The following is from "The Boys' World":

The Hague has discovered a secret long cherished in the war department—the use of bees as messengers.

No longer will the aid-de-camp spur his horse through shot and shell to carry the message to the front. Instead he will don his gloves and mask and, going to the portable beehive, seize one of the faithful little insects and send the well-trained messenger through the air.

The bee, like the carrier pigeon, guided by his marvelous instinct, returns to the hive from wherever he may be liberated. Tiny dispatches, which can be deciphered with the magnifying glass, can be attached to its breast.

But something better still has been found. By an ingenious process the wings of the tiny insect are sensitized, and by means of microscopic photography the message is imprinted on the wing, doing away with all extra weight.

The people of Europe are certainly adding injury to insult when they wish to write messages all over the poor bee.

The bee has borne the brunt of burden for years, ever since the creation of the world. We hear of the people of Jerusalem living on milk and honey even before

the advent of Christ. The citizens of the United States when they hear the word honey think of the sting instead. Now if these same people were in the poor bees' place they too would resent having to supply the whole world of walking giants with honey and wax, besides what they had to gather for their own use. The reason that the bee stands being made the goat is not because he is doing it for the people, but because he enjoys himself most when busy.

When a honey flow is on, the bee is a very congenial fellow, but when nectar is scarce and there are a hundred bees to every blossom his disposition changes and he becomes surly, looking into every crack and crevice for something sweet to convert into honey.

Mr. Bee keeps at his pillaging until cold weather shuts him off, and while on these trips anything he comes in contact with is stung.

And now let us beekeepers hope that by the bees' taking up this messenger work they may get back the peoples' respect which they have lost while on their pillaging expeditions. Also that the people of Europe may learn a lesson of thrift and industry from the little bee, go to work, stop fighting, turn about and think more of peace than of war.

HORSE COLLAR PADS

TAPATCO

REGISTERED TRADE-MARK BRAND

Means Greater Horse Power

You can't walk as far with a shoe that chafes as you can with one that fits.

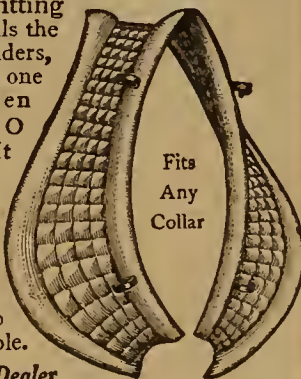
Your horse can't do as much work with an ill-fitting collar that galls the neck and shoulders, as it can with one that has been TAPATCO padded to fit properly.

These porous pads afford ample ventilation. Absorb all sweat. Keep horse comfortable.

Ask Your Dealer

PADS FOR HORSES

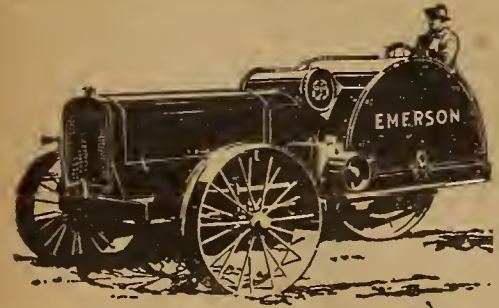
The American Pad & Textile Co.
Greenfield, Ohio



ELECTRIC No more high lifting or pitching. Saves you work and lightens draft nearly 50%. Don't rut fields or roads. We also furnish Electric Steel Wheels to fit ANY wagon. Wheels can't dry out or rot. Send for free book of facts and proofs.

Steel Wheel Handy Wagons Are Big Money SAVERS!

Electric Wheel Co.,
13 Elm Street,
Quincy, Ill.



EMERSON Farm Tractor

Model L—12-20 Horse Power

A four-cylinder, 2-speed light weight tractor of great power, suitable for any size farm. Will pull the implements you now have on your farm—gang plows, harrows, mowers, binders, manure spreaders, road drags or graders. Will also operate your ensilage cutter, feed grinder, circular saw, etc. Does more work than horses—costs less and is so simple anyone can run it.

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Emerson-Brantingham Implement Co. (Inc.)
531 S. Iron Street, Rockford, Illinois

Now! These New Engine Prices

Direct from Factory to User	2 H-P, \$34.95
	4 H-P, 69.75
	6 H-P, 97.75
	8 H-P, 139.65
	12 H-P, 219.90
	16 H-P, 298.80
	22 H-P, 399.65

Portable Engines Proportionally Low.

WITTE Engines

Kerosene, Gasoline and Gas

Stationary, (skidded or on iron base), and Mounted Styles. Standard the world over for 27 years. Better today than ever. Why pay double price for a good engine, or take a poor or doubtful one for any price, when the WITTE costs so little and saves all risk?

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On Efficiency and Durability.

Direct from Factory to Users, for cash or on easy terms, at prices hitherto unheard of, for engines of these merits: Long-wearing, semi-steel, separable cylinders, and four-ring pistons; all vertical valves; automobile ignition; spark shift for easy starting; variable speed; and others, without which no engine can now be high-grade. I am simply sharing my manufacturing advantages with engine user-users—asking only one small factory profit.

New Book Free The most complete and understandable engine book in the business. Gives the "inside" of engine selling as well as manufacturing. Shows my liberal selling plans with complete price list. Write me your full address for my prompt reply.

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RUNS EASY No Backache Weighs only 41 lbs. Sawed Down Trees

OAK and HICKORY BY ONE MAN. Proven by sworn witnesses. It's KING OF THE WOODS. SAVES MONEY and BACKACHE. SPRING PRESSURE and GUIDE, adjustable to boy or man, now used on end of saw, a BIG 1915 IMPROVEMENT, KEEPS SAW FROM FLOPPING and makes thin, straight cut. Send for free catalog X12 showing LATEST IMPROVEMENTS. First order gets agency. Folding Sawing Mach. Co., 161 W. Harrison St., Chicago, Ill.

Only \$2 Down One Year to Pay!

\$24 Buys the New Butter-fly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

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ASK FOR AGENCY TERMS

Send for BIG FREE CATALOG which shows seventy-six makes and models of 1915 ATCO REBUILT AUTOS AND TRUCKS. It explains how our cars are sold at low prices on EASY PAYMENT TERMS. We ship anywhere on these terms, and can refer to ATCO owners in Every State. An order placed NOW, with \$50.00 deposit, secures any standard make, 1915 ATCO REBUILT and GUARANTEED FOR ONE YEAR, on our future delivery. EASY PAYMENT PLAN.

AUTO TRADING CO. INC. 8914 CENTER AVE. PITTSBURGH, PA.

30 DAYS FREE TRIAL

and freight prepaid on the new 1915 "RANGER" bicycle. Write at once for our big catalog and special offer.

Marvelous improvements. Extraordinary values in our 1915 price offers. You cannot afford to buy without getting our latest propositions. WRITE TODAY.

Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our liberal terms on a sample to introduce the new "RANGER".

Tires, equipment, sundries and everything in the bicycle line half usual prices. Factory prices on Motorcycle and Automobile Supplies.

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RUN THIS ENGINE for 30 DAYS FREE

Detroit Kerosene and Gasoline engines at YOU on 30 days FREE TRIAL; guaranteed 10 years. Economical horse power, low prices; farmer agents wanted everywhere. Engine operates on gasoline, kerosene, alcohol, distillate or naphtha. Saws wood, grinds feed, churns, pumps, separates, makes light any job around the farm. Only 3 moving parts, no cams, gears, sprockets, etc.

Send for "Common Sense Power Book."

Detroit Engine Works,
133 Bellevue Ave., Detroit, Mich. 503

No Matter What Your Dairy Ration May Be Make it —

2/3 SCHUMACHER

Balance 1/3 - Any Good Concentrate
and You Will Make
MORE MONEY



Valdessa Scott 2nd
—The First
40-Lb. Cow
in the
World

Produced in One Week 41.875 Pounds of Butter
The Quaker Oats Company, Chicago, Ill.
Gentlemen—During the past two or three years we have been feeding your Schumacher Feed and have secured splendid results. Schumacher was incorporated in the ration of Valdessa Scott 2nd during her wonderful result producing test. Used as a base with a good protein concentrate it is a winner.
Yours truly, B. Myer, Owner
FINDERNE STOCK FARM, FINDERNE, N. J.



Castlemain's Nancy 4th
—World's
Champion
Two Year
Old
Ayrshire

Castlemain's Nancy 4th averaged for the year 39.7 pounds per day and for the 12th month she produced an average of 39.5 pounds per day. Value of milk sold at 6 cents per quart wholesale, \$408.75. Cost of feed, \$131.01.



Auchenbrain Brown Kate 4th
—World's
Champion
Ayrshire
Cow

Produced 23,022 Pounds of Milk in One Year
The Quaker Oats Company, Chicago, Ill.
Gentlemen—We have been feeding your Schumacher Feed to our Ayrshire and Jersey cows which are on test for Official Records, and like it mixed with other grains. Our World's Champion Ayrshire Cow, Auchenbrain Brown Kate 4th, who has just finished her year's work with a record of 23,022 lbs. milk and 1,080 lbs. of butter, was fed Schumacher Feed as part of her ration. We find that Schumacher Feed is one of the best feeds we have ever used in our mixtures.
Yours truly,
E. S. Deubler, Supt., FENSHURST FARM, Narberth, Pa.

You want "best results"—Mr. Dairyman, don't you?

You want *greatest* milk yields—*lowest* feed costs—*fewest* "off-feed" conditions. You want *stamina* in your cows to withstand long and forced production; normal breeding results to replenish your herd. You've got to have all these if you make money. And **YOU KNOW** the right feed—one that will keep your cows "up and coming" every day—is absolutely essential.

Here it is and *we'll prove* it if you will use this simple feeding plan:

Take the high protein concentrates you are now feeding, such as Gluten, Oil Meal, Distillers' Grains, Malt Sprouts or Blue Ribbon Dairy Feed, and make your ration one-third of any of these or a combination of them and then make the balance—two-thirds SCHUMACHER FEED. If Cottonseed Meal is used make the ration three-fourths Schumacher and one-fourth Cottonseed Meal.

That's all—you will have a ration that *beats anything you ever used*, not only for "best producing results" but for "best maintenance results."

Schumacher Feed

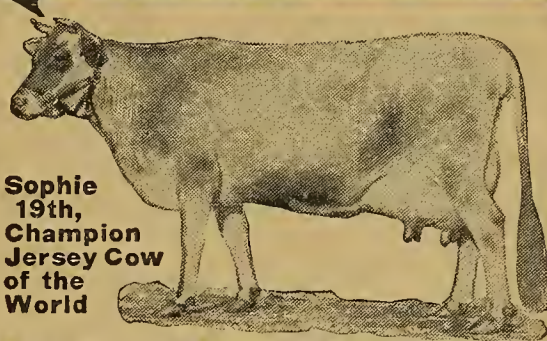
The Record-Making — Record-Breaking Feed of the World's Champions

is not an ordinary feed—it is an extraordinary feed. It supplies that energy—that *unseen power* so necessary to the milk-making machinery of the dairy cow, and in addition builds up her physical powers so adequately, that it is really a *wonder feed*. In conjunction with high protein concentrates, as suggested above, it has no equal—*nor anything approaching it*. The fact that practically every World's Championship Record—Holstein—Ayrshire—Jersey—has been made on SCHUMACHER FEED, proves its unquestioned superiority.

Now about the proofs that SCHUMACHER is a winner.

Read This—
The Quaker Oats Company, Chicago, Ill. Narberth, Pa.
Gentlemen—You will probably be interested in the record of our new World's Champion two-year-old Ayrshire—*Castlemain's Nancy 4th*—28520. She produced in the year 14,494.8 pounds of milk and 644 pounds of butter, and carried a calf over seven months. She was fed a grain ration which contained more of your Schumacher Feed than any other ingredient. We had such good results with your Schumacher Feed with our World's Champion Cow—*Auchenbrain Brown Kate 4th*—who produced 23,022 pounds of milk and 1,080 pounds of butter in one year, that we have since fed it to all of our test cows. Yours very truly,
E. S. Deubler, Supt., FENSHURST FARM

Now read the other proofs given herewith. Could you ask for better proofs—for better results? What is *best* for the World's Champion cows, surely is *best* for yours. Try it—you have nothing to risk—all to gain. *Schumacher Feed* is composed of finely ground products of kiln-dried corn, oats, barley and wheat, so skillfully blended, that it *ideally rounds out* a ration, when mixed as suggested—two to one—which will be surprisingly gratifying to both you and your cows. Your dealer will be glad to supply you. If he can't, write to us.



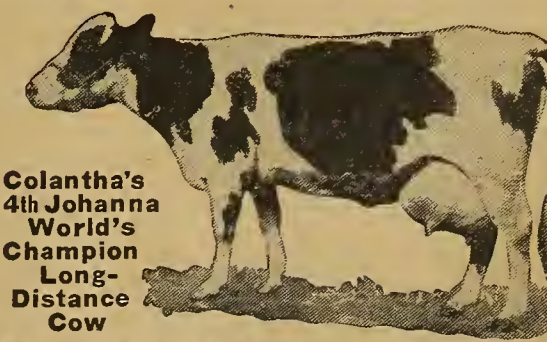
Sophie 19th,
Champion
Jersey Cow
of the
World

Produced 1,175 Pounds of Butter in One Year
The Quaker Oats Co., Chicago, Ill.
Gentlemen—It will probably interest you to know that we have been feeding Schumacher Feed to Sophie 19th, of Hood Farm, 189748. She finished her last record January 20, 1914, which makes her the Champion Jersey Cow of the world, and stamps her the greatest dairy cow living or dead. We consider Schumacher Feed a splendid feed for dairy cows, and a strong factor in increasing the milk and butter production.
Very truly yours,
J. E. Dodge, Mgr. HOOD FARM, Lowell, Mass.



Johanna De Kol Von Beers,
The Second
40-Lb. Cow
in the World

Produced 40.32 Pounds of Butter in One Week
The Quaker Oats Co., Chicago, Ill.
Regarding Schumacher Feed, will say as a feed for dairy cows or young cattle I know of no feed equal to Schumacher. It certainly contains all the ingredients necessary to put the finish and gloss on animals and more than that the results obtained through the pail makes it the cheapest feed that I have ever fed. Johanna, in fact all my cows are fed every day a ration of Schumacher Feed. To any one feeding cattle for show, I would especially recommend Schumacher. Yours truly,
T. E. Getzelman, Prop. BROOKLINE FARM, Hampshire, Ill.



Colantha's 4th Johanna
World's
Champion
Long-
Distance
Cow

Produced 27,432.5 Pounds of Milk in One Year
The Quaker Oats Co., Chicago, Ill.
Gentlemen—Replying to yours of the 3d, we are making Schumacher Feed one-third part of our herd ration and we are getting results. Several of our cows are milking up to over 75 lbs. per day with this part of our grain ration.
Yours very truly,
W. J. Gillett, SPRINGDALE STOCK FARM, Rosendale, Wis.

The Quaker Oats Company, Chicago, U. S. A.

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
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YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, Editor

January 16, 1915

There's Another Way

THE prospects for rural-finance legislation in Congress this season have gone glimmering. But there is no reason why any State cannot establish a system of its own with every prospect of success.

All the facts which have been accumulated in the study of the matter are just as useful to the state legislator as to the Senator or Member of Congress.

Wisconsin and New York have made a start.

There are some drawbacks to the system of having forty-eight States instead of one all-powerful central government, but there are advantages also. One is that any State may make of itself an experiment station in lawmaking.

We need experiments in rural finance. The States have a great opportunity in this respect.

A Dual-Purpose Bombshell

THE fact is clearly proven that the dual-purpose breed is the most lucrative type, and that the theory that beef and milk production cannot be profitably combined in the same breed is most erroneous and unreliable."

"Practical experience and demonstrations by many different state experiment stations have proven . . . that on the arable farm the dual-purpose cow is more profitable than the specialized beef type."

"There is a wide and ever-increasing demand among the farmers of America for a good, profitable, dual-purpose breed of cattle. The price of feed has become so high that the farmer can no longer afford to keep a cow that gives but enough milk to raise a calf for beef purposes, for in that case the calf has to show a profit not only above the cost of its own keep but above the cost of its dam's keep also."

"If, on the other hand, instead of being a heavy expense, a cow can produce enough milk to properly raise its calf and to show a substantial profit for butterfat besides, it will be seen that the profits from beef production can be very greatly increased."

"Tests conducted by the Michigan Station show that the dual-purpose steer averaged \$41.27 more net profit per head than the beef type of steer. In Bulletin No. 261 it is stated that the dual-purpose or 'skim-milk-fed lot of baby heaves showed as good a condition of flesh and quality as the suckled lots, and were nearly equal in weight,' and that 'baby beef production by the skim-milk method is much cheaper and gives better results than by the suckling method'."

"The Iowa Experiment Station states in Bulletin No. 48 that after extended experiments 'a system whereby dairying and meat-making may be combined is most promising in its profits. It is not only possible to combine these qualities

in a profitable degree, but also to perpetuate them, if the herd is bred especially for them. The feeding of range steers, at present prices, does not permit of securing much profit, in comparison with the returns that may be secured from the products of a herd bred for the special purpose of meeting conditions of a combination of dairying and beef-making. Not only do steers from cows bred with this combination in view yield as much profit as those from the range, but returns from the cows when used for dairy purposes make the combination much more remunerative."

These quotations sound like the heterodox utterances of Professor Shaw, Professor McKay, or some other member of the small but pestiferous group who have incurred the displeasure of the special-purpose advocates by their support of the dual-purpose breeds. But, no, they are taken from a recent publication of the literary bureau of the Holstein-Friesian Association of America.

Undoubtedly this article is a bombshell. In it the Holstein people come over to the dual-purpose side. Nay, they do more; for, having assembled the arguments for the dual-purpose cattle as ably as they were ever marshaled by Professor Shaw himself, they march into the very citadel of the dual-purpose people and make the claim that they themselves have the very best and most typical dual-purpose breed of all in the Holsteins.

They make a strong case for the Holstein as a beef breed, too. They cite more than a dozen tests, made at the experiment stations of Iowa, Michigan, Ohio, Nebraska, and Ontario, and the American Fat Stock Show, in which the Holsteins have scored heavily on the Herefords, Angus, Shorthorns, Red Polls, Galloways, and Devons as beef producers. They claim for the Holstein steer that it is the heaviest of all these breeds at the age for market; that it makes gains for less money per unit of feed; that it makes more gain per day of feeding; that it makes more profit for the feeder when sold; that it makes a percentage of loin as high as any, and higher than most even of the special beef breeds; that it makes a heavier hind quarter as compared with the fore quarter; that it dresses less of tallow than any other of the breeds mentioned; and that it dresses within one or two per cent in beef of the yield of such breeds as the Hereford, Angus, and Shorthorn.

It is rather funny; but let us not overlook its importance. We have reached the time in this country when the beef for our tables must be made from the dairy herds. If that splendid dairy breed, the Holsteins, can hold its own with the best of the beef breeds as meat producers, all that remains to be done is to convince the cattle buyers for the packing houses and the feeders of that fact, and a great need of American stock-raising will have been supplied.

The Brown Swiss people, who got cold feet in promoting their breed as a dual-purpose strain, may now desert the special-purpose company and come into camp with the Milking Shorthorns, the Red Polls, and the Holsteins. And no doubt the Holstein people will some day send an engrossed apology to Professor Shaw for all they have said about the impossibility of breeding beef and milk into the same family of cattle.

The Complete Figures

THERE were 6,372 sheep killed by dogs in Pennsylvania last year, and 4,945 injured.

In view of the fact that a sheep injured by dogs is seldom worth anything afterwards, the number of sheep destroyed must be reckoned, from the farmer's viewpoint, at considerably above 10,000. In addition to these the universal testimony of sheepmen is that the flock which has been chased and worried usually fails to amount to anything afterwards.

The complete figures of sheep actually reduced in value would therefore be several times ten thousand.

Add to this the loss to the farming industry from the failure to utilize the waste of the farms which would be turned into mutton and wool if farmers were not afraid to attempt the keeping of sheep, and the State's loss may be imagined but cannot be computed.

To the Pennsylvania figures should be added similar injury in almost every other State in the Union, as shown by the letters which we have published. These losses could be avoided by adequate, well-enforced laws which would be entirely just to the owners of valuable dogs.

City Agriculture

MANY city schools are establishing courses in agriculture for city children. The Englewood High School in Chicago is a recent example.

A good deal can be done in such schools to make the transition from city to farm easier. Ordinary "book agriculture" can be rather better taught in the city school than the country, but the value of book agriculture is next to nothing.

Seed-testing and seed analysis, pot experiments with soils and their treatment, greenhouse work, and the actual cultivation of vacant lots and flower beds can be made to cover a surprisingly important portion of the field of agriculture. The selling end of farming can be studied at the elevators, boards of trade, seed houses, machinery warehouses, and the like to exceptional advantage in a city like Chicago. But the great lack of the city child is in that background of farm life which makes up three fourths of the farm child's education. No matter how good an agricultural course the city school gives, it can impart only the lesser half of the business. The greater half the farm child learns without knowing that it is learning—driving up the cows, feeding the stock, setting hens, hunting eggs, watching the progress of diseases, helping Father and Mother, absorbing things from the conversation at table and about the evening lamp.

Once add to this inevitable education received by the farmers' children the work which these city schools are trying to do and we shall have better educational facilities in the country than it is possible to have in the city so far as the needs of the vast majority of the young people are concerned.

Ask Your State Legislators

THERE are state laws everywhere for the inspection of bankers. This is recognized as necessary because bankers make a business of receiving the property of individuals as a trust and must be required to keep themselves in position honestly to account for it when called upon.

Commission merchants, like bankers, are making the handling of the property of others their business. There is more reason why they should be inspected than there is for the inspection of banks. The property they handle is perishable and of many grades. There is more room for dishonesty without detection in handling produce than in handling money.

The people of the country as a whole are as much interested in good commission merchandising as in good banking. If farmers everywhere could be as certain of fair treatment from commission merchants as they are from bankers, the supply of food products in the cities and the towns would be far more steady and plentiful, and the cost of living lower.

Why should not commission merchants be under just as rigid public regulation as bankers? Why should they not be required to play the cards in their business face up on the table for the benefit of the inspection service of the State?

These are questions you might ask now.

The Farmers' Lobby

About Presidential Candidates, Prohibition, R. F. D. Reform, Credit Delay, Wool and Wheat

By Judson C. Welliver

ANYBODY been trying to talk Presidential politics—1916 variety—to you lately? They're all talking it, persistently and pertinaciously, about Washington.

A dozen or fifteen States, at any rate, will have Presidential primary elections. Perhaps as many as twenty, for laws to this effect are likely to be right popular with the legislatures this winter. All hope of a national primary was ended when President Wilson sent his message to Congress at the beginning of this session. When his administration first opened he declared himself strongly for such a measure. The politicians received the suggestion with such a prodigious frost that it has never been revived.

Failure to provide a national primary law merely adds to the importance of the States that have their own laws for primary designation of Presidential candidates. In fact, these States suddenly become so important that it might almost be said they will nominate the candidates in 1916. The big politicians practically concede this.

Wilson's Possible Opponents

The States that have primaries will give the real test of the popular feeling. Most of them are Western and Middle Western States. Republican leaders are already conceding that their party must make a big concession to primary States because, generally speaking, those are the independently disposed States: if the nominee doesn't suit them they vote the other way.

In the primary States there will have to be some organized campaigning. Some of the prospective candidates for the Republican nomination, I happen to know, are right now considering whether they will stump these States for the primary vote. It's a new question in political etiquette; and while the aspirants are looking sidelong at each other, every one wanting the other to take the first plunge, some bold person among them will presently plunge in and go a-stumping for the votes he wants. That will end the hesitation; they'll all be in it, and the country will get its eye on the primary States as the real barometer.

They talk about a long list of possibilities for the Republican nomination: Hughes, whom many want but few expect to be a candidate; Governor Whitman of New York; Senator Weeks of Massachusetts, who is widely expected to have most of New England at his back; Senator Burton and ex-Governor Herrick in Ohio; Senator William Alden Smith in Michigan; former Vice-President Fairbanks in Indiana; Senator Sherman in Illinois; La Follette in Wisconsin; Cummins in Iowa; Norris in Nebraska; Borah in Idaho; maybe Governor Brumbaugh in Pennsylvania; pretty certainly Congressman Mann, Republican leader in the House, from Illinois. Some people think that Roosevelt's name will be put on the ballots in the primary States, and as most of them have always been friendly to him speculation deals variously with the possible effect if he should be the man to carry more of their delegates than any other one candidate should get.

At any rate, because of the importance of making a preliminary campaign of publicity and speaking and organized appeal in the States that have primaries, the contest will open early. As to Washington, it is wide open right this minute. The jockeying is on.

Democrats generally concede that President Wilson wants renomination and will get it. He is not so strong with his party as he was a while back. No matter what the merits are, Congress is not following his lead so faithfully this session. The Senate—Democrats and Republicans together—has plunged into a war on the President's method of distributing patronage without consulting Senators so freely as they think would be nice.

In other times contests between Presidents and Senators have made and unmade administrations and parties. But that was in the days when politics was more a game for points than now; when the offices were the counters, and also, to a great extent, the stakes; when the public watched the disposal of offices and thought less of legislation. Nowadays there is vastly less concern who holds the jobs, much more concern what kind of laws are being passed. The old game is played out.

House Didn't Want to Vote on Prohibition

BEFORE this letter appears in print the House of Representatives will have voted on the resolution to submit a constitutional amendment for national prohibition of the liquor traffic. The resolution must have a two-thirds vote to pass, and I guess it will fail. It is generally conceded that if it ever gets the necessary two-thirds in the House it will sail through the Senate. Wherefore its opponents are the more zealous in their fight.

I find a few members who say that, defeated this time, the resolution will be "done for" for a long spell. But they're the decided minority. The large majority expect that the issue will be with Congress without much respite henceforward. To the politicians it certainly is a tough one.

"If I vote for it I'm beaten sure; if I vote against it it kills me politically," is the commonest expression. There was a desperate effort to prevent a vote on it; but the rules committee, which had to decide whether it should get a vote, at last got tired of the pounding and brought out a rule providing for the vote. That added a powerful lot to the popularity of the rules committee—not!

Here's another question in legislative policy for all of us to think about:

Postmaster-General Burlison asked Congress for \$297,000,000 with which to run his department next fiscal year.

EW

That was all he wanted. Whereupon Congress set about to compel him to take and spend \$23,000,000 more than he asked!

Burlison wanted to put the department on a business basis. Last year he spent \$53,000,000 paying rural carriers. He thinks they are paid too much, and asked the privilege of contracting for the service, according to the need and conditions of each route. Doing this, he expected to get the work done for about \$19,000,000 less.

Congress doesn't want to save that \$19,000,000. It doesn't think the rural carriers are overpaid. What do the farmers think?

Back in 1896, when the first rural routes were created, the carriers were all paid \$300 a year. A year or two later Congress raised them to \$400. Then to \$500; then to \$600; then to \$720; then to \$800; then to \$900; then to \$1,000; then to \$1,100; then to \$1,200. There has hardly been a Congress lately that has not handed the rural carrier an advance of about \$100 a year. The carriers have a powerful organization and much political pull, based on the presumption that the carrier is a power with his patrons, and that if the carriers get "sore" on a Congressman they are liable to defeat him. Anyhow, there's no class in the

Looking over all these conditions the legislative committee of the National Grange has issued a vigorous appeal to the country for aroused sentiment to insist on action. It declares this legislation has been repeatedly promised; it was crowded out of the way in order to pass financial legislation for other classes of business, in the Federal Reserve act. The railroads have had their necessities met, in some measure at least, by an increase in their freight rates. The Grange wants to know when the farmer is to "get his." It points out that the condition of agriculture is not good, and getting no better fast; and it adds:

"We have fewer cattle, sheep, and hogs than ten years ago, and produce less, per capita, of many other food products. In proportion to the whole population we have fewer people on the farms than then. We have more mortgage per farm and less acres per farm upon which to grow food and pay the mortgage.

"Farm tenantry is rapidly and progressively increasing, and as it increases the production per capita is sure to decrease.

"These and other facts prove that the problem is of great importance to the man in the city as well as the man on the farm. We therefore appeal earnestly to the general public—not to the farmers alone—for an aroused sentiment in this matter."

If farmers will get busy, impressing on Congress that they want something, and know what it is they want, they will soon get it.

If 45,000 letter carriers in the country can get their wages raised at the rate of \$100 per Congress, through the period of nine successive Congresses—that is what they have actually done—what do you think the farmers could do if they were as organized and determined as are the carriers?

The carriers, by dint of organization and insistence, now get four times as much pay as eighteen years ago.

And yet their claim to it is chiefly that they are supposed to "have a pull with the farmer vote."

Why doesn't the farmer use his pull for himself?

Truth to say, Congress is treating this rural-credit question exactly as, for many years, it treated the general question of banking and currency reform. It would really like to perform but doesn't know what to do. It hasn't got interested enough in the farmer to do more than feel kindly toward him. When it gets interested enough to study the problem, to familiarize itself with models that have been set up and have worked, then we will get results.

It was the same way with railroad regulation, with pure food, with currency, with meat inspection, with many other things. Congress has got to learn about things before it can legislate on them.

Just now Congress rather vaguely understands that there's a rural-credit problem. That's about all. A few members know a lot more, but not Congress. Congress needs to be prodded.

Watch the Wool and Wheat Readjustment

THE world's wool famine is getting too close for comfort.

Except to the man with sheep. Before the Great War started, wool was already commanding international attention. Governments and economic students were inquiring what the world was going to do. The need for wool grows, and the supply does not. When our tariff was revised and wool made free, it was widely suspected the price would fall. Instead it rose. Rose because the whole world was trying to buy and there was more demand than supply.

Some weeks ago Great Britain ordered that no wool should be exported from any British country except to another British country or to the fighting allies of Britain.

That meant that Uncle Sam was suddenly shut off from his supplies of Australian merino. Without them many American mills cannot run at all.

This Government has protested and besought; thus far in vain. England hates to discommode us, but she needs that wool to clothe soldiers, and will keep it. Probably we would do the same in like circumstances.

Anyhow, there's a general feeling among the experts and statisticians of agriculture that wool and mutton are going to be two of the good things of a long future. There is also, I may add, a suspicion among the crop sharps that wheat is being overdone for 1915, and that the acreage will be so immense as to "bear" the price, despite war demands. Not only this country but also the other wheat countries are reported breaking all acreage records. If the spring-wheat territory goes as crazy as the winter-wheat regions have gone, there will be a lot of grief and sorrow at selling time next year.

Some say that the wool and mutton business is the place to get in, and the wheat business the place to get out. I pass the tip along from the authorities, who also don't know; but they think so, and are thinking so very hard.

Which recalls the experiences of two neighbors of mine. Both had big wheat crops this past season: One was a devoted reader of newspapers and the agricultural press; the other didn't have time for such frivolities. They are both mighty good farmers.

They threshed wheat the same week, just before the war menace began to be realized by everybody.

The one who doesn't waste his time reading believed wheat was going to fall steadily. He sold at 82 cents as quickly as he could.

The other didn't. "I'll get \$1.50 for some of that wheat," he persisted at a time when the market couldn't see 90 without a telescope.

"How'll you get it?" asked the farmer who had sold. "Feeding soldiers in Europe; there's going to be a war this time, sure," replied the other confidently.

The other day he sold enough at \$1.14 to buy an automobile; the rest is waiting. He hasn't stopped any of his papers and doesn't intend to.



Let the public realize the situation. Farmers already know it

whole public service that comes so near getting from Congress what it wants, when it wants it, as the rural carriers.

The postal authorities don't claim that all rural carriers are overpaid, but it does protest that a good many are. There are carriers who work two or three hours a day, traveling over short routes, perfect roads, and in mild climate, carrying very few pieces and little weight of mail. Others travel several times as far, work long hours, in bad weather, on execrable roads.

But the man who does three hours' easy work gets the same \$1,200 as the man who does nine hours' heavy work. Doesn't seem quite right, does it?

The Department wants to adjust the pay to the service. Doing that, it expects to save a good many millions. Then it wants to use those millions making better service. The whole gigantic business of the postal service earned its first real surplus for the business year ended July 1st; about \$4,000,000. Mr. Burlison doesn't want a surplus, but he does want a chance to reduce rates and better the service as fast as possible. He can't do that if Congress shall go on voting away the earnings in increased salaries as fast as the earnings grow. There's what the discussion is about. It has been charged, with much heat, that the railroads and express companies are really responsible for much of the opposition to Burlison's reforms: they don't want the parcel post to grow too big, for it would kill the express companies. Several statesmen have called each other liars in the ardor of this debate, and the end is not yet.

The Grange Demands Results and Relief

THERE are signs that the patience of the big national organizations of farmers is getting exhausted as the result of repeated delays and disappointments about getting farm-credit legislation. The President's statement in his message that such legislation "cannot be perfected now" is taken as settling the matter for this session. Nothing is expected to be done: neither a plan for consolidation of land credit and mortgage loans at low interest, nor a scheme for personal rural credit.

There will be no extra session the coming summer unless plans and conditions greatly change. The last chance during this administration, then, will be in the long session beginning a year hence.

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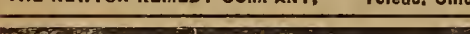
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For Your Own Sake and Your Hogs'

Here's a big "if" If the Government had thoroughly stamped out hog cholera when it first appeared in the United States we would not be cursed with it to-day. Canada has none of it to speak of because the Canadian government treats it just as we do foot-and-mouth disease—by slaughter.

Who knows? Do you? Hog cholera is now so widespread in this country of ours that it is a part of nearly every stockman's troubles. Some say vaccination with serum is the only way to stop it. Others say, "I've used So-and-so's dope and have found it will cure hog cholera, dyspepsia, goiter, corns, and fits." Still others claim their hogs are so healthy no germ can hurt them. Who is right? Don't decide until you have read "The Best Hog-Health Insurance"—Next Issue

This is one of a series of discussions on hog cholera. There is one in this issue too. Stockmen are pronouncing this series accurate. Farm and Fireside knows it to be, for we have taken the pains to personally investigate everything

How We Saved Clara

By Josephine Priest

SIX years ago, while I was on a visit home, my father, who had only a small farm and no accommodations for more stock than the cow and heifer he already had, gave me a beautiful cream-white heifer calf which he had prepared for veal but could not bear to see go for that purpose. There was no time to wean the calf, and as we had several cows, one of which we thought would be suitable to furnish her milk until properly weaned, we thought nothing of the journey of 100 miles by rail. The calf, however, felt differently, for she would not touch a cow, or the milk after being drawn.

At first it seemed of little consequence, but when on the very next morning after my return my husband's leg was broken by a kick from one of the cows the problem of feeding the calf was "up to" me, and I soon found it taxed my resources. I bought some milk at a neighbor's, trying to find some that the calf would like. Our cows were well along in the lactation period, and I feared that might be the cause of her reluctance to drink. This was not the case, as she cared nothing for the change.

Then I began breaking eggs into her mouth. About half a dozen a day kept her alive for a time. I also procured some calf meal. Not knowing much about the feeding of this, I gave a large quantity raw and soon had a case of violent scours.

I remember leading her out on the lawn where my husband could look from

the window and see her. The verdict was she had only a few days to live.

Instead of giving up on the pitifully emaciated little thing I worked all the harder. Eggs were cheap, and I kept on feeding them. Finally she began to eat bran, and then hay, and after three months her appetite for milk returned, and we gave her plenty for six months.

It took a long time to bring her into shape, but with good pasturage, hay, silage, bran, and oil meal the last winter she was at the time of freshening very far from looking like a near victim of starvation. At two years and two months of age she tested 1.25 pounds of fat for one day. We did not obtain a complete record for that year, but for the first four months her fat amounted to 133.5 pounds.

She Became a Fine Cow

Her second calf was born eighteen months after the first. This gave her time to grow and develop, which we consider essential if a heifer calves at two years of age. Her highest test for the second year was 1.66 pounds fat per day, and during her lactation period of eleven months she produced 465.2 pounds fat, at a profit of \$116.18 after deducting the feed cost while she was dry.

She freshened again in fourteen months. The three-months' rest was from choice, as we wished to have her in excellent condition. Her highest day's test with third calf was 2.19 pounds fat. In the ten months she has milked so far, her fat production is 504 pounds.

Since first coming in, her grain ration has been balanced from Ajax flakes, corn meal, linseed oil meal, bran, and a little cotton seed. She does not do well with much of the last-named grain. About 12 to 15 pounds of hay during the winter and 30 to 40 pounds of silage make her entire ration. Of the grain mixture she is fed at the rate of 1 pound of grain to 3½ pounds of milk produced. There is water in the tie-up, which is large, well lighted and ventilated.

Her breeding qualities bid fair to equal those of her fat production. Her first calf, a heifer, was half Holstein, and sold before maturity. Her second, also a heifer, from a pure-bred Jersey sire, is due to freshen soon, and is a fine reproduction of the dam in all but color.

Save Feed by Killing Lice

"WHY feed six or eight quarts of grain to a lousy cow when four to six quarts fed to one free from lice will give better results?"

This pertinent question is asked in a letter from Harvey S. Brown, who lives in the midst of a dairying community in Delaware County, New York. He says:

Once greasing the cattle, young stock, and calves thoroughly all over with an ointment adapted to the purpose will kill every louse on the cattle. By repeating the greasing in ten days the young lice since hatched will all be killed.

If one third to one half the grain fed to cattle is required to feed and multiply the lice, which I believe to be true, then the lice on a dozen cows will eat indirectly a bushel of grain a day. This means a cost of about \$100 for feeding a farmer's lice stock during winter and spring.

A lice-killing ointment which I have tried for many years, and which I know will kill the lice and not harm the cattle is composed of: 1 gallon of linseed oil, 75c; 5 pounds of lard compound, 65c; 5 pounds flowers of sulphur, 25c; 2 quarts of kerosene oil, 12c, making a total of \$1.77. This will furnish enough ointment to exterminate the lice on a dairy of 10 to 12 cows, or younger stock in proportion.

Thus it will be seen the cost of one day's grain feeding for an animal will exterminate the lice on that animal.



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The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Six

JIM IRWIN, once a hired man on Colonel Woodruff's farm, has become teacher of the district school. He is an off ox or, as the Colonel calls him, a brown mouse, a man who feels things differently from his associates. He at once begins a reform in his school. Reading, spelling, and arithmetic he teaches in terms of agriculture; seed-testing, dairy processes, and farm chemistry dominate his classroom. Colonel Woodruff's daughter, Jennie, who in years past accepted his worship, and even a kiss or two, is scandalized, and being elected county superintendent resolves to bring him to terms. With this idea in view she entertains Jim and his mother at Christmas dinner, and then prepares to "line him up."

XV

Primrose Paths of Memory

JENNIE played the piano and sang. They all joined in singing some simple Christmas songs. Mrs. Woodruff and Jim's mother went into other parts of the house on research work connected with their converse on domestic economy. The Colonel withdrew for an inspection of the live stock on the eve of the threatened blizzard. And Jim was left alone with Jennie in the front parlor.

After the buzz of conversation they seemed to have nothing to say. Jennie played softly and looked at nothing, but scrutinized Jim by means of the eyes which women have concealed in their back hair. There was something new in the man—she sensed that. He was more confident, more persuasive, more dynamic. She was used to him only as a static force.

And Jim felt something new too. He had felt it growing in him ever since he began his school work, and knew not the cause of it. The cause, however, would not have been a mystery to a wise old abbot who discovered the same sort of change in one of his young monks. Jim Irwin had been a sort of monk since his boyhood. He had mortified the flesh by hard labor in the fields, and by flagellations of the brain to drive off sleep while he pored over his books in the attic—which was often so hot after a day of summer's sun on its low, thin roof that he was forced to do his reading in the midmost night. He had looked long on such women as Helen of Troy, Cleopatra, Isabel, Cressida, Volumnia, Virginia, Evangeline, Agnes Wickfield, and Fair Rosamond; but on women in the flesh he had gazed as upon trees walking. The abbot, had this young ascetic been under one, would have foreseen the effects on the psychology of a stout fellow of twenty-eight of freedom from the toil of the fields, and association with a group of young human beings. To the young monk he would have recommended fasting and prayer and perhaps a hair shirt. Just what his prescription would have been for a man in Jim's position is of course a question.

He would no doubt have considered carefully his patient's symptoms. These were very largely the mental experiences which most boys pass through in their early twenties, save perhaps that, as in a belated season, the transition from winter to spring was more sudden and the contrast more violent. Jim was now thrown every day into contact with his fellows. He was no longer a monk but an active member of a very human group. He was becoming more of a boy with the boys, and still more was he developing into a man with the women. The budding womanhood of Calista Simms and the other girls of his school thrilled him as Helen of Troy or Juliet had never done.

This will not seem very strange to the experienced reader, but it astonished the unsophisticated young schoolmaster. The floating hair, the heaving bosom, the rosebud mouth, the starry eye, the fragrant breath, the magnetic hand—all these disturbed the hitherto sedate mind and filled with strange dreams the brief hours he was accustomed to spend in sleep.

Now, as he gazed at Jennie Woodruff, he was suddenly aware of the fact that after all, whenever these thoughts and dreams took on individuality, they were only persistent and intensified continuations of his old dreams of her. They had always been dormant in him since the days they both studied from the same book. He was quite sure now that he had never forgotten for a moment that Jennie was the only girl for him. And possibly he was right about this. It is perfectly certain, however, that for years he had not consciously been in love with her.

Now, however, he arose as from some inner compulsion, and went to her side. He wished he knew enough of music to turn her sheets for her; but, alas, the notes were meaningless to him. Still scanning him by means of her back hair, Jennie knew that in another moment Jim would lay his hand on her shoulder, or otherwise advance to personal nearness, as he had done the night of his ill-starred speech at the schoolhouse, and she rose in self-defense. Self-defense, however, did not seem to require that he be kept at too great a distance, so she maneuvered him to the sofa and seated him beside her. Now was the time to line him up.

"It seems good to have you with us to-day," said she. "We're such old, old friends."

"Yes," repeated Jim, "old friends."

"And I feel sure," Jennie went on, "that this marks a new era in our friendship. Don't you feel so too?"

"Why?" inquired Jim after considering the matter.

"Oh, everything is different now, and getting more different all the time. My new work and your new work, you know."

"I should like to think," said Jim, "that we are beginning over again."

"Oh, we are, we are! I'm sure of it."

"And yet," pursued Jim, "there is no such thing as a new beginning. Everything joins itself to something which went before. There isn't any seam."

"No?" said Jennie interrogatively.

"Our regard for each other"—Jennie noted most pointedly his word "regard"—"must be the continuation of the old regard."

"I hardly know what you mean," said Jennie.

Jim reached over and possessed himself of her hand. She pulled it from him gently, but he paid no attention

the knife in it," begged Jim with much earnestness.

Jennie held it up very obediently for his inspection.

"It's longer, and slenderer, and whiter, and even more beautiful," said he, "than the little hand I cut; but it was then the most beautiful hand in the world to me—and still is."

"I must light the lamps," said the county superintendent-elect, rather flustered, it must be confessed. "Mamma, where are all the matches?"

Mrs. Woodruff and Mrs. Irwin came in, and the lamplight reminded Jim's mother that the cow was still to milk and that the chickens might need attention. The Woodruff sleigh came to the door to carry them home, but Jim desired to breast the storm. He felt that he needed the conflict. Mrs. Irwin scolded him for his foolishness, but he strode off into the whirling drift, throwing back a good-by for general consumption and a pathetic smile to Jennie.

"He's as odd as Dick's hatband," said Mrs. Woodruff, "tramping off in a storm like this."

"Did you line him up?" asked the Colonel of Jennie. That young lady started and blushed. She had forgotten all about the politics of the situation.

"I—I'm afraid I didn't, Papa," she confessed.

"Those brown mice of Professor Darbishire's," said the Colonel, "were the devil and all to control."

Jennie was thinking of this as she dropped asleep.

"Hard to control?" she thought. "I wonder. I wonder after all if Jim is not capable of being easily lined up—when he sees how foolish I think he is!"

And Jim? He found himself hard to control that night. So much so that it was after midnight before he had finished work on a plan for a co-operative creamery.

"The boys can be given work in helping to operate it," he wrote on a tablet, "which in connection with the labor performed by the teacher will greatly reduce the expense of operation. A skilled buttermaker with slender, white hands"—but he erased this last clause and retired.

XVI

A Blow and a Boost

A DISTINCT sensation ran through the Woodruff School, but the schoolmaster and a group of five big boys and three grown girls engaged in a very unclasslike conference in the back of the room were all unconscious of it. The geography class had recited, and the language work was on. Those too small for these studies were playing a game under the leadership of Jinnie Simms, who had been promoted to the position of weed-seed monitor.

The game was forfeits. Each child had been encouraged to bring some sort of weed from the winter fields, preferably one the seed of which still clung to the dried receptacles; but, anyhow, a weed. Some pupils had brought merely empty tassels, some bare stalks,

and some the seeds which they had winnowed from the grain in their fathers' bins; and with them they played forfeits. They counted out by the "arey, ira, ickery an" method, and somebody was "It." Then, in order, they presented to him a seed, stalk, or head of a weed, and if the one who was It could tell the name of the weed the child who brought the specimen became It, and the name was written on slates or tablets, and the new It told where the weed or seed was collected. If any pupil brought in a specimen the name of which he himself could not correctly give he paid a forfeit. If a specimen was brought in not found in the school cabinet—which was coming to contain a considerable collection—it was placed there, and the task allotted to the best penman in school to write its proper label. All this caused some excitement and not a little buzz, but it ceased when the county superintendent entered the room.

For it was after the first of January, and Jennie was visiting the Woodruff School.

The group in the back of the room went on with its conference, oblivious of the entrance of Superintendent Jennie. Their work was rather absorbing, being no more nor less than a compilation of the figures of a cow census of the district.

"Altogether," said Mary Talcott, "we have in the district one hundred and fifty-three cows."

"I don't make it that," said Raymond Simms. "I don't get but a hundred and thirty-eight."

"The trouble is," said Newton Bronson, "that Mary's counting in the Bailey herd of Shorthorns."

"Well, they're cows, ain't they?" interrogated Mary.

"Not for this census," said Raymond.

"Why not?" asked Mary. "They're the prettiest cows in the neighborhood."

"Scotch Shorthorns," said Newton, "and run with their calves."

"Leave them out," said Jim, "and to-morrow I want each one to tell in the language class, in three hundred words or less, whether there are enough cows in the district to justify a co-operative creamery, and give the reason. You'll find articles in the farm papers if you look through the card index. Now how about the census in the adjoining districts?"

"There are more than two hundred within four miles on the roads leading west," said a boy.

"My father and I counted [CONTINUED ON PAGE 23]



"Do you remember how you got that?" he asked

to the little muscular protest and examined the hand critically. On the back of the middle finger he pointed out a scar, a very tiny scar.

"Do you remember how you got that?" he asked.

Because Jim clung to the hand their heads were very close together as she joined in the examination.

"Why, I don't believe I do," said she.

"I do," he replied. "We—you and I and Mary Forsyth—were playing mumble-peg, and you put your hand on the grass just as I threw the knife—it cut you and left that scar."

"I remember now!" she exclaimed. "How such things come back over the memory! And did it leave a scar when I pushed you toward the red-hot stove in the schoolhouse one blizzard day like this, and you peeled the skin off your wrist where it struck the stove?"

"Look at it," said he, baring his long and bony wrist.

"Right there!"

And they were off on the trail that leads back to childhood. They had talked long and intimately when the shadows of the early evening crept into the corners of the room. He had carried her across the flooded sleet again after the big rain. They had relived a dozen moving incidents by flood and field. Jennie recalled the time when the tornado narrowly missed the schoolhouse and frightened everybody in school nearly to death.

"Everybody but you, Jim," Jennie remembered.

"You looked out of the window and told the teacher that the twister was going north of us and would kill somebody else."

"Did I?" asked Jim.

"Yes," said Jennie, "and when the teacher asked us to kneel and thank God you said: 'Why should we thank God that somebody else is blown away?' She was greatly shocked."

"I don't see to this day," Jim asserted, "what answer there was to my question."

In the gathering darkness Jim again took Jennie's hand, and this time she deprived him of it.

He was trembling like a leaf. Let it be remembered in his favor that this was the only girl's hand he had ever held.

"You can't find any more scars on it," she said soberly. "No, not if you look ever and ever so long."

"Let me see how much it has changed since I stuck

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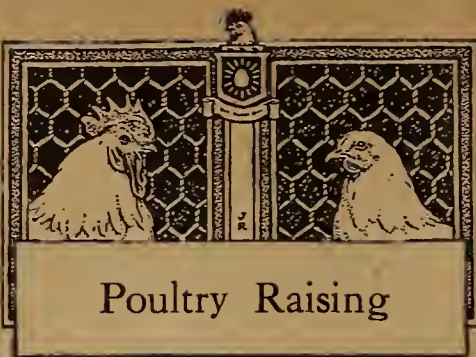
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Poultry Raising

Cold Feet—Few Eggs

By Anna W. Galligher

COLD weather puts a brake on the Cegg machinery of ducks unless they get snitable care. Beginners must not expect a duck to stand cold as well as a goose.

An open shed in cold weather will answer for geese, but will not do at all for ducks. Neither should ducks be kept in houses with other poultry. There is sure to be constant disturbance among the birds.

If you want plenty of duck eggs in season, keep the ducks in a comfortable place at night and see that they have a dry floor with plenty of clean litter or straw for bedding.

When the days are very cold and windy, or when the snow is deep, I usually keep the ducks indoors. After they have been housed for several days and used exercise, I frequently shovel the snow out of the yard and cover the ground with litter or coal ashes and turn the ducks out for a while.

During thaws, no matter if the snow is still deep, ducks enjoy paddling and burrowing through it in search of grass. But when the ground is frozen hard and there is frost in the air, their feet seem to suffer when allowed out in the snow. At times they will stop suddenly, draw their feet up among their feathers, and if forced to walk will hobble along as if their backs were broken. The best laying breeds need the most careful protection from storms and cold.

A Dark Poultry Picture

By Heiotrope Hamilton

IT WAS my privilege to be born and raised on a farm. In due time I became a teacher of rural schools. Since agriculture and nature study have become required subjects, my work has been fascinating.

While teaching for several consecutive years in one school I had as neighbors a family of four whose activities I watched with keen interest and mental profit, especially the growth in mind and body of the two bright children.

This farmer had bought a 100-acre farm for \$2,500, to be paid for in instalments. He paid \$100 at the time of purchase; the balance was to be paid in twenty years in equal annual payments, with interest at 6 per cent.

Her Hatches Were Good

This farmer's wife decided to try to supply their larder from the proceeds of her poultry. This is the story of her experience during her first year on the farm:

The first of April she bought one dozen hens and a cock costing \$3.38 in all, much less than they could be bought for now. During April and May the hens produced 20 dozen eggs. Four and one-third dozen of these were set, and the rest were sold or used for cooking. The eggs sold were exchanged at the local store for groceries to the value of \$2.04.

Four of the hens were set on 52 eggs, from which 47 chicks were hatched. These chicks were active for some time, but one day when I passed their farm from school the farmer said: "I vum if I know what ails Mary's chicks. Their wings are dragging and they stagger when they try to walk."

Upon examination we found that the mother hens, the nests, and coops were alive with lice. The roosts were poles with the bark left on. The nests were too near the roosts, and were lousy as was the entire coop. We at once gave the hens and some of the chicks a bath, using a solution advertised to kill lice.

Troubles Begin

The remaining chicks we dusted with insect powder. The solution used was probably too strong, as nine chicks died. Yet we took the greatest care not to injure their eyes or ears and did the work where it was warm and the birds were soon dry. Following this treatment, for a time the chickens grew and thrived. Finally, because of the garden, they had to be confined in a park. A weasel got into the yard and killed three chicks, a dog killed two, and rats carried off four more.

A few weeks later I was told that the chickens were not doing well, and on looking around for a cause found the water basins filled with litter. When

asked if the chickens were always kept supplied with fresh, pure water, the woman said: "I try to give them water every day or two."

Just then the farmer came up and I asked how many eggs they were getting. "Not many," he replied, "those eight hens are either clucking or molting most of the time. But I know I can improve on Mary's method of feeding and get more eggs. I will feed the hens myself." He did so when he happened to think of it.

A few days later he found two hens dead and another unable to walk. The hens' crops were hard and distended almost to the point of bursting, and their drinking dishes were dry.

More Died During the Winter

During the remainder of the summer the eggs sold aggregated 10 dozen, which were exchanged for groceries to the value of \$1.30. In the fall nine cockerels sold for \$2.30. The old cock was killed in November in honor of the Pilgrim Fathers' memory. Four of the hens consumed such a vast amount of time and so much energy during the summer in clucking and sitting on crockery eggs that they were finally sold and brought \$1.08.

The flock then numbered 19 pullets, 1 cockerel, 5 old hens—25 head all told. During the remaining months, up to April 1st, the pullets and hens laid \$12.24 worth of eggs, which were also exchanged for groceries. No account was kept of the cost of the feed consumed, but when the year was completed the flock contained three birds more than at the beginning of the year, nine more of the chickens having died during the winter months as a result of overcrowding and lack of ventilation.

The income from the flock for the year in addition to the eggs used in the family and the old cock used for the Thanksgiving dinner stood as follows:

Eggs sold	\$15.58
Cockerels sold	2.25
Hens sold	1.08
Total	\$18.91

The total is a fairly good figure considering the conditions under which the flock lived, and considering that they were just common stock. But with just ordinarily good care and a little attention paid to breeding better fowls the returns might have been at least doubled.

Why the Hens Didn't Lay
A Story in Five Parts
Part I

Heredity Objected



THERE was a young pullet named Nell Ambitious to lay very well, But her folks being scrubs, She was classed with the dubs. "No use," said they all. "Blood will tell."

(Part II will appear next issue)

Greens, Three Quarts for a Cent

By A. C. Kohr, Jr.

THE cheapest and most beneficial green food the average farmer can give his poultry in winter is, I believe, sprouted oats. Oat-sprouting is a simple process by which I have produced, by actual test, one bushel of tender succulent green food for about 10 cents when oats were selling for 60 cents per bushel. I use a very simple method, and have never been troubled with sourness or mold, which seems to be the main drawback with most oat-sprouting efforts.

After trying out different plans advocated, I have always returned to my own, finding it for my use the most satisfactory. It requires the least labor and expense. The chief things needed are several wooden boxes of uniform size and a sprinkling can.

I use a box 12x24 inches and 5 inches deep, having thick ends, and thin sides and bottom. This makes a light strong

box. Four 1/4-inch holes are bored in the bottom to drain off the water. Then cover the bottom with not more than one-half inch of dry oats, and sprinkle it thoroughly with cold water with an ordinary garden sprinkling can. At the first wetting of the oats be sure to stir them up well to thoroughly wet all. Then take an old burlap feed bag, fold in the middle, dip it in a bucket of cold water, and place it on top of the oats to retain the moisture. The bag should remain on the oats three or four days, or until the sprouts begin to show, and always be kept wet. After the first wetting the sprinkling can be done through the burlap, but use water freely. Place the boxes on the floor of any ordinary house cellar, or in any other location where the temperature does not fall below freezing. Set the lower box on a piece of board or strips about an inch thick to allow the water to run away.

Start a box in this way every day and set it directly over the preceding one, tiering them up six or eight high. Wet the boxes twice daily with cold water. In wetting the oats the easiest way is to change the tier over, so that when you are done the top box will be on the bottom and the bottom one on top.

Some persons advise soaking the oats overnight in a bucket of lukewarm water, also using warm water for sprinkling, but I find soaking gives a taint which injures the quality of the feed.

Regularity is an essential requirement in feeding sprouted oats if the best results are to be attained. Don't feed one day and miss the next. I pick them apart and feed in V-shaped troughs to the layers, and for the young chicks clip them fine with shears.

One box of the size described will feed sixty layers one day (two meals). Sprouts may be fed at any length up to five inches with excellent results.

Considering that it requires but about five minutes time twice a day to supply sixty hens, I believe it is the most profitable investment of time a poultryman can make. I have been able to get my flocks of layers to average 23 to 25 eggs per hen per month during the winter months when eggs are selling at top notch price.

Eggs at More Money—Why?

By Philip M. Marsh

IT CERTAINLY pays to exercise care in handling and shipping eggs.

First, I have found, the nests should be kept clean and the material in the nests well shaken up. If the eggs are collected twice a day and at each collection the nests cleaned of droppings and shaken up, there will be very few dirty eggs. By following this method I found that the eggs noticeably soiled amounted to only 15 to 20 per cent. Two days' collection—129 eggs—counted out 110 clean and 19 slightly soiled under this method. Under other and more careless methods the eggs are often 50 to 100 per cent soiled. Such soiling means work in washing and scrubbing the eggs if one desires the highest price for them, and even then many of the soiled eggs cannot be completely cleaned.

Second, be careful to see that every egg that is shipped is a clean, "good-looking" egg. Perfectly fresh, clean eggs which are classed as "Henneries" bring 8 to 10 cents per dozen more than the common run of eggs. The firm to whom we ship wrote us that it was paying 28 to 30 cents for "common-run" eggs (partly small, large and dirty) at the same time that it paid us 38 cents for our clean, fresh, fairly size-uniform eggs. We make it a rule never to ship a very small or a very large egg; such eggs are likely to break in shipment and dirty the other eggs, and are not desired by the trade.

Third, pack the eggs right. Too many of us merely "dump" the eggs into the crate without care. Thus many of the eggs are cracked and later may break, dirtying the other eggs. Place the eggs in, one at a time, carefully, and each at the same angle, so that the layers will fit together perfectly. This method also improves the appearance of the eggs and may bring a higher price for them. Don't allow broken or torn fillers to continue in your crates, for they allow the eggs to rattle together and break. Keep a supply of fillers on hand and replace any broke ones. Be sure that the cushions at the bottom of the crate and at the top are placed evenly, and fill up the otherwise empty spaces.

Fourth, name your eggs with a brand name, and work for a special, high-priced future trade by specializing and upholding certain special qualities. Paint the name of the egg on the outside of the crate and on the inside of the cover with a loud black paint. Mark also what special qualities the eggs possess, in a conspicuous part of the crate. We have named our eggs "The J. H. Merrill Eggs," and we guarantee an age of not over ten days, cleanliness and fair size-uniformity. We have been doing this

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"People do not really appreciate or realize what a powerful drug it is and what terrible effect it has on the human system. If they did, hardly a pound of coffee would be sold. I would never think of going back to coffee again. I would almost as soon think of putting my hand in a fire after I had once been burned. Yours for health."

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for about three months, and are now getting one cent per dozen above the market price paid for other eggs of the same general class. We expect more than this in the future. It may take one year, it may take three years, to impress upon the people who buy our eggs that "The J. H. Merrill Eggs" are better than others, but when we have done it, 5 to 10 cents per dozen extra is not too much to hope for. We use a stamp for these eggs, so that when the city dweller breaks his egg and enjoys the taste of the full-meated, strictly fresh egg flesh he may read upon the shell the name of the man who produces it. Next time he buys eggs he will specify that brand which he knows has suited him, and he will be glad to pay a higher price for it.

A Champion Heavy Weight By Charles I. Reid



THIS Light Brahma cock is light in color only, as he has attained the remarkable weight of sixteen pounds and three ounces and bids fair to add still more weight. This heavy cock was raised on a farm in Dauphin County, Pennsylvania, and is the father of several cockerels and pullets who are also attaining a remarkable weight. Light Brahmas are a very good breed to raise for market. They develop rapidly. They quickly respond to good treatment.

Canning the Crumbs By Margaret Statham

LAST winter I had nothing to feed my L table scraps to, so I saved the bread I could not use for other purposes, to feed little chicks in the spring. I toasted the crumbs well in the oven to prevent molding and stored them in the cupboard in flour sacks.

In the spring I crushed the crumbs fine and fed them to my chicks, alternating with cracked corn and occasional feeds of moist food. I fed generously and the chicks grew rapidly.

The next hatch of 44 I put with two pullet mothers, feeding the same way. At the end of the first week I lost a number, and quit feeding the bread for fear of mold.

After watching them further, however, I resumed the feed, concluding it was the restlessness of the hens doing the mischief. There were too many together. The hens could not move without stepping upon them.

I have found this a good way to use my stale bread, and shall continue it this year.

EDITORIAL NOTE—Stale bread can well be used to take the place of middlings or the cheap grade of flour often used in mash rations. But too great a proportion of fine wheat-flour bread cannot be safely fed to chick or child. Plenty of the bran and the outer "coats" of the grains are essential to furnish mineral elements for bone, nerve, and sinew development.

Poultry-House Mistakes By Alfred N. Lott

MY EXPERIENCE with poultry houses has led me to believe that they all fall into one of three general classes. The first class is the up-to-date house with its wide, level roosts, moderately low roof, sanitary nests, and large windows which afford plenty of light and fresh air all the time.

The Novice's Poultry House

The second class is built of good material, but by a novice who really does not know the difference between a good and a poor poultry house. Though he may mean well enough, he has little knowledge of the correct principles involved in its construction. The building is generally higher than necessary; it has insufficient light and air; the roosts are old-fashioned, being made of little slats or small poles on which the birds cannot get a good footing, and they are usually too high from the floor and at different levels.

The nests in such a house are likely to be anything from old milk cans to discarded washing machines. These are not exaggerations, for I have seen many nests a great deal worse.

The third class of poultry house is merely a conglomeration of discarded lumber which is not good enough for anything else. Rotten fence boards and various odds and ends constitute the bulk of such lumber. Houses made from such material can hardly help being harbors for innumerable lice and all kinds of pests which like to prey upon poultry.

Frequently the landscape can be easily viewed from within such poultry houses, and the sky through the roof. Through these numerous openings the elements rage unobstructed and make the fowls' condition most pitiable.

My experience in converting a poultry house of the second class to one of the first class may be interesting. The house in question was tight, well-built, dry, with a good foundation, but was a lofty affair, 10 feet high in front, 8 feet high at the rear, 6 feet wide, and 12 feet long. It had one small window, 2 feet square, under the eaves.

The roosts were 1x3-inch boards arranged like stair steps. The boards were turned edge up, so the fowls had to cling for dear life to keep balance. Had the boards been laid flat the hens could have roosted with some comfort even at the perilous height that the topmost roost reached. Of course all the fowls wanted to roost on the top perch, and crowded and fought, often pushing one another to the hard board floor below, thus making "bumble foot" quite common in the flock.

The nests were mostly boxes nailed on the wall about 4 feet from the floor. Consequently the hens had to fly to the edge of the nest and then jump down on the eggs if there were any, often breaking them and starting the egg-eating habit.

How I Renovated the House

My first move was to take out everything inside the building and burn all that was not worth saving. Then I cleaned the inside walls thoroughly so as to satisfy myself that all lice, mites, and their eggs were destroyed. Next I removed the roof and lowered the roof framework to 6 feet in front and 5 feet in the rear.

In front I cut a 3x6-foot window, over which I fastened poultry wire, and used a heavy duck curtain in severe weather. The roosts came next. I used 2x4 supports and hinged them to the back wall about 2 feet from the floor, making legs for the front so the perches were perfectly level. I used the same one-by-threes for roosts, but nailed them on flat. When wishing to clean out under

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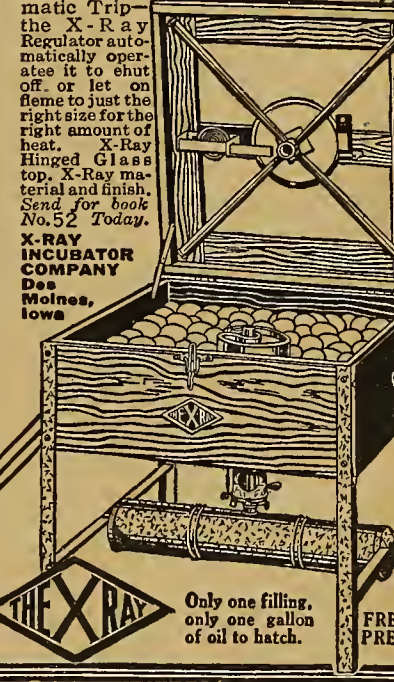
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the roosts I simply raise up the roosts and their supports, and fasten them to hooks in the roof.

For nests I used the wire-basket style. These I fastened to the wall 2 feet from the floor, and as they are shallow and easy to enter I am not troubled with eggs being broken. I provided a shade over the nests to keep them dark.

When all this was finished I turned the whitewash spray nozzle on the whole interior, and put clean fresh straw in the nests and under the perches.

The whole cost, including labor, roofing, and wire nests, amounted to less than \$5, and the improvements have paid for themselves many times.

EDITORIAL NOTE—This young poultryman, whose experience in remodeling was furnished at our request, is now sixteen years old. He has already been in the business two years.

Roosters That Were Swatted

WHEN a campaign like the 1914 swat-the-rooster campaign starts amid a lot of publicity and then we hear nothing about the results, we sometimes think that it didn't pan out as expected. But out in Kansas the rooster-swatting campaign last year was a success. A representative of the Seymour Packing Company, one of the largest poultry establishments in the country, says that at their Topeka poultry house they had on hand at one time last spring five carloads of old roosters.

Kansas eggs he said were nearly twice as good in 1914 as formerly, and the improvement in quality was due largely to the absence of roosters.

"Some men grow old gracefully," says Dad Millslage. "Others buy hair restorers and color their whiskers."

The Battle Went Not to the Strong



THE much-discussed Chinese eggs seem to be selling for what they are worth, and no more, in Pacific Coast markets. Portland, Oregon, quotations for December 1st were: Nearby fresh gathered, 44 to 45c; candled local, 42c; Chinese, 10 to 18c.

What Kind of a Gasoline Engine Do I Need?

By James A. King

THE man who is making a specialty of fruit-growing and gardening needs an engine which will not only do the pumping and such allied jobs, but which will also operate his spraying outfit. Generally on such a type of farm one general-purpose engine is enough. It can be mounted on the sprayer wagon when the spraying season is on, and a long enough belt used to pump the water from here until the spraying season is over. Then it can be set on the permanent foundation at the pump for the rest of the year, or be put onto a small hand truck to be carted from one job to another.

A general-purpose farm presents another sort of problem. On such farms one often has an ensilage cutter, a corn sheller, feed grinder, wood saw, etc., which he would like to operate with a gasoline engine. In addition to these there is also the pump, cream separator, and washing machine, and even possibly an electric-light plant. Under such conditions the logical answer to this question is naturally, get two engines. One would be a small engine of from 1 to 3 horsepower mounted permanently in the well house or farm shop. The other would be a larger engine. Its size would depend on the power needed to drive the largest of the power-driven machines one has. This engine should be mounted on a horse-drawn truck so it could be taken easily from one machine or job to another. Of course if one's needs and conditions are such as to warrant the purchase and use of a tractor, it will do away with the necessity for this larger portable engine, and the whole problem will simmer down to this simple one of one small engine.

The Small Farm Has Peculiar Needs

But a great many farms do not need and cannot use a tractor advantageously. Their needs will be more economically supplied by the moderately large portable engine mounted on a horse-drawn truck. Many farms in the older established, more highly developed regions of the country that are now depending on the commercial power plants of the community, which started with and have grown out of the neighborhood threshing outfit, will find that their needs will be supplied better and in the end cheaper and more economically if they own small power-driven machines of their own, and a moderately large portable gasoline engine to drive them. To many such farmers I would commend a serious consideration of the advisability of purchasing such outfits. This is because that often the income one makes from certain crops depends very largely upon certain tasks in connection with them being done at definitely important times. And all too often someone else rather than one's self has the use of the commercial outfits at these important times.

When one has decided that he can

use advantageously only one engine he naturally asks himself what size engine would the most satisfactorily serve his needs.

Often one's needs will be supplied by a small engine mounted permanently in one place. The principal work which it will do is to pump the water. Possibly it will also be used at various times to run the washing machine; night and morning to run the cream separator; sometimes to run the grindstone. Under such conditions the best arrangement is a small shop with a simple line shaft, the line shaft run by the engine, and the various machines run from the line shaft.

For such conditions a 1½-horsepower engine is generally amply large. Such an engine will run the ordinary well pump to supply all the water needed on the average farm. It will furnish an abundance of power for the other machines mentioned. It will also operate an electric-light plant that is plenty large enough for the ordinary farm.

Don't Get Too Big an Engine

And, from all standpoints to be considered, the most economic engine is the smallest one that can be used to operate the largest machine without overloading the engine. It is foolishness and a waste of good money to buy a 4-horsepower engine to do work that a 1½-horsepower engine will do just as well. It needlessly increases the original investment or first cost. It also increases the operating expense: a 4-horsepower engine will not develop 1 to 1½ horsepower on the same amount of fuel as will a 1½-horsepower engine.

But where one has a large amount of grain to harvest and expects to operate a small hay press or feed mill or wood saw in addition to doing the things mentioned above, a larger-sized engine will be found the best. Here I would strongly advocate one of the light-weight, high-speed "binder engines."

Such an engine can be mounted on the binder during harvest and on the corn harvester when filling the silo or cutting fodder. The rest of the year it can be mounted on a light hand truck to be pulled around from one job to another. This type of engine is throttle-governed, and the governor can be set to run at any one of a wide range of speeds. To develop its full capacity of about 4 horsepower it runs at something like 800 revolutions a minute. To operate a slower-powered machine requiring only about 2 horsepower it may be set to run at about 400 revolutions, and the necessary size of pulley be used to give the required speed to the machine. Under such conditions it will develop the smaller power practically as cheap in fuel consumption as will the regulation 2-horsepower engine, especially cheaper than will the regulation 4-horsepower engine with only one set speed.



Live Stock and Dairy

Filly Resists Bridling

By David Buffum

"PLEASE tell me," writes a Pennsylvania subscriber, "how to handle a young mare coming three years old, that will not allow me to touch the top of her head, and if I attempt it she will fight me. In order to get the bridle on, I have to tie her down to a post. We have had the bridle on her but three times."

The trouble with this filly probably started in not having her become accustomed to handling as she grew up. Colts should be accustomed to having their ears handled from infancy. The same is true of their feet, and in fact of every part that is likely to be handled when they are grown up.

There is a possibility that the inside of her ears may be sore, and the first thing to do is to examine the ears thoroughly to find out whether this is the case. If not, your filly simply needs to be made to submit to the handling of her ears. Lengthen out the headstall of your bridle so that it is as long as she can wear it without the bit slipping out of her mouth. Now tie up one forefoot so as to make her stand on three legs. Then put a twist on her nose. Run the handle of the twist through the bridle so that the bit is in position to be put into her mouth. Let an assistant hold the twist but be careful in its use, for it is capable of causing extreme and unnecessary pain if not used with judgment.

Be Careful of Her Ears

Now, open her mouth with your left hand and, raising the bridle with your right, slip the bit into her mouth, but be careful not to touch her ears. Now, holding the bridle so high that the bit is up to the top of her mouth, carry the top of it back till it is back of her ears, and drop it down where it belongs. If the headstall has been lengthened as I have directed, only the tips of her ears will have to be touched in this operation, and with the twist on her nose she will scarcely notice this.

Now remove the twist and release her tied-up forefoot. If she is excited soothe her a little, and as soon as she is more quiet repeat the whole operation. Do this several times, being always careful to touch only the tips of her ears. When she submits to the operation quietly, slacken the tension on the twist. In a little while she will allow you to put on the bridle without the twist, provided you still use the same care about her ears. Next, let her stand on all four legs instead of three. Use your lengthened headstall and continue to be very careful about her ears until her nervousness about them has perceptibly abated; then, by slow degrees, shorten the headstall until it is the proper length.

As I have used the above treatment with perfect success upon some very bad cases of "bad to bridle," I can assure you that your filly can be rendered perfectly tractable by its application. But I have long since learned that it is one thing to give detailed instructions for the cure of a vice and another to have them carried out with the judgment which will assure success.

This judgment must be supplied by yourself: you cannot get it from any horseman or any horse book. To succeed you must be very painstaking, very patient, and remember that success cannot be attained in a minute.

Another Dog-Cursed Locality

By C. H. Rust

HERE in northwest Louisiana we have free range for all live stock except hogs. The winters are short and mild and the range good.

We could raise sheep with great profit but for the dogs. Hundreds of these household pets and neighborhood nuisances prowl around by night and day, seeking what they may devour.

No man can raise sheep where this is the case.

Many years ago there were numbers of sheep in this vicinity. Some progressive farmers bought good-blooded sheep and tried to make them profitable. One man had his flock in a pasture with a very high fence around it. He raised enough to prove that there is good money in the business, but his high fence was not complete protection for his sheep.

On one occasion he poisoned a carcass that had been left, and killed a dog belonging to one of his neighbors. This

caused enmity, so the sheep owner sold out his entire flock at a sacrifice to avoid further trouble.

We are admonished and advised to raise a living at home, to raise live stock and quit raising cotton, yet we are balked in one of the most profitable lines of stock-raising on account of worthless dogs.

Is this the case in other parts of the country?

If not, how do they manage the dogs and dog owners? Why will people cling so to the canine family instead of making pets and companions of horses, lambs, and calves?

Last year one neighbor of ours was forced to kill a valuable mule and another neighbor a fine Jersey cow because these animals had been bitten by a mad dog.

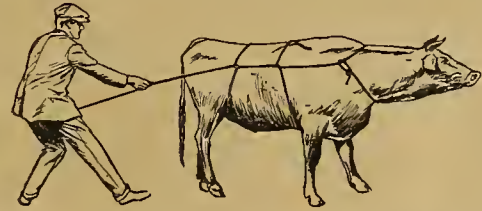
Nobody was responsible for the dog, so it was a clear loss to the stockman.

OUR consul at Calgary, Canada, states that the attempts made there to domesticate the silver fox are meeting with success. One "ranch" comprises four acres fenced with wire netting buried several feet in the ground at the foot to keep the animals from digging out. Twelve pairs of foxes have multiplied until there are 37 animals in the pack. There are a dozen or more of these ranches scattered from Calgary to the Peace River country. The foxes do as well as in the first site of the fox industry, Prince Edward Island. The business is still in the "Belgian hare" stage—the foxes are grown for breeding purposes rather than for the actual production of things people consume.

To Throw a Steer

WHEN doctoring cattle or examining them for disease, the first step usually is to throw them. You can make yourself a great deal of work throwing a steer, or you can do it with very little effort by using the method illustrated.

First make a loop in the end of a stout rope, put the loop near the shoulder of the animal, and then after placing the rope around its neck run it through the loop. Take the free end back to the middle of the steer's back and put it



around the body just as if you were tying a package. Repeat the same hitch again in front of the hip.

Brace yourself, give a good tug at the rope, and the steer will go down gently. Tie both the front and hind legs, have a man sit on the animal's head, and you are in a position to examine the feet or any part of the animal in perfect safety.

One for Every Child

"A PIG for every child" is the slogan of Secretary Jewell Mayes of the Missouri State Board of Agriculture. "Where a man's treasure is, there is his heart also." It's just the way with the child, too. Give him treasures on the farm and there will his heart be also—and he won't be so likely to drift away.

W. D. McKee, a Missouri farmer, has raised the long howl in the Missouri institutes "sheep on every farm." In addition to the reasons generally given for keeping sheep, he shows that such pests as weeds, army worms, chinch bugs and other pests are successfully fought by the flock of sheep which eats up their shelters and turns them into money. Why not "a lamb for every child," too? They made nicer pets than dogs—and Jo Wing says that if the sheepmen of the country would make every family of non-sheep-keepers a present of a lamb it would do more to eliminate the dog evil than anything else could do.

Give Them Freedom

By E. W. McNeer

IN NOVEMBER, 1913, I bought 14 ewes for \$60. I lost one during the winter, and one ewe lost her lambs.

June 1914, Sold 56 lb wool @ 25c...\$14.00
July 1914, Sold 8 lambs 41.60
Oct. 1914, Sold 6 lambs 27.50

Total.....\$83.10

This shows a gain of \$23.10 for lambs and wool over the price of the ewes, and I have the 13 ewes yet, in good condition. The lambs came during the last half of April, 1914. The ewes ran during the winter and spring on rye pasture, which kept them in good condition and furnished a bounteous milk supply for the lambs. But little grain and roughage were fed. There is nothing equal to a good rye pasture for breeding ewes. At

least I think so here in West Virginia.

This bunch of sheep was not sheltered a single night during the past year, yet the weather at some seasons was very severe. This may not be a good practice, yet it does seem that proper rations and freedom are what the sheep most need.

Fine! But How Much Easier With a Silo!

By Geo. W. Brown

FOR several years we suffered loss in the dairy department of our farm by summer droughts. As usual, 1914 came to us with its drought period, and our cream buyer with his usual story: "Cream is falling off so much since the drought that I can afford to make the drive but once each week. Can you keep your cream a week?"

We could, and did, and our cream did not fall away in supply, for we were fixed for the drought and beat its game. We could have done it with a silo, but we had none, and so used our brains.

Knee-deep clover pasture abounded in May, and our three Jersey cows made us \$20.73. Still plentiful in June, and netted us \$21.17. Early in July we saw the pinch coming, so we bought \$3.50 worth of mill feed, corn, oats, wheat, bran, and one part cottonseed meal, and fed each animal one pound daily for each three pounds of milk produced. Our receipts were \$21.80.

Early in the spring we had prepared an acre plot, planted to early corn and pumpkins. The first day of August we began chopping off green fodder and feeding pumpkins, and dropped the mill feed after the first week. The cows consumed one fifth of this acre of corn during August and netted us \$18.26. In September we still continued the green corn, and pumpkin ration, finishing up one half of the acre and netting us \$19.19. Then we cut up the remaining half of the acre into shock as it ripened, and began upon another planted later for soiling purposes.

We fed five 144-hill shocks from this plot, at a probable cost of \$1 per shock, and supplemented with cull pumpkins. Our receipts for October were \$19.70.

Compare these items:

- From clover pasture\$20.73
- From clover pasture 21.17
- From pasture and mill stuff 21.80
- From green fodder and pumpkins... 18.26
- From green fodder and pumpkins... 19.19
- From green fodder and pumpkins... 19.70

You see it is the owner's fault and carelessness that the summer and autumn cream and butter supply on the farm fall short.

MORE blackleg in the country than for years. Keep a sharp lookout for it, and get the bad news to the veterinary authorities as soon as possible when it appears. There's a remedy for it—vaccination—which only veterinarians can successfully administer.

SAVE-THE-HORSE

(Trade-Mark Registered)



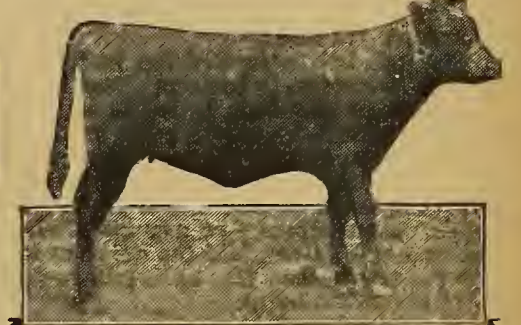
BOOK FREE

Our Advice Helps Him

J. H. Peters, Nos. 26-38 East Congress St., Detroit, Mich., writes: I wrote you sometime ago regard to ringbone. I did as you advised, and I wish to state that the horse is cured. I have given her severe drives ever since, without any trace of lameness. This was a severe case, and the horse a valuable one. I want to thank you for helping me.

WE ORIGINATED the plan of treating horses under signed Contract-Bond to Return Money if Remedy fails on Ringbone—Thoroughpin—SPAVIN—or ANY—Shoulder, Knee, Ankle, Hoof or Tendon disease. 19 Years a Success. Our Charges for Treatment ARE MODERATE, BUT WRITE and we will send our "SAVE-THE-HORSE BOOK"—it is the Quint-Essence and last word of UP-TO-DATE knowledge and practice on ALL LAMENESS. We also send Sample Contract and ADVICE—ALL FREE (to Horse Owners and Managers—Only). Address

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Look Out For Lockjaw

It is Important That You Think What It May Mean to You Too

By Herbert Quick

ON THE farm this year two horses died of lockjaw. One stepped on a nail in town. It was not much of a nail, but the horse died in less than ten days.

The local veterinarian administered over 100,000 units of tetanus antitoxin, but it did no good to anyone but the doctor. It brought him \$15.

The other horse cast a shoe while at work on the farm. One of the men nailed it on again. He drove one nail a little deep into the foot, as an unskilled man is likely to do, and as blacksmiths frequently do through carelessness or lack of skill. The infection of lockjaw was driven in with the nail, and the horse died.

Let us look into the causes of this loss of nearly \$500 in horseflesh within a month on one farm.

The nail in the foot of the first horse was an unavoidable accident. But if the veterinarian had been called in as soon as it occurred he might have used the antitoxin, and by injecting a third as much of it as was wasted after the disease appeared would have saved the horse at an expense of say \$5. When the nail was driven into the quick of the other horse's foot the antitoxin would have saved the horse.

Why Rusty Nails Are Dangerous

The germs of lockjaw are found in the ground. Wounds from rusty nails are very apt to cause lockjaw in man or animals because nails usually get rusty on or in the ground. A barbed-wire wound will be likely to cause this fearfully fatal disease if the wire is on the ground; but no matter how rusty the wire, if it is hanging in the air it will not cause lockjaw.

The bottom of the horse's foot was covered with infected dust or earth, and the man who drove the nail in drove in the germs with it. When a blacksmith pares the hoof before applying the shoe he usually pares off the germs, and disinfects the hoof with the hot shoe.

Even when care is taken in driving the nail the sole of the foot should be pared or disinfected before driving the nails. Usually it is better to have this done by a smith. He knows how.

Lockjaw gets its name from the characteristic symptoms—setting of the jaws. Usually the first sign is stiffness of the legs. Then the eye develops a

sunken look, the tail becomes raised, and finally all of the muscles set and the jaws lock.

The tetanus antitoxin will not save life after the disease appears. Therefore, when a person or valuable animal receives a wound in any way which re-

sults in earth or dust getting into it, a physician or veterinarian should be consulted, at once. Not in two or three days, but at once.

Lockjaw is among the most fatal of all diseases. Everything should be done to ward it off. Open the wound, and if

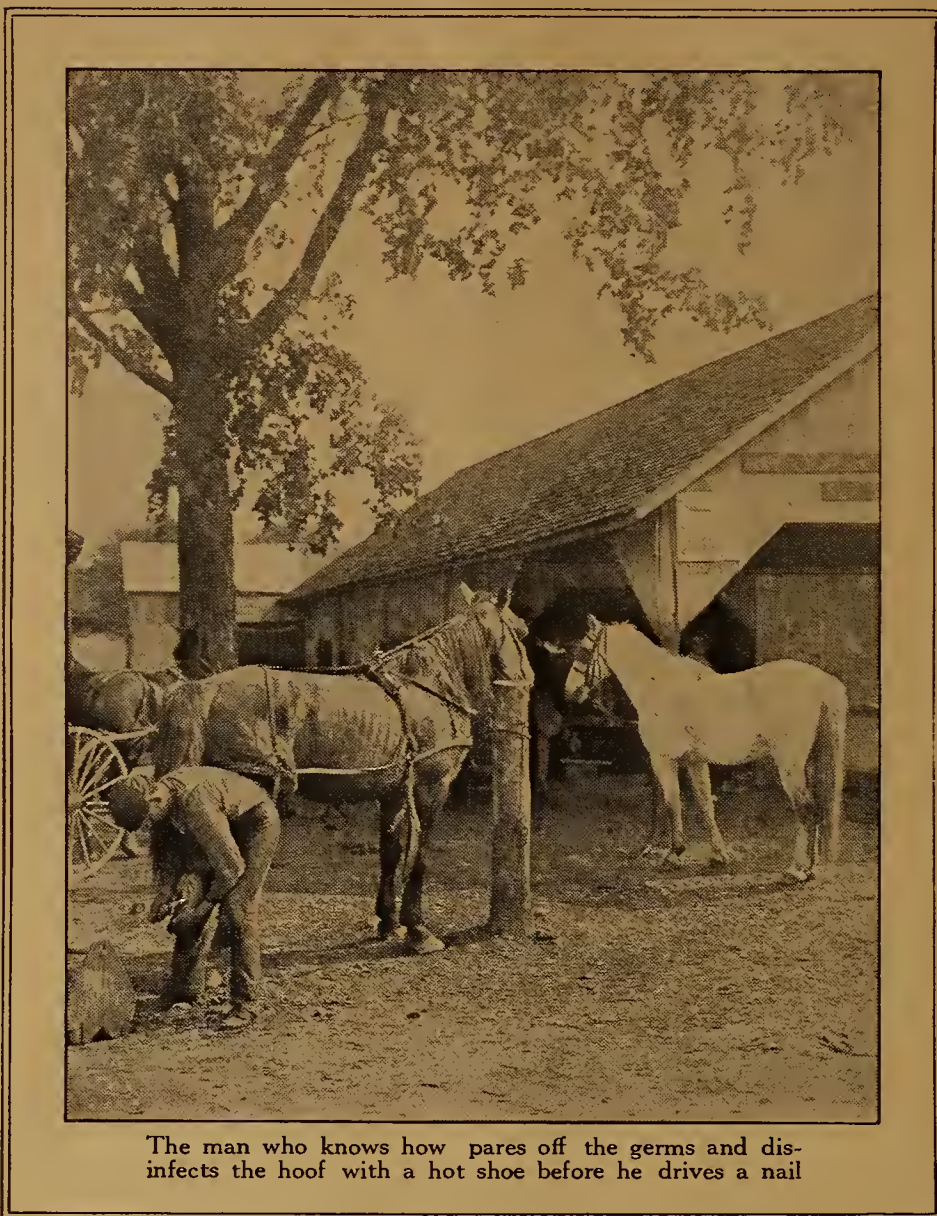
possible apply the lips to it and suck the blood and infection out of it. Treat it with vinegar, gasoline, alcohol, bichloride of mercury, camphor, turpentine, peroxide of hydrogen or any liniment which contains a large percentage of alcohol. These things can be done at once. Then consult the professional man.

Lots to Learn

THERE is still a great deal for us to learn about the things that make up a feeding ration for either our live stock or ourselves. We have been taught that if we fed the right proportions of digestible protein, carbohydrates, and fats we were doing our duty as well as it could be done. But the chemists are discovering that the muscle and bone forming part of the feed which we call protein is not the same thing in different feeds. Some protein will keep an animal going but will not cause it to grow. There is a substance called lysin in most proteins. Two experimenters found that young animals refused to make any growth when fed on protein which contained no lysin. The addition of lysin seemed to cure or to supply the lack. The feeder of the future will know how to take the poor protein and make it good by the proper sort of treatment, but he will of necessity be a student of the matter.

There seem to be just as many differences between carbohydrates and fats as between proteins. The young rats would not grow on a ration of purified protein, starch, milk with the natural protein removed, and commercial lard; but when the fat of milk was added the animals grew finely. In other words, butterfat is a different fat from lard or tallow. There is an acid in it which is necessary for growth. The same "growing fat" is found in the yolk of eggs—another fat made by the mother for the nourishment of her young. This is the fat of butter. The non-growing fat is the fat of oleomargarine. We have always been taught to think that cod-liver oil is fine for growth, and these investigations show this to be a fact.

We are just beginning to learn the truth about feeds and foods—a part of the truth. In every branch of our farming practice a new body of truth equally important is discerned like a mine ready to be worked.



The man who knows how pares off the germs and disinfects the hoof with a hot shoe before he drives a nail

Wheat—57 Varieties, But 51 Were Turned Down

Standard Palouse Wheats

By E. F. Gaines

OF THE 57 varieties of wheat grown in the portions of eastern Washington and northern Idaho known as the Palouse and Big Bend regions, 51 might well be discarded. This great variety is responsible, in part, for the expensive and wasteful system of handling the grain in sacks; and until we learn to raise a more uniform product the elevator cannot be successfully used, nor can the miller grind his flour economically. There are only some half-dozen wheats that stand out as superior types.

Throughout the drier sections winter wheat should be grown almost exclusively. Turkey Red and Winter Fife

tage of growing well as either spring or winter wheat, so that in case a field winter-kills, the same variety may be planted the following spring, and there is no danger of mixing varieties. Hybrid No. 143 has such a stiff straw and packed head that it has been known to stand in the field for six weeks after it was dead ripe, without serious loss.

When sown as a spring wheat, Little Club has the advantage of ripening somewhat earlier than Hybrid No. 143, but there is little else to be said in its favor, and it is grown much less than formerly.

In regions where the rainfall is less than 18 inches Blue Stem is the safest spring wheat to sow in case the winter wheat blows out, winter-kills, or when no seeding is done in the fall. Blue Stem is one of the best milling wheats, ranking with Turkey Red in this respect.

Red Russian is another popular wheat, especially around Garfield (Washington), where it is called the "Mortgage Lifter." Though very poor for milling,



Six of the best: Little Club, Red Russian, Blue Stem, Turkey Red, Winter Fife, Hybrid No. 143

it yields well, makes excellent hay, is good feed for stock, and will do more with its rank growth and dense foliage toward holding the weeds in check than any other variety grown in the Palouse country.

Forty Fold is still grown extensively in some sections, but it has such poor milling qualities and shatters so badly that I have left it out of the desirables.

California Wheats

By John W. Gilmore

ACCORDING to census figures for the twelve years ending 1911, the acreage planted to wheat in California has declined more than 82 per cent. This decline in acreage has been steady—in only two instances has there been an increase in acreage over the previous year. The millers claim that there has also been a decline in the flour-making quality of the wheats raised. These facts may be due to a number of reasons.

The usual practice in California has been to allow the grain to stand in the

field for several weeks after it is mature. Consequently the tendency not to shatter is a characteristic highly prized in the varieties grown, although they may not be of high yield nor of good quality. The White Australian and the Club wheats, which are the most widely grown varieties in California, do not shatter readily, and are therefore desirable in this respect, but they are not heavy yielders, and are relatively low in protein, hence of inferior milling qualities.

The California Experiment Station and the Department of Agriculture have jointly conducted tests in various parts of the State for several years. The results of these trials would indicate that the Chul and Fretes wheats are superior to the commonly grown varieties, both in



Three views of Blue Stem, one of the most popular wheats in countries of scant rainfall

have more points in their favor than any of the other winter varieties. Both are drought-resistant, and even under adverse conditions the straw grows long enough for the grain to be cut with a header. They are two of the hardiest wheats grown anywhere. Turkey Red has the advantage of making better flour than Winter Fife, and therefore brings a higher price on the market.

Heavy Rainfall Means Much Straw

Where the rainfall exceeds 20 inches these wheats are likely to grow too much straw, which may cause them to lodge. Under such moisture conditions, Hybrid No. 143 develops best. It has the advan-



Little Club, a common spring wheat in the Northwest. California also raises club wheats

yields and milling qualities, and quite equal to them in adherence to the chaff while standing mature in the field. During a three years' trial of a number of varieties at Modesto and Ceres, these varieties yielded on an average of: Chul 41.7, and Fretes 46.5 bushels per acre, while the Australian and Club yielded 32.6 and 29.5 bushels respectively. The average yields of wheat for the State as a whole during those years was 14.5 bushels per acre.

The milling qualities of these wheats were pronounced satisfactory. They both showed a higher gluten content than the other wheats, and the bread from their flours ranked high in texture and flavor.

What's the Best Kind of Wheat?

A FAIR question, and an important one. Lots of us are sowing wheat of any old kind without asking ourselves the question. Farm and Fireside has asked it of men who have grown different sorts and compared the results. They know. From time to time they will tell you in this paper what they have learned. In the meantime, "Ask Farm and Fireside" if you have any questions about your conditions that these accounts do not answer.



Crops and Soils

Starting In on Fertilizers

THE best fertilizer for the average farmer is stable manure. The trouble is that no farm can produce from its own fields all the manure it needs.

The farm which buys feed and thus gathers manure from other fields may make up its losses, and even gain in fertility. Or manure may in some cases be hauled from towns and cities at a profit. Those of us who are so situated as to do these things are fortunate; but we are exceptions. We buy what other farms lose.

Nitrogen can be taken from the air by means of leguminous crops, but the supply cannot be kept up unless the crops are plowed down once in a while. A field of clover or alfalfa from which the hay is taken off does not gain in nitrogen. In many cases it actually loses. More goes off in the hay than the plants take from the air.

Phosphorus in the form of the ground raw rock is cheapest, but whether or not it brings the best results for the dollar invested is a question of particular conditions. Acid phosphate supplies some sulphur which the raw rock does not, and sulphur is needed on some soils.

Potash is generally present in plenty, but whether it is in such a state that the crops can take it up is always a question.

Western farmers must judge for themselves when it becomes profitable to buy fertilizers. Nobody can tell them. The soil alone can tell. Ask the soil. It is bad policy to put off the day of buying fertilizers on the theory that it is an evil day. If it pays, it is not an evil, but a good day.

Many of those who have been free from the necessity of buying fertilizers may be making a mistake in holding off. The best way to tell whether or not we are doing so is to ask the soil. This may best be done by easy experiments which can be carried on on any farm. If in any field the application of commercial fertilizers to a small piece improves the crop, it is a sign that the owner of that field had better try fertilizers on a little larger scale. If the application pays for itself, then it becomes a mere matter of dollars and cents.

The commercial fertilizer is a machine, a tool, an equipment of farming. Some do not need it; some do. The man who needs it to make his fields pay, buys it exactly as he buys a gasoline engine, a silo, or a breeding animal. It is not a matter of sentiment, but of wise business policy. He must work the problem out himself.

Use Cotton

ONE of the great flouring mills has adopted the policy of using cotton bags for its flour wherever the trade can be induced to accept them. This should be perfectly easy, except in certain foreign lands where the people, for some reason, prefer jute bags.

American merchants can help the greatest industry in the United States by pushing on the market the beautiful table and bed clothes made of cotton. They are fully the equal of linen in appearance and in serviceableness.

Cotton wrapping twine has been adopted by the government departments at Washington, instead of the hemp and jute fibers.

For all purposes for which cotton is adapted in price and quality, cotton should be given the preference. "Buy a bale" is a good slogan, but the millions who can buy only a tiny fraction of a bale may do so by giving preference to cotton where possible. By so doing they will serve the nation's greatest and most depressed industry—and save money.

Canned Thistles

EVEN thistles are better than no fodder. In fact, that so-called weed pest of the Rockies and adjacent States made good last year for farmers who had pit silos and stored the thistles.

The Russian thistle analyzes nearly as rich in food nutrients as alfalfa, but is so woody and distasteful to stock (until it is softened by fermentation and heat in the silo) as to be of little value after it has attained full growth.

Many farmers in the semi-arid areas put into their pit silos in 1913 all of the scant fodder crops raised, then filled in

all the Russian thistles and other weeds they could gather, running in plenty of water while putting the weeds into the silo. The silage thus secured furnished a very acceptable source of income for dairies when dairymen without silos were going on their "uppers."

The chief objection we have received from users of Russian thistle silage is the amount of dirt and grit in it. A sample examined several years ago was actually muddy. With ample facilities for washing the thistles this could perhaps be overcome, or perhaps some reader has a better way.

Pit silos were built in 1913 by two thousand farmers in the dry-farming districts of Colorado, Kansas, Oklahoma, Texas, and New Mexico.

Protects Hands From Stalks

By M. Coverdell

WHEN cultivating corn that had reached a good size, or in using a drill when sowing grain in corn rows, my hands used to get badly rubbed by the heavy stalks and ears of corn. So I tacked two pieces of heavy leather onto the outside of the cultivator handles 6 inches ahead of where I grip them. The stalks and ears rub over the leather instead of the hands.



"What made you slap him, Bill?"
"Why, he insisted he was over forty years old, and he's not out of his shell yet."

Starting Gasoline Engines

IN COLD weather more or less trouble is experienced in starting gasoline engines, regardless of the type. The Nebraska College of Agriculture offers these suggestions to help out:

1. Fill the water jacket or radiator with hot water.
2. Heat the gasoline by putting a bottle of it in hot water, being careful to keep the cork off the bottle containing the gasoline.
3. Place a few drops of ether in the priming cup or spark-plug hole. The last method is inexpensive and is used by many motor owners.

Our Schools Demand It

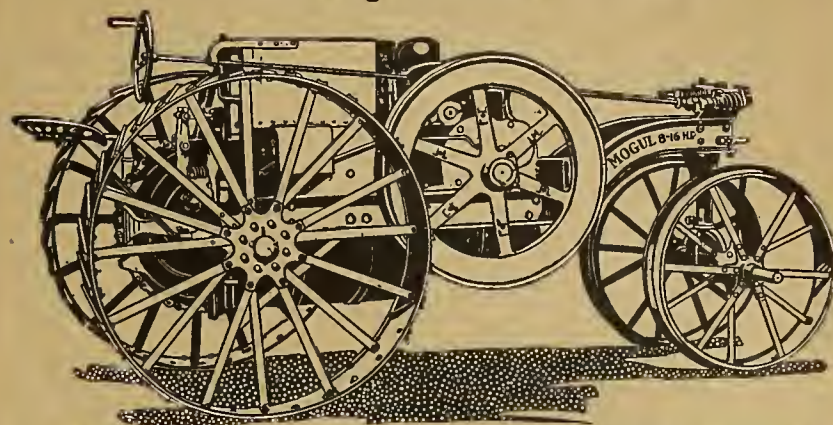
THERE should be more men in the schools, more young men in the training schools for teachers everywhere. The boys need more men as teachers, so do the girls. Two or three generations ago there were not enough women teachers; now they are coming in many places, almost to monopolize the work of teaching. In Denmark, according to J. H. Smith, a recent observer from the United States Bureau of Education, the school teacher in the country is almost always furnished with a house, barn, and a few acres of ground. His tenure of office is for life or good behavior. He is of course interested in learning and skilled in music and in civil affairs. He leads the music in the churches, vocal and instrumental. Naturally such men become recognized leaders of local affairs. We must introduce into the United States the home of the teacher if we would keep a fair proportion of men permanently and profitably at work in the schools of the country at large.—Colorado News Notes.

Consult the Index

Turn back to page 2 and look over the index of "Reliable Advertisements." If you want any of the goods announced, and you surely need some of the great variety listed, use that as a catalogue—your buying guide. You will find the goods are right, and the prices too.

These merchants and manufacturers measure up to our high standard of reliability, and you can patronize them with fullest confidence.

Our New Year's Announcement A Mogul Oil Tractor for \$675



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Being a four-wheeled, all-purpose tractor, you can use it every working day.

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It will draw manure spreaders, wagons, hay loaders, mowers or binders.

It will run a corn sheller, feed grinder, small shredder, thresher or ensilage cutter.

Any farmer can buy this new Mogul 8-16 tractor for \$675.00, cash, f. o. b. Chicago.

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9 sizes of sprays from one nozzle. Starts or stops instantly—saves solution and work. Send for catalog. Agents wanted. Rochester Spray Pump Co. 191 Broadway Rochester, N. Y.

EARN \$12.00 IN JANUARY
We need a local subscription representative in every village and town in your state. Salary and commission paid for both renewals and new subscriptions for *Farm and Fireside*, *Woman's Home Companion* and *The American Magazine*. For particulars, drop a card to CHIEF OF STAFF, FARM AND FIRESIDE, SPRINGFIELD, OHIO

\$5 Outfit GIVEN
This Offer For January Only

Corn Grader Given My Corn Grader that grades Seed Corn perfectly for your drop planter, now goes with my Chatham Machine. Formerly it sold for \$5.00 extra.
Wild Oat Separator Given My new Wild Oat Separator can be had in place of the Corn Grader Apparatus. GIVEN, remember, with any Chatham, New Gang takes out every Wild Oat—from wheat, barley and flax—gets them—EVERYONE.
I announce for the next 30 days absolutely the lowest prices and most liberal terms ever known. This Offer Extraordinary is made possible only through tremendously increased sales and consequent reduction in factory costs.

Reduced Prices The total cost of my Chatham Grain Grader and Cleaner with all equipment and attachments is almost \$10.00 less than a year ago. That's an astounding saving on a machine of this kind.

Liberal Credit I now sell for cash or on long time credit, requiring no security except your personal promise. You can wait till next October to pay, if you wish.

Free Trial I now ship on wide open free trial, no matter where you live—no money down—no deposit—no notes or promises to pay until you have had a full month's home test and have decided you want to keep the machine.

Write This offer is so special that I reserve the right to withdraw it in 30 days. If you want to take advantage of it ACT AT ONCE.
Send Postal today and get, by return mail, my Special 30 Day Proposition and Free Book, THE CAMPBELL SYSTEM OF BREEDING BIG CROPS.
The Manson Campbell Company Dept. 102 Detroit, Michigan Kansas City, Missouri Minneapolis, Minnesota

Chatham Grain Grader and Cleaner, with 1915 equipment, handles practically every Grain and Grass Seed grown on American Farms.

WHEAT & RYE
Removes Wild Oats, Chess, Cockle, Wild Buckwheat, etc., from ALL kinds of wheat. Grades all varieties; excels hand picking.

OATS
Removes mustard, kale, wild peas, quack grass, cockle and other ordinary weeds. Blasts straw joints, chaff, thistle buds. Separates timothy, wheat, vetch. Grades out twin oats, pin oats, hull-oats. Makes perfect grade for drill.

BARLEY
Brewers and seed grade free of Wild Oats and Mustard or any other weed.

BEANS & PEAS
Cleans, grades and removes splits and defectives from 18 varieties, including cow peas.

CORN
Blasts corns, chaff, silks. Removes broken earhals, shoe pegs, tips, butts and uneven kernels; grades flat, even grains for 98% perfect crop.

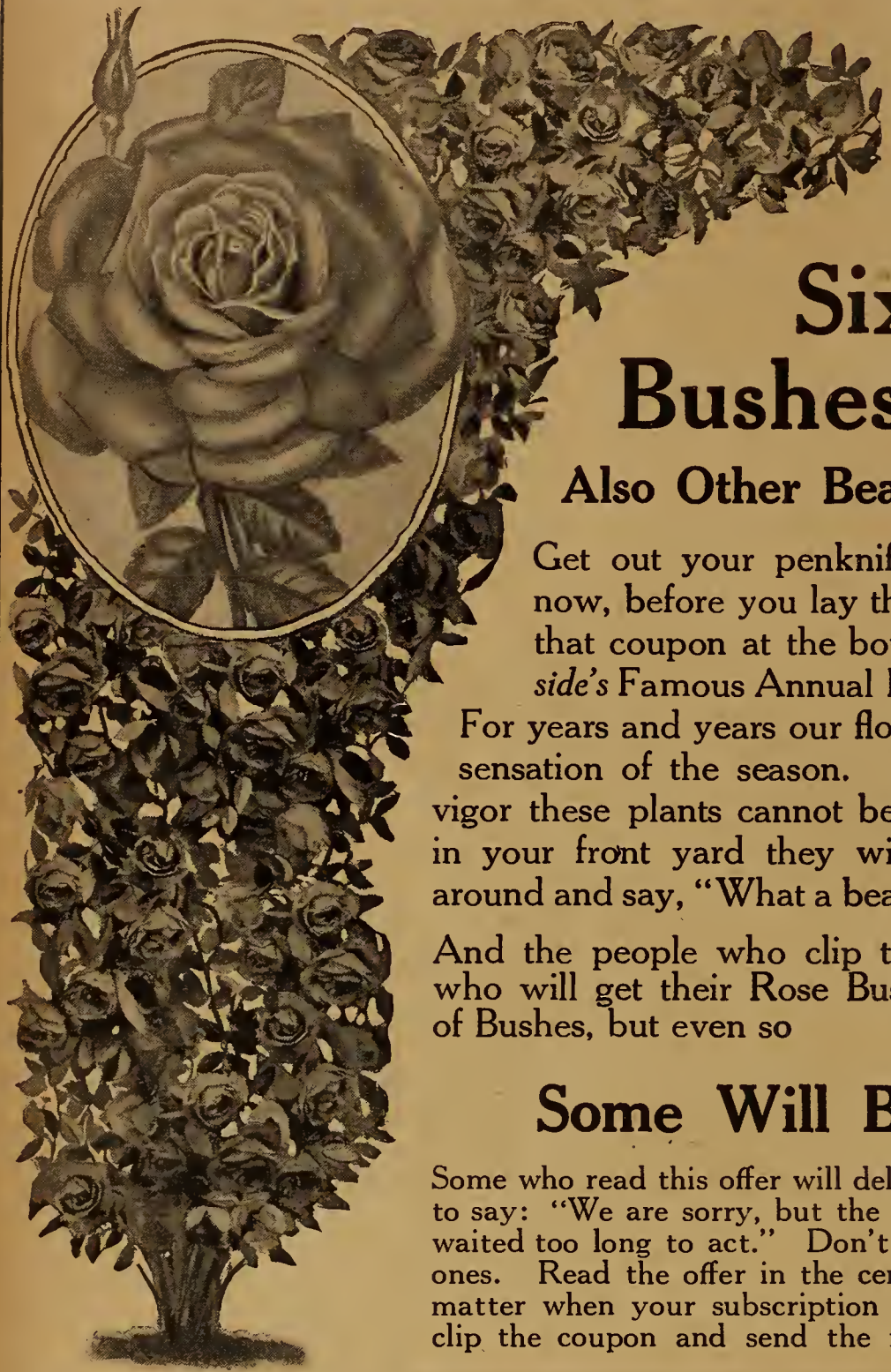
CLOVER
Removes buckhorn and 62 other weeds without waste.

TIMOTHY
Removes plantain, pepper grass and 33 other weeds. Saves volunteer timothy from oats and wheat.

ALFALFA & FLAX
Removes dodder and foxtail; heads, stems, fibers, wild oats, mustard, barnyard grass, false flax, broken wheat. Blasts out shrunken, frozen or droughted seed.

Backed by my Free Service Dept. (extra screens and sieves free) I guarantee you can do all these things.

\$10.00 Prize for the Best Photograph of Roses Grown From the Plants We Send to All Who Accept this Offer



Six Rose Bushes For You

Also Other Beautiful Collections

Get out your penknife or your shears right now, before you lay the page down, and clip that coupon at the bottom. *Farm and Fireside's* Famous Annual Rose Offer is now ready.

For years and years our flower offers have been the sensation of the season. For beauty, variety and vigor these plants cannot be beaten. When planted in your front yard they will cause people to turn around and say, "What a beautiful place that is!"

And the people who clip the coupon are the people who will get their Rose Bushes. There are hundreds of Bushes, but even so

Some Will Be Too Late

Some who read this offer will delay, and to them we shall have to say: "We are sorry, but the roses are all spoken for. You waited too long to act." Don't be among these disappointed ones. Read the offer in the center of the page and then—no matter when your subscription to *Farm and Fireside* expires—clip the coupon and send the few cents at our risk, NOW.

To Get Your Flowers

1. Send the coupon with just \$1 bill (no cost for money order—we take the risk). We will send *Farm and Fireside* for three years and all six Rose Bushes or your choice of the other Flower Collections, all charges prepaid.
2. Send the coupon with only 50c at our risk. Also send the names of three friends whom you think would like to see a copy of *Farm and Fireside*. We will send *Farm and Fireside* for one year and all six Rose Bushes or your choice of the other Flower Collections, all charges prepaid.
3. Send us a club of two one-year subscriptions to *Farm and Fireside* at 35c each. We will send you all six Rose Bushes or your choice of the other Flower Collections, all charges prepaid. You will be entitled to an extra Flower Collection for each additional subscription at 35c each.

Complete directions for planting will accompany each Flower Collection. Unless you request otherwise, your plants will be held at the greenhouse until the right time in your locality for planting.

Please mail your order before February 5th and you will be certain to receive the Flower Collection that you may select. But we cannot promise to have any roses left after that date.

Do You Prefer Other Flowers

Six Lovely Carnations—For beauty daintiness, color, fragrance and ease of culture, the Carnation has been well named the "Divine Flower." The collection consists of the following varieties: Lady Bountiful, Prosperity, Enchantress, Red Sport, Eldorado, Mrs. Thos. Lawson.

Four Elegant Ferns—Ferns are easily cultivated and lend a distinctive touch of elegance to the home. This collection consists of the following varieties: Boston Sword, Plumous Nanus, Nephrolpis Compactus, Sprengeri.

Six Gorgeous Chrysanthemums—The plants in this collection are the finest obtainable, selected for their giant blossoms and the splendor of their colors. This collection consists of the following varieties: Black Hawk, Col. D. Appleton, Millicent Richardson, Pacific Supreme, Percy Plumridge, John K. Shaw.

Six Choice Gladioli—The most attractive of summer flowering bulbs. This collection consists of the following varieties: Canary Bird, Ceres, Mme. Monneret, Marie Lemoine, May, Mrs. Beecher.

All Six Superb Roses Will Bloom in 1915

Climbing Beauty—Think how lovely the front porch will look with this fragrant bush dropping its big blossoms over it. It is much like the American Beauty, with the climbing habit. This plant will sometimes grow from 15 to 20 feet in height.

Antoine Rivoire—"There was a rough spot near our front gate," writes a reader, "but the Antoine Rivoire which you sent me turned it into a beauty spot." It has large full flowers, rosy flesh in color.

Crimson Bedder—"People driving along the road almost always stop and look at our Rose Bushes," says another subscriber. The Crimson Bedder is the very best of all roses for bedding. The flowers are large and fiery scarlet in color. A bush of these roses produces a mass of red equal to a whole bed of geraniums.

Pink Maman Cochet—Its buds show great depth, sometimes measuring 2½" from base to tip. The color is rich clear pink. "Ours is an ordinary house, but the roses are the most beautiful thing in this part of the country," writes another subscriber.

Perle des Jardins—"It makes me feel good to hear them say, 'How lovely that place is!' I want to thank you for sending the rose bushes," writes an Iowa subscriber. This is probably the best-known yellow rose grown.

White Baby Rambler—This rose is delicately tinted and full of clusters. Its flowers bloom with the unceasing freedom of the reds and pinks of this class. "I have flowers in bloom to-day from plants you sent me several years ago," writes Elizabeth Garfield of Auburn, Mass.



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 For the \$..... enclosed at your risk credit me with
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How the Farmers of Western New York Are Keeping Their Orchards Free From Pests

By W. H. Jenkins

THE control of fruit-tree parasites is important in any orchard even though only enough fruit for family use is desired. In renovating a decadent orchard the two essentials are spraying and pruning. Merely seeing the results of timely and thorough spraying is to be convinced that it pays. Most of the western New York orchardists neglect nothing that can be done to protect their trees.

I visited one of these farms to see the methods and results in spraying. On the way I saw unsprayed and poorly sprayed orchards with leaves blighted by fungus. I wondered if these farmers knew that 90 per cent of a tree's food comes from the gases in the atmosphere, and that the leaves are essential feeding organs or mouths of the tree that take in their free food; also that keeping the leaves healthy is as important as adding plant food to the soil. The apples on these unsprayed trees were small and wormy. There were also many dead branches in some orchards, showing that the blight had done its work of destruction. But such orchards were exceptional in that section of New York; most of them were in good condition.

The orchard to which I went for information on spraying was owned and operated by one of the most successful growers. When I saw his apple trees I was impressed by their large size and immense bearing surface. Trees standing 40 feet apart touched branches on all sides. The bearing wood was evenly distributed throughout the trees, but not so thick as to prevent the sunshine entering to ripen and color the fruit. I could not see a diseased leaf or twig on the trees. They were carrying a great load of apples, every one smooth. We estimated some of those trees would yield 40 to 50 bushels of apples. This is the kind of orcharding that has returned in some instances gross sales of \$1,600 per acre.

The Spraying Schedule in Brief

The orchard had been cultivated with tractors and fed with clover cover crops and stable manure, but right spraying had been one of the main reasons in getting these results. The first spray is applied when the trees are dormant, usually not later than April. The solution is lime-sulphur wash, strength one part of the wash to eight of water. This is to prevent and control San José scale, and also to prevent the development of fungus diseases and blister mite.

The second spray is after the fruit buds have swelled, just before the blossoms open. The solution is lime-sulphur wash, strength 1 to 40, and 3 pounds of arsenate of lead to 50 gallons of the mixture. This spray is for apple scab, fungus diseases, bud moth, case bearer, cankerworm, and tent caterpillar.

The third spraying is done just after the blossoms have fallen. Sulphur wash (summer strength) and 3 pounds arsenate of lead to 50 gallons of mixture are used. The fourth and fifth sprays are a repetition of the third, and are given about two weeks apart and ten days after the third spray. These are to destroy codling moth, bud moth, fungus, and cankerworm. Bordeaux mixture can be substituted for lime-sulphur wash in the third and subsequent sprays if desired.

Most of the orchardists in western New York do not spray peaches, pears, plums, and cherries except during the dormant stage in the early spring.

Don't Let Dead Branches Remain

I have seen some apple and pear orchards with perhaps one half of the branches dead because of fire blight. In orchard culture no dead, diseased, or dying wood should be left on the tree as a source of infection and harbor for insects. Cut such wood off immediately on its first appearance. The necessity of the yearly examination and pruning of trees to prevent the development of blight and other bacterial diseases is apparent to every enlightened orchard owner.

In an apple orchard I visited recently, the form of the trees was almost ideal. They had been headed low, and pruned so the head was symmetrical, with an even bearing surface, without waste spaces, yet sufficiently thinned to let in sunshine to ripen and color the fruit.

"We prune our trees," said the owner of this orchard, "any time when they are dormant and we have time. We begin in late fall when leaves are off, and continue the work through the winter on mild days until spring. Our method is first to examine the tree carefully and cut out all diseased wood. Second, we cut out the smaller branches that crowd each other. Do not cut a branch over an inch in diameter unless necessary, in which case paint the end with gas tar. When there is not enough open space to allow the sun to reach the fruit some time during the day, we cut out a little wood, but no more than necessary. The greater the leaf surface the greater the

capacity of the tree to take food from the atmosphere, and the greater the growth. We want to keep the bearing surface as large as the tree will support. We favor the heading of trees moderately low, about four feet, as the spraying, pruning and picking the fruit are all more easily done."

Pruned With a Closed Center

"I notice that your trees are pruned with a closed center," I remarked.

"Yes. The trees that grow naturally and with full centers are stronger, and the bearing surface is larger, besides branches cut out of the center to get the vase form do not always heal well, so the crotch of the tree may rot and break apart."

"What tools do you use in pruning?"

"The special pruning saws with short and long handles are best, but occasionally we use pruning shears because they will cut small branches more rapidly. The main thing is to make a close, clean cut. We do not prune pear, peaches, plums, and cherries as much as formerly, but let nature have her way mostly in making a tree. Pears and cherries are pruned only to keep them in good form and to cut out diseased wood. Peaches and plums are pruned very moderately. Of course pruning should precede the spraying of all trees. It saves spray and also reduces the work of thinning the fruit."

Further inquiries brought out the following information on the benefits of thinning fruit. Some varieties of apples, as the Baldwins, naturally bear a very heavy crop every other year. The fruit that sets is usually more than the tree can develop well. Thinning the fruit makes fewer culls and more high-class No. 1 apples, which bring highest prices. Again, the growing and ripening of fruit require more of special elements of plant food than growing wood, therefore thinning the fruit reduces the draft on the tree so it is longer lived, more vigorous, and will bear more regularly.

"How many times do you thin the fruit?"

"First, soon after it has set; and the second time when apples are perhaps as large as walnuts, then they are thinned to 3 or 4 inches apart on the branches."

"You have kept account of the cost of labor and know it pays well?"

"Yes, there is no question about it. The fastest way is with the fingers when one becomes expert at it, although it is also practicable to use shears."

Farm Wit and Wisdom Condensed and Modified From Various Sources

WHEN the foot-and-mouth disease broke out, shipments of straw and hay were prohibited between many points, as fodder of all things is most likely to be infected. This opened up a new market for cottonseed hulls. The makers of glassware, who had used hay and straw for packing purposes found in the cottonseed hulls a good substitute. The price at Southern points for the hulls ranges from \$5 to \$7 a ton.

"CULTURE between the rows," says Dad Millslagle, "is always good for the crops, but it is best when you pronounce 'rows' to rhyme with 'hoes.'"

THE value of a county agent is illustrated by the work of A. A. Powell of Washington County, Oklahoma. He vaccinated for blackleg 999 head of calves and yearlings for the farmers for whom he is working. County Agent Shipman of Jefferson County, West Virginia, has given the serum treatment for cholera to a great many herds of hogs. Where there is a competent county agent the farmers may feel free from worry about blackleg and hog cholera.

WALDO THOMAS of Big Rock, Illinois, is put forth by his friends as the champion plowman of the United States. He is the only man who ever won first prize in both the Wheatland and Big Rock plowing matches.

ALL birds except English sparrows are now protected by law. The time when birds might be shot for sport and gun practice is past.

IN A Philadelphia hospital is a man whose skull has increased in thickness to the extent of an inch in nine months. In a year or two he will be in favor of laws to forbid the vealing of calves.

NO FARMER ever gets too old to learn, but the wise farmer doesn't wait until he is old to learn.

ALL things come to him who owns a piece of land and pitches in and works to beat the band.

AN IOWA farmer pays his foreman 25 cents for every pig over six to the sow which reaches the age for weaning. He likes to pay out the money, and the foreman looks upon it as clear gain. The bonus system is worth studying. It will work in other fields as well as in the piggery.

POTASH is difficult to get now, not because there are no ships to carry it, but because of the difficulty in securing railway and river equipment to move it from the mines and storehouses to the coast.

Where the soil is in need of potash it should be applied. In the attempt to meet the need, fertilizer manufacturers have agreed to utilize their present supply of potash in the effort to supply fertilizers with at least two or three per cent of potash next spring. It is believed that a supply sufficient for this purpose is already at hand in this country. In the meantime, suppose all of us take advantage of our own supply of potash in our farmyard manures.

THE man who does not know how to repair his own auto tires is losing money. A small vulcanizing outfit can be bought for a small sum of money, and pays its way many times over.

A NEWSPAPER states that British airships have been sweeping over Mount Sinai. Probably looking for the fragments of the broken tables of the law containing the commandment "Thou shalt not kill."

DON'T try to lift water by a suction pump more than 30 feet. The utmost height to which it is possible to "suction" it is 33.95 feet. The weight of the air has to do the lifting.

A GOVERNMENT report states that there is a toothpick famine in Mexico. And there are those who complain that Mexicans have nothing to pick out of their teeth.

CORN fed the sows makes their pigs fat—before farrowing. But the pigs need fat only after their eyes open on this world. Prior to that time they need only bone, muscle, and vigor. Alfalfa hay, bran, roots, and other protein-bearing feed prepare the sow for successful farrowing. Corn-fed sows are the ones which die at this critical time, more than any other.

More Lost People

FRIENDS and relatives of Mrs. Mary Miller, formerly of Philadelphia, but who went to Tacoma, Washington, about three years ago, are asked to send their addresses to Mrs. E. T. Cook, in care of FARM AND FIRESIDE. Mrs. Miller is in a state institution in Washington State, and is said to be unable to get in touch with her friends.

ALPHEUS M. SCHAEFFER, age about forty, was last heard from two years ago when working in the oil fields near Oklahoma City, Oklahoma.

Harry T. Schaeffer also has not been heard from for two years. He left Indianapolis and went to Dayton, Ohio, to work in a car shop. He is about thirty years old.

Any knowledge of either of these lost persons will be greatly appreciated by Mrs. J. T. Schaeffer, who may be addressed in care of FARM AND FIRESIDE, Springfield, Ohio.

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Blizard Belt Apple Grafts

For Testing Our named varieties of HARDY Foster Mother Root Apple Grafts make vigorous, early bearing, heavily fruiting, clean hearted, long lived trees. To prove their worth, we offer 6 Grafts (rooted) for testing, if you will send 10c to help cover cost and mailing expense. They will bear barrels upon barrels of apples in a few years' time. Catalogue telling about other Blizard Belt fruits, EVERBEARING STRAWBERRIES, etc., FREE. Write today.

The Gardner Nursery Co., Box 804 Osage, Ia.

Peach and Apple Trees 2c and Up

Plum, Pear, Cherry, Strawberry, etc.—Catalog Free.

Tenn. Nursery Co., Box 22, Cleveland, Tenn.

Money Saving And all about our Mammoth 10c Collection —20 Packets Tested Seed—Seed Catalog Biggest bargain out—over 600,000 sold. Or send 10c and get this great collection and free coupon for 10c, good on 25c order. Number collections limited—order yours today.

J. J. BELL SEED CO., Deposit, N. Y.

Strawberries

(Summer and Fall Bearing) and All Berry Fruit Plants

Strawberries and All Berry Fruit Plants mean big and quick profits for you at a small outlay of money. We are headquarters for Summer and Fall Bearing Strawberry Plants, Raspberries, Blackberries, Gooseberries, Currants, Grapes, Fruit Trees, Roses, Ornamental Shrubs, Eggs for Hatching, Crates, Baskets, Seed Potatoes, etc. Best varieties, lowest price. 32 years' experience. Free catalogue is full of valuable information. Write today.

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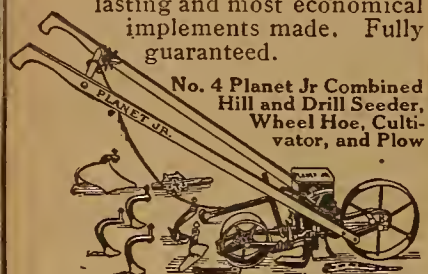
INSURE biggest and best crops by planting accurately with the Aspinwall. Just the driver required. Planter opens furrow, drops seed—any size—covers, marks next row, and if desired sows fertilizer—all in one operation.

Attach-ment for corn, peas and beans. World's Oldest and Largest Makers of Potato Machinery. Will answer personally any questions on potato growing. Send now for free booklet.

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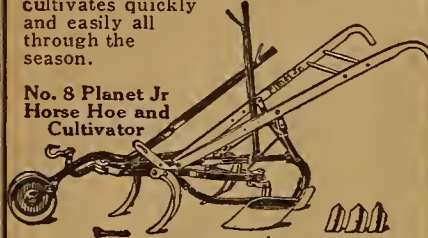
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The farm and garden tools that save your time, lighten your labor, and get bigger crops—the longest-lasting and most economical implements made. Fully guaranteed.



No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel Hoe, Cultivator, and Plow

Soon pays for itself in the family garden as well as in the larger acreage. Sows all garden seeds (in drills or in hills), plows, opens furrows and covers them, hoes and cultivates quickly and easily all through the season.



No. 8 Planet Jr. Horse Hoe and Cultivator

Stronger, better-made, and capable of a greater variety of work than any other cultivator made. Non-clogging steel wheel. Depth-regulator and extra-long frame make it run steady. Adjustable for both depth and width.

72-page Catalog (168 illustrations) free. Describes 55 tools including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard- and Beet-Cultivators. Write postal for it.

S. L. ALLEN & CO. Box 1107 Philadelphia, Pa.

Real Everbearing Strawberries

By Henry Field

I SUPPOSE you think the everbearing strawberries are a fake and a fraud and a few more unpleasant things. I don't blame you. I used to think so myself.

I had them growing in my garden for four years before I was convinced. I didn't even tell anyone that I had them, and I didn't give them a fair show. I had them crowded in an out-of-the-way corner among some other stuff, and in poor ground, but they bore all summer in spite of it, bore fairly well. All you could expect from such treatment.

But I was like the man they tell about who saw a giraffe for the first time. I was certain that "there hain't no such

the finest flavor I ever tasted. Commenced bearing as soon as they were set out, and never stopped. Bore on the new young plant as soon as they were rooted. Bore all fall until the ground froze. Spread and made plants, and blossomed and made fruit, in spite of the fact that everyone in the neighborhood tramped over them, continually looking at them and picking berries.

Big, Juicy Berries They Were

Last spring we set several acres and had berries all summer. Picked and sold a lot as late as October.

They look just like any other strawberry—that is, any other extra good



A September breakfast with berries right from my garden!

animal." Finally, though, I decided there was really something to them, so I planted them in good ground, two feet apart each way, tended them well, and gave them a decent show.

Well, I took it all back then. They yielded amazingly and kept it up all summer. Big, dark red, juicy berries of

one. They are about the size of Warfield or Dunlap, maybe a little larger, very dark red, firm, and the sweetest, spiciest berry I ever tasted.

The plant is strong and vigorous and yields enormously. I have seen as high as 100 berries and blooms on a single plant. They bear at the regular season same as any strawberry, only heavier if anything. I never saw berries bear as full as mine did the second spring (13 months from the time they were set). This after they had already borne the previous summer.

Then they keep on bearing and blooming all summer without a stop. Not so heavy as they did in June, but some berries all of the time, and an extra heavy setting in September and October. They are the only strawberry that will give you any returns the first season you set them. With the ordinary varieties you wait a full year for fruit. With these you begin getting fruit within six weeks after they are set, and more and more as the season advances. You get enough fruit the first year to repay you for the work and cost. The next spring you have a nice bed ready to make you a big crop in May and June. And after that berries again all summer. Sounds good, doesn't it? They will do it too, if you give them good soil and good care.

You must remember, though, that you can't get something for nothing out of these plants any more than with anything else. They must have good soil, good care, and plenty of moisture.

It's hard work bearing berries out of season and making plants too, and getting ready for a crop next spring. If they have to fight hard soil or thin soil, or weeds, or drought, they will simply give up and quit, and you can't blame them.

They Want Good Soil, Though

Give them the best soil that you have, the kind that would grow a good crop of potatoes, or corn, or cabbage, or onions. No harm to be a trifle heavy and moist. Set the plants early, the earlier the better. April is twice as good as May. Good distance for home garden is two feet each way. In the field one and one-half feet by three and one-half feet.

Keep the ground stirred and loose all the time. Never let a crust form or a weed start. If it gets terribly dry, irrigate if you possibly can. I like the overhead sprinkling system, but the ditch system is all right. Anyway, so you get the water on and down to the roots. Stir the soil as soon as it begins to dry after watering so as to stop evaporation.

I don't believe in clipping the runners or blooms. Let them do as they please. Mulch with straw or strawy manure or corn fodder when the ground freezes, and leave it on in the spring. It will keep the ground moist. The everbearing are perfectly hardy. No danger of their winter-killing.

The Variety That Suits Me

I prefer the variety known as the Progressive. There are lots of others, and I have tried most of them. Have kept only the Progressive, Amerieus, and Superb, and I find the Progressive by far the best of the lot. The description above refers to them. I don't think I will grow any other from now on.

It originated in Iowa, and is a cross between one of the French everbearing sorts and Senator Dunlap, the best of all the regular American varieties. The Progressive has all the good points of the American parent, and the one good point of the French parent—continuous bearing.

It has come to stay, and the sooner you get started with it the better.

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Ask any farmer who owns a Farmers' Favorite Grain Drill, and he will tell you that it would be impossible for any drill to do better work; that it will sow any seed from grasses and clovers to bush lima beans; that it puts the seed in the ground at an even depth; easy on both man and team and that it does all claimed for it.

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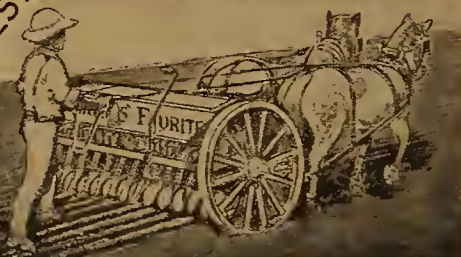
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New Methods in Potato Growing Harris' catalogue tells about selecting seed potatoes by the "hill-unit" system which aims to select seed from the best producing hills only.

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A Castle for Your Prince

How to Build It With Many Thoughts and Only a Few Dollars

By Alice Preston Mills

IN SPITE of many opinions to the contrary, there is no more companionable spirit on the face of the earth than the growing boy, provided that congenial companions may be drawn about him to share his simple joys. He is awkward and gawky, perhaps,—all arms and legs,—blushing confusedly at the least provocation, and shy as a deer when forced to scrub his neck and ears and appear in public. But let him run at large with his chums, take an interest in his collection of birds' eggs—gathered in those precious holidays which are not overfrequent in his busy life—and, above all, provide a place, all his own, where he may store his treasures. Then watch!

The "company" for which he has yearned will knock timidly at the back door, and with a pride which you, rich in home and friendship, cannot understand, he will answer that knock and lead the way to his castle at the head of the stairs. After they get somewhat acquainted there will be scuffling, and laughing, and loud voices boasting of prowess with rod and gun and in the swimming pool.

Ah, mothers, what could be sweeter music to your ears than these sounds? And please do not shake your head discouragedly and say, "It is utterly impossible to provide such a place!" For truly, if you have four walls to begin with, some sort of a room will be forthcoming of which both your boy and you will be proud. So now that this is definitely settled let us enlist that boy's interest and enthusiasm, roll up our sleeves, and get at the job in hand.

Let us look at the room he has been occupying. The floor is uncarpeted, and perhaps has wide cracks, and only a shade is provided at the window, for is it not true that boys dislike curtains? The bed is a discard from another room, the spring sags, and the comforts and spread are the ones which have grown matted and soggy from washing and long use.

For dressing facilities there are offered a scratched chest of drawers, or some shelves, and perhaps a cracked mirror.

The First Problems

IF THERE were naught else to influence him, we should no longer wonder at his wild desire to escape and at his oft-heard assertion that "it's all right for girls at home, but it's no place for a fellow to stay."

If you have before you the furnishing of a new room, or the making over of an old one, which way correspond somewhat to the one described, the first object must be the finish of the room itself. Throw out the furniture, close the door, open the window, and consider carefully. If the woodwork is new, stain it a pleasant shade of brown; but if it is old and in bad condition, and has once been painted, cover it with another coat—cream-white or a light tan, or if he is foud of green you may use that. Be sure it is just the right shade, for too dark a green makes a room dreary, and a bright green does away with all sense of restfulness.

If the walls are plastered you may also paint them, as this gives a finish which will wear well and may be easily cleaned. A warm tan is as pleasing a color as can be selected, since it fits in nicely with any sort of furniture and hangings. Be sure to secure the flat-finish paint, as a glossy surface is unsuited for this room. If you desire paper in place of paint it may be tan also, and a plain rather than a figured one will be most satisfactory. If you cannot obtain the desired shade in an inexpensive paper, try turning the wrong side of a figured paper out. It will often be exactly what you are looking for. If you feel that you cannot afford to hire the painting or papering done, call the boy to your assistance and accomplish it yourselves.

Then turn your attention to the floor. If it is a new one it may be stained also, or it may be painted as was the woodwork. Unless you intend using green on the furniture, a rather dark green paint is good for the floor, but too much of green will not do, and in the above case use a golden-brown paint for the floor. Before applying, clean the floor carefully, and fill any cracks with the prepared filler, which may be bought at a moderate price. If you do not care to purchase this, a filler may be made at home by soaking newspapers in warm water until they form a pulp, then mix in a small quantity of powdered alum and enough liquid glue to form a thick, heavy paste. Let this harden in the cracks, then apply the paint.

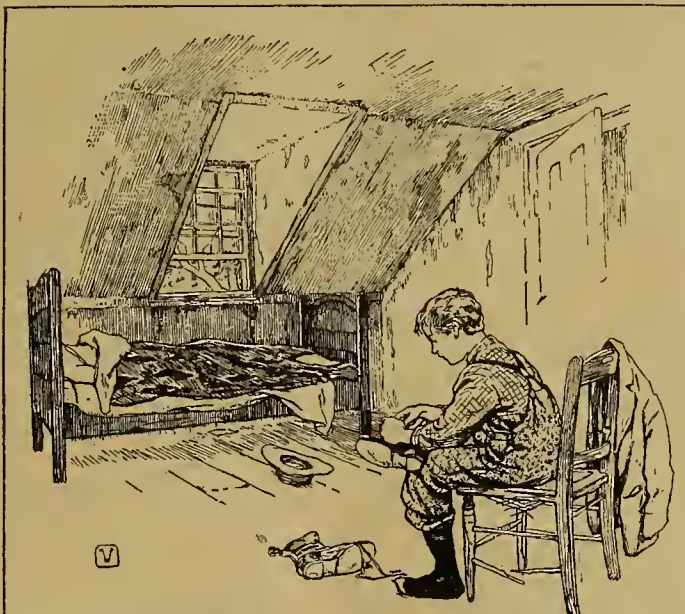
Now polish the window, and we are ready to attack that amazing collection of furniture.

If the bed is an iron one and badly scratched and chipped, a coat or two of enamel will make it good as new. The best enamel is of the sort used for bicycles. A half pint, at twenty cents, will give a good coat to an average bed. If it is too heavy, thin with turpentine until it runs on easily. Most boys object to a white bed, as it seems to suggest a hospital to them. Green is a pleasing color for its finish, especially if the other fittings are to be green. If the bed is a wooden one, it may also be painted; but please remove all the carving and ornamentation which mar its head and footboard before refinishing. Often the ugly curved lines may be sawed down to straight ones, and this will delight the boy, since in his inmost soul he will be longing for a "mission room."

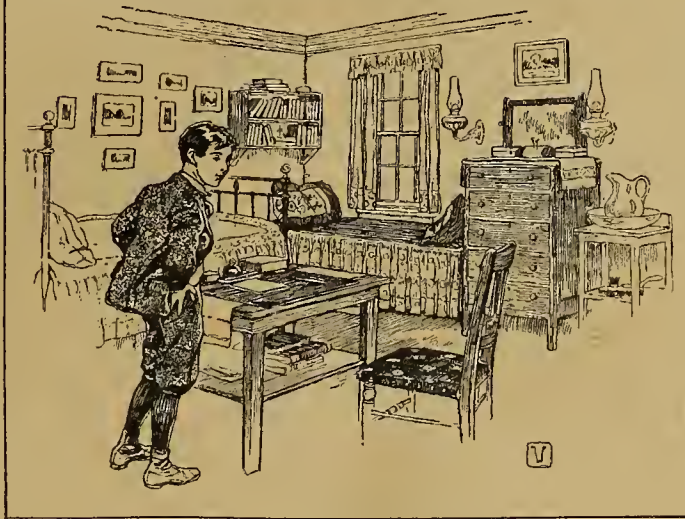
The one real luxury for which we plead is a good mattress and spring. Perhaps you cannot afford both at one time. If so, procure the spring first, since a poor spring will ruin any mattress. A comfortable mattress need not be expensive. For seven dollars, and often for even less during sales, a well-made one, with a padded cotton top and bottom, may be bought. And now for the bedding. A thick, heavy pad in-

sure warmth and comfort from beneath, and the ideal covering for this bed, as for all others, consists of a number of wool blankets. These are light in weight and extremely warm, but they are rather expensive, and if it is not possible to have these provide good comforts. Lightness and warmth are essentials.

In humble homes comforts have been seen which were covered with large pieces of woolen clothing, such as coats, trousers, shirts, and the like. After carefully washing these they were pieced together by machine, and when used over a good filling they were much to be preferred to old, thin comforts whose filling showed rifts and soggy lumps. Nowadays a wool filling, made in the form of a pad, is procurable, and while its initial expense is almost double that of cotton filling it is much more satisfactory, as it wears longer and is lighter and warmer. Its price, for a good quality, is two dollars. It is a good idea when making such a comfort to cover this pad with mosquito netting or very thin cheesecloth, and tie closely, as with a common comfort. Then prepare the outside cover, and



"The city for me!" cried disconsolate Tommy in his dreary room. "By Jove," decided the same Tommy when his mother pushed open the door of his new chamber, "there's nothing like the old farm after all!"



after fitting the pad carefully into the corners tie it at somewhat longer spacings, so that when it needs laundering it may be easily removed.

Try covering the pillows with a heavy slip of unbleached muslin over the ticking. This will give protection from dust, and if the pillows are aired often and thoroughly the day of laundering the entire pillow will be put off. On the farm, where there are ample supplies of fresh chicken, duck or goose feathers, there is no excuse for the use of pillows which are evil-smelling and heavy from too long use. There should be a spread, which will finish the bed prettily, and its color and material will be suggested later.

Simple Decorations at Small Cost

AFTER providing such a bed, ask the boy to throw back the covers and put the pillows in the open window when he arises. You will find that he will not complain.

If you buy a dresser or chiffonier, take the boy to the shop with you. You will find that he dislikes carvings and highly polished finishes, but chooses a dresser of heavy, plain construction and waxed finish, while the mirror will be a square or oblong one. If this new article cannot be afforded, do not be discouraged but use what you have at hand, or buy a chest of drawers. It is often possible to get such a chest, plainly constructed and with four drawers, for four dollars, and one may sometimes be found in a second-hand store for less. Fumigate carefully, remove the varnish or paint with the prepared remover—at twenty-five cents a half pint—and apply two coats of green paint, sandpapering the first one well before adding the second coat. This paint should be the same shade of green as the enamel of the bed.

If you have used a dresser and the mirror is a poor one, remove it entirely and substitute a small square one. A good size may be found for two dollars or less,

but be sure that the glass is a good beveled one or of French plate, in order that the boy will not have a distorted vision of himself each time he glances in it. Hang this directly above the dresser, and be sure it is at exactly the right height.

Also substitute plain wooden knobs for the cheap-looking brass handles on the dresser, and you are ready for the scarf. Do not make the mistake of using fine white linen, lace-trimmed or embroidered, for this scarf. Russian crash at fifteen cents a yard, hem-stitched or hemmed with a running stitch, of green embroidery cotton, with the monogram in the center of the front, makes an ideal cover. Provide a little oblong cushion of the same material for his scarf pins, and the like, and have a small box for collar and cuff buttons, and also one for collars. These may be plain little wooden boxes, painted or covered with wall paper. They should be neatly lined with white paper. See that there is a bag for soiled collars and handkerchiefs, and a rack of some sort for holding ties is absolutely essential. This may be constructed from many materials, according to your taste.

There should also be a table in this room, and it may be made by the lad himself. Nowadays, when tools are present in every farmer's chest and working directions may be had for the asking or careful reading, he can easily work out a well-proportioned table, about thirty by forty inches, with one shelf beneath.

Use two-by-fours for the legs, and one-inch lumber for the remainder. Be careful of joints, and finish carefully to correspond with the other furnishings. On this table have ink, pens, stationery, and a large pad of blotting paper. Then send for a catalogue of brass desk fittings. For a self-addressed stamped envelope the address of the firm publishing such a catalogue will gladly be sent. The prices are very moderate and will induce the boy to put a few of his pennies into something of this sort that will bring him lasting pleasure.

A chair may be found which is discarded from the dining-room. Remove the old finish, provide a new seat if it is in bad repair, and paint to match the table and dresser.

Ornaments That Educate

BACK of the table have the boy set up a shelf for his books, and let your gifts for a number of birthdays and Christmas times be more books to fill it. If he has become interested in the work by this time, help him to build a cabinet into one corner for his birds' eggs, stamps, curious stones, and the like, or if he is older this will hold his baseball, fishing tackle, and other treasures.

The lumber for the pieces suggested need not cost more than three dollars, and they can be finished for a surprisingly small sum.

Procure a box some four feet in length, make a well-fitting cover, and attach with a small pair of hinges at the back. Then pad the top with an old comfort or blanket, and cover neatly and carefully with some suitable material held in place with brass tacks. This covering may be of unbleached muslin dyed to the desired color, of cretonne in a conventional pattern, or of burlap, and it may be put on plain or in shallow box plaits. Line the box with wall paper, and place it beneath the window, with a square, plump pillow at each end. After one hint you should not be bothered by the constant scattering of shoes, skates, boxing gloves, and the like, over the entire room.

There should be some good prints on the walls, and the boy will have some photographs and snapshots that he will wish to have about him. He will prefer prints of landscapes and architectural masterpieces and studies of animals.

If there is a closet, see that a goodly number of coat and trouser hangers are provided for the accommodation of his good clothing, and hang a whisk broom on the closet door. If there is no closet, curtain off one corner with a denim or muslin curtain and put up hooks. If there is no bath, place on a little table a wash bowl and pitcher of tin or enamel, and have soap, towels, and wash cloths handy, so that the boy need not submit to the taunts of the whole family, gathered in the kitchen, when he wishes to "dress up." You may also place a bottle of shoe polish and a brush on the under shelf of this table.

Hangings which will be very appropriate for the boy's room may be made of unbleached muslin. A good quality comes at eight cents a yard, and a single width is enough for one half of a curtain.

Four yards of cretonne, in a wide-banded design, will cut sixteen yards of banding, and this banding should be used to trim each curtain just at the top of the hem. Across the top of the window have a valance ten inches wide, and trim this also.

The dresser scarf and table runner may also be of the unbleached muslin, and their trimming may be of the narrower strips inside the wide banding, which should run entirely around their edges.

The bedspread should be a plain square of muslin, with the same bands as the curtains. Such hangings may be developed in cream muslin, with the bays in green and pink or yellow, and will be the last touch necessary to give the room a cheerful, homey atmosphere, but there will be no frilliness or perishable quality to trouble the masculine soul.

Do the best you can with what you have, and rest assured that the room when completed is likely to have far more of personal feeling and charm within its walls than the one which has been planned with less thought and need for economy. And as to the boy's feelings—you will find that words to express his delight and gratitude will fail him when you open the door and show him what has been accomplished.

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ORDER TO-DAY You should send in your order to-day because our special prices with the above publishers expire soon. Farm and Fireside, Springfield, O.

How We Arranged the Flowers About Our Home

By Jeanette B. Wing

BEFORE we begin—in earnest—to study the new incoming catalogues, especially before ordering bulbs and seeds, let us study our flower spaces and think of effects we covet.

First and dearest to my heart are the wild trees, shrubs, and plants, so hardy, and so willing to lend themselves to decoration. I remember still, with a thrill of gratitude, my delighted surprise when two little red-bud trees burst into rosy bloom at the edge of the orchard, and then a little wild crab with perfume unsurpassed for sweetness, followed by a snowy dogwood. These were all surprises from my sons. Around them I have clustered bush honeysuckle and deutzias, bridal wreath and a few hardy lilies. One spring I wheeled away scraps of old iron and things cluttered back of the milk house, and surrounded the building on three sides with sweet brier (climbing bittersweet), which drapes the sides of the building and has gone to the roof. At their feet ferns and hepaticas, trilliums, dog-tooth violets, anemones, lady-slipper flourished year after year, "comforting the waste places."

I Used Every Bit of Ground Space

These sturdy wildlings were a joy from early spring till late autumn. The ferns lent themselves to all manner of bouquets, and a spray of maidenhair fern drooping around the vase was a joy, with pinks or roses, violets or jonquils. Still, a flower lover is insatiable, and the catalogues do entice one so! I used to order a dozen kinds of annuals in early spring—bulbs and roses. There was a little rose space before the dining-room doorway where a dozen hybrid tea roses, with much petting and careful protection in winter, were well worth while. I learned to economize space by tucking little bulbs around the border late in the fall—crocuses and hyacinths—and before they were fairly spent sowed white sweet alyssum for a border of snow. If you cut this border plant back ruthlessly, it will continue a satisfaction all summer. Inside the sweet alyssum, pansy plants filled a wide space, shading the rose roots. This little round bed was made as rich as I dared, for roses and pansies demand a fertile soil.

Since I have learned not to dabble with a miscellaneous lot of plants, I study the situation of each flower border and think how each will look to an outsider. For instance, the long border next the orchard is now filled with perennials. They do not all bloom at the same time, but the whole length is gay all summer. First the white lilies, set here and there, and glorious crêpy scarlet poppies (perennials) between—you do not notice green things creeping in among them—to bloom after they are spent. But after a while, when the ground is dappled with petals of spent lilies, the lovely pale blue larkspurs open out, and long before they are gone perennial phlox makes perfect bouquets all along the border. The white phlox comes first, so lovely with the blue on every side, and afterward so many shades of pink and crimson. By mid-summer I cut back the browning poppy stalks and the larkspurs, and set tall, late-blooming asters that have been growing in the cold frame.

Color Liven the Flower Beds

There is a rose hedge inside the wire fence, hybrid perpetuals, that bloom luxuriantly in June, and sparingly in September and October if it is not too dry. Among these rosebushes I have learned to dig deep and insert gladiolus bulbs, in circles, here and there, to enliven the too solemn greenness when the

roses are off duty. They do well there, as the roses are given much space.

South of the house there is a long bed where things that can stand drought are planted, annuals—all portulacas one season, a mass of verbenas the next. Then I was hungry for Shirley poppies. I was afraid they would cease blooming by midsummer, and sure enough they did; but we outwitted them by taking up some volunteer scarlet salvias and setting them two feet apart along the thirty-foot border. Nothing could be richer or more glowing in warm, rich color, and the row of chrysanthemums hugging the house had to climb to show their late blossoms in the fall.

The Flowers Seemed to be Happy

One year I had a desire for a long border all in shades of yellow. It was easy to do, with nasturtiums covering the fence in the background, California poppies in so many shades of yellow, and their lovely foliage, and then the velvet marigolds and the tall, very double marigolds, as handsome as chrysanthemums. That bed was a poem, the nasturtiums, running from pale yellow to orange and intense dark red, hovering over the low-growing things, and they all looked happy together.

Sweet peas are a positive necessity. But they need early planting, just when farm people are busy. I found I could stir the soil on the road side of the wire fence fronting the yard, and here all along behind the rose hedge I have now and then dropped my peas, then afterward enriched above them until they were generously mulched. They would climb, all abloom, the height of the fence, and then saucily peep over at the roses, waving their hands and pouring out their incense. If school children picked a little nosegay now and then, I was only too glad. I have another plan for that outside place for the coming season. For in the hotbed there are numerous thrifty young hollyhocks, scarlet, pink, white and black hollyhocks, that I watched over all the late summer and early fall, and now they are nicely protected, waiting for removal in the spring. Won't they challenge the roses?

Prepared for the Summer Months

Last October we set twenty-five white Roman hyacinths in a tin-lined basket, and they will bloom for six weeks—a treasure in green and white to tide over the snowy months.

I did not mean to talk exclusively of our own doings, but to suggest the beauty of floral effects, in shades of color, to each flower border, and the refreshment of changing from year to year from one desirable thing to another.

War

By Everett McNeil
TRAMP, oh tramp, ten thousand feet, March proudly down the city street, With haughty step and lordly mein. With clank of steel and bay'net's gleam, While cheering thousands line the way And make of war a gala day.

Tramp, tramp, with solemn feet and slow, The long, long lines of mourners go, While wailing fife and muffled drum, And sobbing crowds, all standing dumb, Their solemn, awful tribute yield To Death—god of the battlefield.

O God! When will the people rise, And strip from war its pleasing guise, And show its hideous horrors all, The mockeries of its pomp, and call It murder, though a king may name That glory which we know is shame?

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The Brown Mouse

Continued from Page 11

up about a hundred beyond us," said Mary. "But I couldn't get the exact number."

"Why," said Raymond, "we could find six hundred dairy cows in this neighborhood within an hour's drive."

"Six hundred!" scoffed Newton. "You're crazy! In an hour's drive!"

"I mean an hour's drive each way," said Raymond.

"I believe we could," said Jim. "And after we find how far we will have to go to get enough cows, if half of them patronized the creamery, we'll work over the savings the business would make if we could get the prices for butter paid the Wisconsin co-operative creameries as compared with what the centralizers pay us, on a basis of the past six months. Who's in possession of that correspondence we have had with the Wisconsin creameries?"

"I have it," said Raymond. "I'm hectographing a lot of arithmetic problems from it."

"How do you do, Mr. Irwin?" It was the superintendent who spoke.

Jim's brain whirled little prismatic clouds before his vision as he rose and shook Jennie's extended hand.

"Let me give you a chair," said he.

"Oh, no, thank you!" she returned. "I'll make myself at home. I know my way about in this schoolhouse, you see!"

She smiled at the children, and went about looking at their work, which was not noticeably disturbed, since visitors were much more frequent now than ever before, and were no rarity. Certainly, Jennie Woodruff was no novelty, since they had known her all their lives.

Most of the embarrassment was Jim's. He rose to the occasion, however, went through the routine of the closing day, and dismissed the flock, not omitting making an engagement with a group of boys for that evening to come back and work on the formalin treatment for smut in seed grains and the blue-vitriol treatment for seed potatoes.

"We hadn't time for these things," said he to the county superintendent, "in the regular class work, and it's getting time to take them up if we are to clean out the smut in next year's crop."

They repeated Whittier's "Corn Song" in concert, and school was out.

Alone with her in the old schoolhouse he confronted Jennie in the flesh. She felt a sense of his agitation, but if she had known the power of it she would have been astonished.

Since that Christmas afternoon when she had undertaken to follow Mr. Peterson's advice and line Yim Irwin up, Jim had gone through an inward transformation. He had passed from a late, cold, backward sexual spring into a warm June of the spirit, in which he had walked amid roses and lilies with Jennie. He was in love with her. He knew how insane it was, how much less than nothing had taken place in his circumstances to justify the hope that he would ever emerge from the state in which she had said "Humph!" at the thought that he could marry her or anyone else. Yet he had made up his mind that he would marry Jennie Woodruff. . . . She ought never to have tried to line him up. She knew not what she did.

HE SAW her through clouds of rose and pink; but she looked at him as at a foolish man who was making trouble for her, chasing rainbows at her expense, and deeply vexing her. She was in a cold, official frame of mind.

"Jim," said she, "do you know that you are facing trouble?"

"Trouble," said Jim, "is the natural condition of a man in my state of mind. But it is going to be a delicious sort of tribulation."

"I don't know what you mean," she replied in perfect honesty.

"Then I don't know what you mean," replied Jim.

"Jim," she said pleadingly, "I want you to give up this sort of teaching. Can't you see it's all wrong?"

"No," answered Jim in much the manner of a man who has been stabbed by his sweetheart. "I can't see that it is wrong. It's the only sort I can do. What do you see wrong in it?"

"Oh, I can see some very wonderful things in it," said Jennie, "but it can't be done in the Woodruff District. It may be correct in theory, but it won't work in practice."

"Jennie," said he, "when a thing won't work it isn't correct in theory."

"Well, then, Jim," said she, "why do you keep on with it?"

"It works," said Jim. "Anything that's correct in theory will work. If the theory seems correct and yet won't work, it's because something

is wrong in an unsuspected way with the theory. But my theory is correct, and it works."

"But the district is against it."

"Who are the district?"

"The school board are against it."

"The school board elected me after listening to an explanation of my theories as to the new sort of rural school in which I believe. I assume that they commissioned me to carry out my ideas."

"Oh, Jim," cried Jennie, "that's sophistry! They all voted for you so you wouldn't be without support. Each wanted you to have just one vote. Nobody wanted you elected. They were all surprised. You know that."

"They stood by and saw the contract signed," said Jim, "and—yes, Jennie, I am dealing in sophistry. I got the school by a sort of shell game which the board worked on themselves. But that doesn't prove that the district is against me. I believe the people are for me now, Jennie. I really do."

JENNIE rose and walked to the rear of the room and back, twice. When she spoke there was decision in her tone, and Jim felt that it was hostile decision.

"As an officer," she said rather grandly, "my relations with the district are with the school board on the one hand and with your competency as a teacher on the other."

"Has it come to that?" asked Jim. "Well, I have rather expected it."

His tone was weary. The Lincolnian droop in his great, sad, mournful mouth accentuated the resemblance to the martyr President. Possibly his feelings were not entirely different from those experienced by Lincoln at some crises of doubt, misunderstanding, and depression.

"If you can't change your methods," said Jennie, "I suggest that you resign."

"Do you think," said Jim, "that changing my methods would appease the men who feel that they are made laughingstocks by having elected me?"

Jennie was silent, for she knew that the school board meant to pursue their policy of getting rid of the accidental incumbent regardless of his methods.

"They would never call off their dogs," said Jim.

"But your methods would make a difference with my decision," said Jennie.

"Are you to be called upon to decide?" asked Jim.

"A formal complaint against you for incompetency," she replied, "has been lodged in my office, signed by the three directors. I shall be obliged to take notice of it."

"And do you think," queried Jim, "that my abandonment of the things in which I believe in the face of this attack would prove to your mind that I am competent? or would it show me incompetent?"

Again Jennie was silent.

"I guess," said Jim, "that we'll have to stand or fall on things as they are."

"You refuse to resign then?"

"Sometimes I think it's not worth while to try any longer," said Jim. "And yet, I believe that in my way I'm working out the question which must be solved if this nation is to stand—the question of making the farm and farm life what they should be and may well be. At this moment I feel like surrendering, for your sake more than mine; but I'll have to think about it. Suppose I refuse to resign?"

Jennie had drawn on her gloves and stood ready for departure.

The Woman Who Was Transformed at Wichita

YOU know about that great convention of farm women which was held in Kansas this last year. It was a great meeting, as the newspapers said; but the ends to which it may reach have not been half told. Mrs. Helen Johnson Keyes, our Fireside Editor, has given us a story about the woman who was made over at Wichita. This is such a story that men and children will not lift their eyes from the page until it is finished. The women too will find in it just what they like to read. Perhaps it says what they would like to say every day.

"PEARL'S MOTHER"
Appears in Next Issue

"Unless you resign before the twenty-fifth," said she, "I shall hear the petition for your removal on that date. You will be allowed to be present and answer the charges against you. They are incompetency. I bid you good evening."

"Incompetency!" The disgraceful word representing everything he had always despised rang through Jim's mind as he walked home. He could think of nothing else as he sat at the simple supper which he could scarcely taste.

Incompetent! Well, had he not always been incompetent, except in the use of his muscles? Had he not always been a dreamer? Were not all his dreams as foreign to life and common sense as the Milky Way to the earth? What reason was there for thinking that this crusade of his for better schools had any sounder foundation than his dream of being President, or a great painter, or a poet, novelist, or philosopher? He was just a hayseed, a rube, a misfit, as odd as Dick's hatband, an off ox. He was incompetent. He picked up a pen and began writing. He wrote: "To the Honorable the Board of Education of the Independent District of—"

He heard a tap at the door. His mother admitted Colonel Woodruff.

"Hello, Jim," said he.

"Good evening, Colonel," responded Jim. "Take a chair, won't you?"

"No," replied the Colonel. "I thought I'd see what you and the boys at the schoolhouse can tell me about the smut in my wheat. I heard you were going to work on that to-night."

"I had forgotten," said Jim.

"I wondered if you hadn't," said the Colonel, "and so I came by for you. I was waiting up the road. Come on and ride up with me."

THE Colonel had always been friendly, but there was a new note in his manner to-night. He was almost deferential. If he had been talking to Senator Cummins or the president of the state university, his tone could not have been more courteous, more careful to preserve the amenities due from man to man. He worked with the class on the smut. He offered to aid the boys in every possible way in their campaign against scab in potatoes. He suggested some tests which would show the real value of the treatments. The boys were in a glow of pride at this co-operation with Colonel Woodruff. This was real work. Jim and the Colonel went away together. It had been a great evening.

"Jim," said the Colonel, "can these kids spell?"

"I think," said Jim, "that they can outspell any school about here."

"Good," said the Colonel. "How are they in reading aloud?"

"Better than they were when I took hold."

"How about arithmetic and the other branches? Have you sort of kept them up to the course of study?"

"I have carried them in a course parallel to the textbooks," said Jim, "and covering the same ground. But it has been vocational work, you know—related to life."

"Well," said the Colonel, "if I were you I'd put them over a rapid review of the textbooks for a few days—say between now and the twenty-fifth."

"What for?"

"Oh, nothing—just to please me. . . . And say, Jim, I glanced over a communication you have started to the more or less Honorable Board of Education."

"Yes."

"Well, don't finish it. . . . And say, Jim, I think I'll give myself the luxury of being a wild-eyed reformer for once."

"Yes," said Jim, dazed.

"And if you think that you've got no friends, just remember that I'm for you."

"Thank you, Colonel."

"And we'll show them that they're in a horse race."

"I don't see . . ." said Jim.

"You're not supposed to see," said the Colonel; "but you can bet all you like that we'll be with them at the finish."

"But Jennie says—" began Jim.

"Don't tell me what she says," said the Colonel. "She's acting according to her judgment, and her lights, and other organs of perception, and I don't think it fittin' that her father should try to influence her official conduct. But you go on and review them common branches and keep your nerve. I haven't felt so much like a scrap since the day we stormed Lookout Mountain. I kinder like being a wild-eyed reformer, Jim."

[CONTINUED IN NEXT ISSUE]

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Dora's First Adventure

She Divorces Her Dishpan From Drudgery

By Avis Gordon Vestal

DISHPAN and Drudgery were once partners in Dora's kitchen.

When Father and Mother Delaven "retired" to town, young John Delaven ended his lease of a farm in the next township and came to run the "home place." Mother D., a year before moving, had had a sink installed in the kitchen. To her any sink was so superior to no sink that she entrusted the plan entirely to the plumber. He set it, as most plumbers would, too low for any grown woman. The sink's bottom was only twenty-four inches above the floor, when a woman of average height, five feet four inches, should have at least thirty inches.

John's Dora measured just that average, so the sink was six inches too low, as is shown by the first photograph. It had been even worse for her mother-in-law, who was taller, and who did not realize why she was so tired. Stooping, with the weight of the upper part of her body supported by weary back muscles, was not the only thing which made dishwashing daily drudgery for Dora D. Her methods, through the four years of her marriage, had been always inefficient. She had never thought out the quickest and pleasantest way.

Any old torn rag served Dora to wash dishes. Being unsightly, she hung it under the pan between usings, and it was never thoroughly dried. Dora's dishpan was of melancholy purple enamel, much chipped by use and rusted where chipped. She scraped the soiled dishes with a table knife; but this was tedious and could not be thorough, hence the dish water soon became greasy.

In the kitchen of the Delaven farmhouse Dora now had abundant water at the sink. She could exchange soiled for fresh water easily, but because for years she had been obliged to carry all water used in the house from a well in the yard she had formed the natural habit of being economical with it. As yet she had made no effort to break the once necessary habit.

Saved Time by Thinking

Another thing that made dishwashing drudgery was that she did not sort the pieces. Always she had to "paw over" the entire lot to sort out the glass and silver in their turn. The sink and drainboard together would not hold all of the chaotic collection, so dishes overflowed table and stove. Often when washing the skillets she discovered a pile of plates overlooked. Where to set the clean dishes was an unsolved problem, for the sink was in a corner.

One day this young farmer's wife began thinking. It proved such fascinating mental exercise that she soon booted Mr. Drudgery out of the door. By making over her methods she eased the long-dreaded task. At a small expenditure of money and one evening of John's time the burden was further lightened. The old and the new dishwashing show great contrasts in the quality of the cleansing, the time involved, and in Dora's attitude of mind toward her work.

"It will be cheaper for me to come down to the low sink than to hire it lifted," reasoned Dora. "I need to save my strength for Baby John, and I'm worth more than a dollar to him." This argument justified her in buying an office stool. She says it has been worth the dollar not once but every single week she has used it. The dollar need not all be charged against the dishwashing either, for she uses it when paring vegetables, ironing plain clothes, or watching slow cooking. The best height for the stool is two inches below the sink bed. "My stool not only saves tiresome stooping," Dora says, "but also the weariness of long standing."

Fortunately the shabby dishpan began to leak. Thrifty Dora took it to town for mending. "This isn't worth the cost of repairs," the hardware dealer assured

her. The new one was of light blue enamel with a white lining.

The new pan showed up the faults of the dark, linty, torn dish "rags." Dora became mildly extravagant. She burned them! Then she cut a clean unbleached linen kitchen towel into six pieces, hemmed them on the machine, and hung one proudly beside the new pan.

"An orderly piling of dishes should make them need less space," Dora next reasoned. In a few trials she learned to sort as she rinsed the dishes under the

sinks and whose top should supplement the sink. To keep out dust, its back and sides are of the wood. A denim curtain, sliding easily upon a brass rod, protects the front.

Dishes are brought upon a waitress' tray from the dining-room and placed upon the top of this case, as shown in the second photograph. The top is three inches longer than the case, to extend over the rim of the sink for draining. The end of the top nearest the sink is made of a wooden drainboard. A second reason for making the case shorter than the top is to allow Dora knee room as she sits upon her stool washing the dishes.

On the wall above the sink and case John screwed hooks to hang the pan, drainer, and dishwashing accessories, also small cooking implements. A shelf above that holds scouring soap, borax, and cleaning powder within reach of Dora's hand as she sits. The wire drainer cost the immense sum of 10 cents at the "racket" store in town. During the dishwashing process Dora sets a crock of scalding rinse water on the end of the case top nearest the sink and immediately at her left. Next comes the drainer. Beyond is the tray to receive the dried dishes. This relationship of equipment to facilitate work is shown in the third photograph. The best direction for work, she observes, is to have the soiled pieces at her right hand and to place the clean ones at her left.

Dora's new regular system of dishwashing saves time and secures uniform results. "If one must have habits one might as well form helpful ones," Dora declares. She finds it preferable to wipe each group as washed, instead of washing all before beginning the wiping. She lays a kitchen towel across her knees and can dry her hands in a moment. From the time the hot soapsuds are poured into her pan until all the dishes are cleaned Dora need not leave her stool.

Work Without Weariness

"Ready; go!" Dora washes the glasses, rolls them in the hot rinse water, sets them upside down to drain, lays the silver in the soapsuds, then dries the hot glasses, placing them upon the waiting tray. The silver is "dittoed." The china follows in regular order. She always does the cups, then the sauce dishes and pitchers, rinsing and placing them upside down in the basket. The saucers, bowls and, last, the plates follow, and are stacked around the edges, being held upright by the first group of inverted dishes. If the rinse water cools before all are done she replaces it with fresh, scalding water from the kettle. Shall I whisper? Dora does not wipe the china. It is well washed. It is thoroughly rinsed in abundant scalding water. Wiping with a cloth does not of itself sterilize dishes. Rinsing with boiling water does. The hot water heats the china so that it dries rapidly if carefully piled so that it drains and the air can reach it.

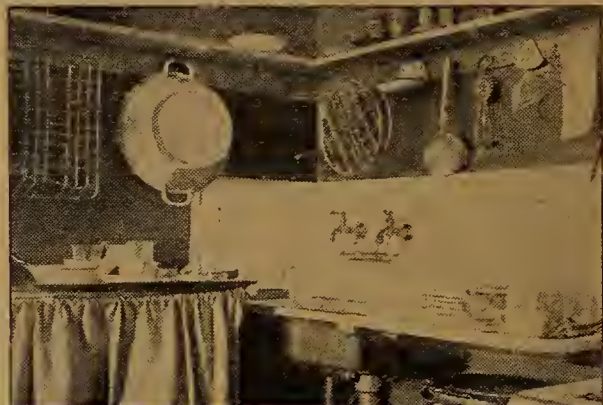
Dora finally washes the cooking pots. These she wipes to save rusting. The utensils she puts away in the case and on hooks without leaving her stool. When she rises from her stool

there remains only to sort the china, placing the dishes that are used daily and filled with food in the kitchen upon the shelf. One trip to the dining-room with the tray carries the glass, silver and all dishes except that service china. "One day," Dora says, "I had thirty-seven miscellaneous pieces. In fifteen minutes after my dish water was poured all were done and my hands dry."

Dora had many adventures before she became a good housekeeper. One of these was with a fireless cooker. Mrs. Vestal will tell you about it later.—Are you a Dora?



To wash dishes with everything inconvenient means to be less useful.



But if the kitchen is rearranged in some of its details and so made handier,



a happy worker will sit down to her duties with no thought of drudgery.



and a task once burdensome will be quickly finished.

faucet, and to pile all of a kind together. The rinsing is more efficient than scraping, and her perforated sink strainer, set beneath, received the food scraps from the plates. She carries this garbage out before beginning the washing.

"You certainly need a clear space to receive the clean dishes," John remarked one evening.

"I do," his wife responded. "And I ought to have some place near the sink for cooking utensils and to store my dishwashing equipment. It's so far to the pantry to put away or get out things."

John devised a case from pine boards, whose base and shelf should hold uten-

The Little Cookies

What Two Boarding-School Girls Did With Them

By Catha Wells

CARRIE was my chum and very best friend. And that means a good deal when you are just one in a big boarding school of girls, shut off from your mother and the rest of your family.

One day—I remember distinctly it was after Miss Penlow, the principal, had given us a long talk on charity and our duty to the poor—a crowd of us went across to the lake to skate. It was fearfully cold—snow heaped on everything. Carrie had forgotten her furs, and before long was whimpering with cold. Then I broke the strap on my skate, so Miss Best, the chaperon, said we could go home. It was not usual to let girls cross the park alone, but we promised to go with dignity and speed.

All of which we did till we were in sight of school. Here just at the edge of the park was a wretched little shanty, disreputable in looks but housing a nice, worthy widow, Mrs. Cook, and her seven children, which we girls always called the "Cookies." As we passed the place, our hands and feet tingling with cold, the eldest girl, Jessie, pounded on the window.

"Does she want us?" asked Carrie.

"It looks like it. But I am freezing, and besides it's against the rules to stop at houses," I urged.

The child thumped harder. "Well, it's too far to go to school for permission if they really need us," Carrie replied.

Through the unbroken snow we went, up to the scratched, unpainted door. This opened a tiny speck and we went into a forlorn, chilly room. The fire had just about burned out, and the children were shivering.

"Mother's gone to buy me some fire," and the tiniest Cookie looked up in Carrie's face, crying pitifully.

"Come, come," Carrie said, "don't cry! We'll stay with you till she comes. Let's fix up the fire, and then Melie will tell us stories."

The oldest boy, Jake, went out in the snow and got an armful of wood; and then as we all huddled together around the crackling, sputtering blaze I did my best to tell stories of bright, warm houses with glass doors and blooming flowers. That's the way with stories—you can have them any way you like, while real life has to just happen so.

There we sat till it grew dark, then the tiniest Cookie said, "I'm awfully hungry."

"Bless your heart, I know you are," said Carrie, jumping up. "You put the



The children were shivering

kettle on and I'll go over to the school and see if I can get some bread and tea."

Carrie had just begun to pull on her coat when the door burst open and in stumbled poor Mrs. Cook, her skirts stiff with ice and snow, her half-frozen arms full of bundles.

She dropped into the nearest chair while the children clamored about, peeping into the bundles, pulling at her shawl, chattering like monkeys, trying to tell why Carrie and I were here. Well, Mrs. Cook had brought plenty of tea and things, so we helped them to get supper and started home.

Mrs. Cook followed us to the door, and then, dropping her voice to a whisper, asked us not to say anything about being here. "It's this way: You see, the children are happy, and this is the first time I've had to work late in many a day. But some folks think there are too many children, and they are always trying to get me to put some in a home or give them away. I just couldn't stand that, and I know with God's help I can take care of them all. I guess He sent you young ladies here to look after them to-day—and now won't you keep it a secret where you've been?"

Her poor tired eyes were brimming full—we'd have promised more than that to reassure her. But when we got out in the black night we realized the fix we were in. "If we don't tell, what'll Miss Penlow do to us?" demanded Carrie.

"I was just thinking that, too. I don't believe Miss Penlow would report on her or blame her."

"Neither do I. And she wouldn't blame us for helping them; but we promised Mrs. Cook, and she trusts us. Maybe the side door's unlocked and we can slip in unseen."

But no such luck. The side door was bolted, and so were all the lower windows. So there was no choice but to walk straight up to the big front entrance. Again luck was against us, for Miss Penlow herself opened the door.

"At last you've returned! Come to my study, please." And she led the way down the corridor. Miss Best, the chaperon, was already there, and behind closed doors the two of them questioned us. But it did no good. We couldn't tell anything without telling all, so we kept our mouths shut.

Well, the end of it was we were locked up in different rooms on bread and water, to stay till we confessed the whole thing. I don't know how long I could have held out if help hadn't come from the Cooks. Early the next morning Jessie came over and asked to see Carrie, then to see me, and finally when she understood she couldn't see either she said, "Well, here's a handkerchief they left at our house last night."

"At your house?" said Miss Best.

"Yes'm; when they stayed with us, you know."

Miss Best caught hold of Jessie's thin little arm and hustled her to Miss Penlow's study, and there the whole story came out. Only the child made it seem a great deal bigger and finer than it really was. Miss Penlow and Miss Best went over and asked Mrs. Cook about it, and when she told of our promising they thought we were perfect heroines.

Well, we were released, and then all of us girls agreed to give a certain amount every month toward helping Mrs. Cook bring up her children. We formed a secret society—C. P. C., which meant "Cooks' Protective Club," and every Saturday we sew for those little Cookies. Miss Penlow said we did more good than all her preaching on charity, but Carrie said we might never have stopped and looked after those children if it hadn't been for her preaching.

Soap Bubbles—Another Fable For Girls

By Abbie Graham

WE HAD great fun blowing bubbles. Gathered around a big woolen blanket we would see how many we could get on it at one time. Sometimes we would blow the most beautiful ones, and just as we were getting enough breath to cry, "Looky!" it would suddenly turn into mist that would fly into our eyes.

Again we would send them chasing each other in the air, and watch them float away with all the colors of the sky and earth.

As I sat watching them somehow, it would make me think of the things I wanted to be and do.

What was there out yonder in the big world for me?

Finally, the college days came. What a place of high ideals is college! How it makes you want to go out into the world to help people!

Do you remember the story of Gareth, how he wanted to be

A knight of Arthur, working out his will
To cleanse the world.

His mother begged him to stay with her:

Wilt thou leave thine easeful bidding here,
and risk thine all—life, limb . . . ?

But Gareth's purpose was strong and true:

. . . Follow the Christ, the King.
Live pure, speak true, right wrong, follow
the King—
Else wherefore born?

When we go out to make these ideals real—to "live pure, to speak true, to right wrong, to follow the King," wherever He leads, there come many tempta-

tions to lower these ideals of ours. When this temptation comes to me, I remember another part of our childish play—the part of the woolen cloth. Its texture was such that the bubbles wouldn't burst when they touched it. Is it enough to blow the bubble and stop, not thinking of the texture of the community in which it must live? If there is in our community no sympathy with these things that we are striving to do and be, then perhaps we had better try to change the texture of the community.

There was another way, too, of keeping the bubbles from bursting. A few drops of glycerin added to the water would make them tougher and not so ready to burst. We can do much in changing the textures of the world about

us, but we can do a great deal, too, by putting something into our ideals that will make failure impossible. Here is what I'm trying to add to mine: just the two words, "You can." Notice that it is in the second person. I love to think that it is the watchword of the King's court—the King for whom I'm trying to "live pure and speak true, right wrong." He is saying to me: "You can do all things through me because all power is given to me in heaven and in earth. I have to listen to it very, very often because the enemies of the King are saying, 'You can't; you can't.'"

All that is left to some people of their high ideals of living is just a soapy taste in their mouth and the soap mist of lost ideals in their eyes. I was out in

a little country home last summer where all the family loved music. Each one played some instrument. After the others left the room the two older girls and a neighbor girl were talking. The youngest was telling us how she wanted to be a real musician some day. "Oh, yes," said the neighbor girl with the soapy taste and the soap misty eyes, "I used to have such dreams, but I've stopped dreaming."

"Stopped dreaming" because some of the bubbles burst? Oh, if the dream is worthy, keep it.

What stops my despair?

This: "'Tis not what man does which exalts him, but what man would do."

These things that we would be and do, let's keep them ever in our hearts. I like the pluck of an older friend of mine who told me how she had always wanted to sing, but in the busy necessities of life it had been crowded out. "Yet," she finished bravely, "I'm going to learn all about singing in heaven."

Oh, but a man's reach should exceed his grasp,
Or what's a heaven for?

Haven't you seen these two mottoes, embroidered in red on a pair of pillowcases?—"I slept and dreamed that life was Beauty; I woke and found that life was Duty."

These mottoes used to worry me very much. They don't now. I then was afraid of waking and finding life "just duty," with all the beauty of my soap bubbles burst. But I've learned not to be afraid any longer of finding a day just a "duty" day because I know now that there will always be people whom I can love and help. Then duty is beauty; and beauty, duty.

He Leads

By Faith Wells

THOUGH I may sit beside the bed,
And watch and wait when hope has fled;
Though I may stand beside the grave
Of one whose life I could not save;
Still, though God's love denies my plea,
I will believe He leadeth me.

I wonder if it is His grace
That brings me to this lonely place.
The vacant chair, the room so still—
Is it my loving Father's will?
Ah, this I learn on bended knee,
Through this dark way He leadeth me.

I cannot look ahead and know
Where He may lead, yet I shall go,
Even though I do not understand,
If only He will take my hand.
Sometime I shall look back and say,
"He led me safely all the way."

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New York's Latest Touches

Miss Gould Points Out in This Costume Some of the Important New Fashion Details



MANY of us will welcome them enthusiastically—the rather short, full skirts, high collars and long, close-fitting, set-in sleeves. Others will hesitate to give up the freedom of the open throat, and will cast many a backward glance after the narrow, slender skirt.

By spring, without a doubt, the narrow, tight skirts will have given way entirely to the flaring circular and plaited designs. These are worn short, some of the most extreme models being fully eight inches from the floor; three to four inches from the floor is a good length.

Sleeves are very long, and fit the arm closely. As a rule they are set into the normal armhole, although one still sees now and then the long shoulder or large armhole.

While the high, upstanding collar, much on the order of the old-time choker, is smart and new, the low collar has not been banished entirely. It is more or less a matter of personal preference whether one wears high or low neck, and I think I am safe in predicting that low collars will be even more favored than high ones as the season advances.

Overblouse effects, with contrasting guimpes or underblouses, are unusually popular. No doubt one of the chief reasons for their popularity, aside from their becomingness and simplicity, is the excellent opportunity they offer for economy—the combining of contrasting materials, the making over of any out-of-date dresses of last year, and the like.

In this smart little braid-trimmed serge I have tried to combine the most important of the new features and still keep the costume conservative.

There is a plaited paneled skirt with yoke top, an overblouse with loose tabs in back, suggestive of the bolero, and a high-necked, long-sleeved underblouse.

Dark blue serge, braided in black, with black satin underblouse relieved by a narrow frill of white at the throat, is suggested in the illustration. Many combinations could be used; for instance, that very dark shade of brown which is so popular just now is effective with the underblouse of black or brown satin the same shade or a tone lighter than the material of the dress. With the brown I would suggest a touch of gold in the trimming. It could be introduced here and there in the braiding or in the tassels, finishing the tabs. Nearly everything shows a bit of gold or silver this season.

A plain and flowered material would be attractive too; wool crêpe or poplin, using the flowered fabric for underblouse and girdle and the plain for overblouse and skirt. This design is suitable for almost any material—cloth, serge, wool crêpe, poplin, and the like. Developed in silk, using net or chiffon for the underblouse, it would be dressy enough for almost any occasion. Made up in linen or one of the new heavy cottons, with batiste or net for underblouse, it would be a charming summer dress. Caraval is another new cotton material suitable for this design for early spring wear.

No. 2705—Long-Sleeve Waist with Bolero Overblouse

34 to 42 bust. Material for 36-inch bust, one and three-eighths yards of thirty-six-inch material, or three-fourths yard of fifty-four-inch, with two yards of thirty-six-inch for the guimpe. The price of this pattern is ten cents

No. 2706—Yoke Skirt with Plaited Panels

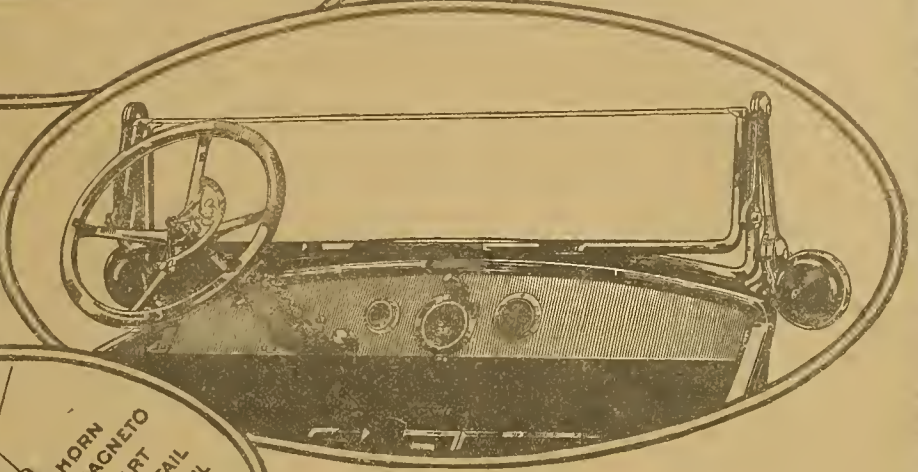
24 to 32 waist. Material for 24-inch waist, four and one-half yards of thirty-six-inch, or three and three-eighths yards of fifty-four-inch material. Width, three and one-half yards. Hip measure in 24-inch waist, thirty-eight inches. Price of pattern ten cents

When ordering patterns shown in Farm and Fireside, be sure to give correct size, measuring over the fullest part of the bust or hips. These patterns are designed and cut by an expert, on the very latest, most approved lines, and they are guaranteed to give entire satisfaction. They may be obtained from either of the following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio.

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ESTABLISHED 1877



MOUNT HOOD. Around his brow abides the everlasting snow, insuring bounteous harvests at his feet

WITH THE EDITOR

THE following outline of a bill for the regulation of dogs is suggested as a basis for legislation in the various States in which the legislatures are in session this winter. It is not expected that anyone will consider it complete. In every case it would be necessary to modify it to meet local legal requirements and conditions. It is believed, however, that it contains provisions which, when so modified, will be found superior to any now in force anywhere, in their final effect in promoting the best interests of the people who own dogs as well as those who do not.

A BILL For an Act

TO PROTECT THE PEOPLE AGAINST HYDROPHOBIA, TO PREVENT THE DEPREDATIONS OF VICIOUS AND RABID DOGS, AND TO SAFEGUARD THE DOMESTIC ANIMALS OF THE STATE.

Be it Enacted (etc.):

1. That there is hereby created a State Domestic Animals Commission of three members, to be appointed by the governor, the duties of which commission shall be to administer and enforce the provisions of this act. The members of this commission shall serve for six years, and each shall receive a salary of five thousand dollars a year.

2. It shall be the duty of all assessors to make the returns as to the number and ownership of dogs in their several jurisdictions, as required under this act, and for making such returns they shall receive a compensation, in addition to their regular payment as assessors, of ten cents for each dog returned. State domestic animal wardens shall be appointed by the said commission to serve in any part of the State where their services may be required for the purpose of checking up the work of the assessors; enforcing the regulations of the commissioners and the provisions of this act, and destroying dogs kept in violation of this act or the regulations of the commission. It shall be the duty of all game wardens to aid the state domestic animal wardens in the discharge of their duties, and game and fire wardens may discharge the duties of state domestic animal wardens when called upon to do so.

3. It shall be the duty of the said commission, within six months after the taking effect hereof, to make a complete list of all dogs owned by the residents of this State, by counties. A copy of the list for his county shall be kept in the office of every county treasurer. The original or first list in every county shall be made by state domestic animal wardens, and it shall be the duties of the assessors to bring such lists up to date each year, and to report changes in and additions to the same to the office of the commission.

4. The owner of every bitch listed on the original or first list shall pay an annual tax of three dollars, and of every male dog on said list a tax of fifty cents per year levied and collected as other taxes.

5. Any person harboring any dog shall be conclusively presumed to be the owner thereof for the purposes of this act.

6. The owner of a dog which has been destroyed, has died, or disappeared may be freed from taxation on the same by making affidavit to the fact of such death, destruction, or disappearance, and to the additional fact that at the time of making the affidavit he neither owns or harbors any dog other than appears on the county list in his name.

7. All dogs on the state and county lists shall be described suffi-



ciently for identification, on blanks furnished by the commission for that purpose.

8. No person shall add to the number of the dogs owned by him, nor acquire any dog or dogs after the said original list shall have been made, except by compliance with this act and such additional regulations as may be promulgated by said commission, and said regulations shall be made to the end that a complete list shall always be kept in each county and in the office of the commission of all dogs owned in the State, and that the said records shall show clearly which of said dogs were owned at the time of the taking effect of this law, and which have been subsequently acquired, and by whom.

9. On every bitch acquired subsequent to the taking effect of this act the owner shall pay an annual tax of fifteen dollars, and on every male dog an annual tax of two dollars. The taxes herein imposed shall be in addition to any taxes now imposed for the purpose of providing funds to pay for the damages done to domestic animals by dogs, and all laws and parts of laws relative to the damage done by dogs in the chasing and killing of sheep shall remain in force.

10. All moneys collected under this act shall be paid over to the state treasurer for the purpose of defraying the salaries of the commission, the state domestic animal wardens, and the expenses of carrying on the work of the commission.

11. It shall be the duty of every person owning or having in charge any dog or dogs, to confine such dog or dogs at all times to the limits of his own premises or the premises on which such dog or dogs is, or are, regularly kept.

Provided, that nothing in this act shall be construed to prevent the owner of any dog or dogs, or other person or persons having such dog or dogs in his or their charge, from allowing such dog or dogs to accompany such owner or other person or persons elsewhere than on the premises on which such dog or dogs is, or are, regularly kept.

Any person violating this act shall be deemed guilty of a misdemeanor, and shall be fined not less than two nor more than fifty dollars.

This act shall not apply to the running at large of any dog or dogs within the corporate limits of any city or town in this State that requires a license tag to be kept on dogs.

12. All laws and parts of laws in conflict with this act are hereby repealed.

In drawing this suggestive bill the intention has been to refrain from laying on the owners of the present stock of dogs any excessive burdens, but to place a substantial tax on any additions to the stock in the State. This will avoid the hardship of either forcing the destruction of our pets, or paying any considerable tax which the owner does not deliberately choose to incur. It might be quite as well to leave all of the first list of dogs untaxed, except as they are now taxed. The stiff tax on the females of the species will restrict the mothers of the next canine generation to animals of value and breeding. It will also tend to restrict the visible supply of dogs. The tax on males is one which may or may not be too high, but it should be high enough so that worthless curs will not be harbored recklessly. The substance of the Virginia law is embodied in certain sections of the bill. The state commission is provided for so that the enforcement of the law may be taken out of local hands when and where this is necessary; and it is thought that the bill itself will in most States furnish money enough to pay the expenses caused by it. In any case, the benefits of such a law to the people would be worth all it might cost in extra state taxes. Do you not agree with me?

Herbert Quick

WHAT WOULD YOU SAY TO THE JUDGE?

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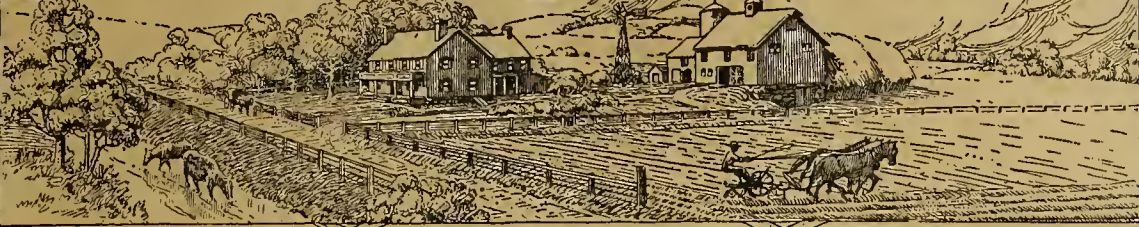
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Published Bi-Weekly

Pearl's Mother

A Woman Who Found Her Work First at Wichita

I—The Picked-up Stitch

By Helen Johnson Keyes
 Fireside Editor

THE ripening cornfields of southwestern Iowa rolled away like a hot, restless sea. They were burished on their crests by the copper sun, stirred in their hollows by the scorching wind. Alice Rollins walked toward the little schoolhouse where she had taught for ten years. Vacation was a lonely time for Alice, and when her back ached from carrying heavy buckets of water and her mind seemed to split and crack under the pressure of dullness, she would wander down the road to spend a half hour in the little school whose key she guarded, and whose life was all wound up in her life so that she could not have separated the strands of teaching and home-making.

Just ahead of her the path seemed to come to an end, then a sudden drop as she approached this jumping-off place brought into view the dingy frame structure. In front of it Alice saw with amazement a small automobile stopping, and on the steps an investigating figure in skirts.

She marched on, her feet plowing the dust resentfully. What stranger had the right to peer through the windows of her school?

"What is it you want?" she asked, pausing breathlessly before the porch. Her mauve claimed possession of the district.

Then something in the intruder's face held her, linked to the past. The stranger's eyes too, studying hers, lost their indifference and began to wonder.

"You are Pearl Bishop!" said Alice at last, with a sharp catch at her breath.

"And you're Alice Merrick!" came back from the intruder.

"Alice Rollins now."

"Is it possible? Are you the Mrs. Rollins who has put a sewing machine and a cooking stove into this school and made it famous?"

"It's the first I've heard of its being famous!" denied Alice. Miss Bishop, however, had cut her short with a kiss, and a moment later they were sitting hand in hand upon the steps.

Years vanished. The two women were children again, trudging together to a school which had looked just like this one except that no flowers and shrubbery had softened its old, gray face. Little Pearl Bishop had been in those days the petted child of a rich farmer, and Alice Merrick the neglected waif of a renter; but for nearly two years they were wrapped in an intimacy so vital that now, after sixteen years, it seemed ready to spring into life and enfold them once more.

"Do you remember," Alice hurried on with her history, "that we promised to name our first daughters for each other? Well, I did it; the only child I ever had is Pearl."

"And your husband, Alice, is he—"

"I'll tell you. After you moved to Kansas, Papa died and I was alone with the five children. I was seventeen then. I couldn't pay rent for the farm no more, and I was wondering what to do, and standing out one evening at the rotting gatepost tryin' to plan, when Jim Rollins went by. Don't suppose you remember him, for you wasn't our sort ever but just let me worship you like a pauper would a princess. 'Well,' Jim said, 'what are you going to do?' And I just shook my head. 'Five of them, ain't there?' he asked. 'Well, Alice, do you suppose we could farm it together, me and you and the kids?' 'Will you be good to them?' I asked. 'Sure,' says he. We got married the next day, and things didn't go so bad between Jim and me till the baby came, that was four years after our marriage. Then we got to disagreeing. 'You see,' Alice struggled on after a pause, "that

baby made a different woman of me. She was beautiful and I had made her, and so—so I felt different toward myself. I felt like if I'd made her I ought to make myself better, and kind o' say what life was goin' to be instead of swallowing down whatever came. It's funny, but I never felt like she was Jim's at all. When Jim took notice of my objectin' to his swearing and the company he kept he grew real ugly. Then I just made up my mind I'd be a teacher, and I got out my old schoolbooks and studied till I got the job. Funny—Jim's sort of satisfied about it himself now."

Pearl Bishop rose; she was still holding Alice's hand. "Let's ride back to your house," she said. "There are lots of things I want to talk about, and I'm melting away in this sun. The runabout was lent me," she explained as they walked toward the road, "by the county school superintendent. I'm staying at her house, but I'm often unable to get back there at night."

That evening at eleven o'clock Alice and Pearl were still talking. They sat on the edge of the couch which was prepared in the living-room of the five-room shack where Alice had made herself into a person. Each plied a hair brush in the time-honored way observed by females holding tightly confidences.

"You see," Pearl Bishop explained, "I'm heart and soul in this rural-school work, and when I heard of a Mrs. Rollins who was an innovator in her school methods I just came back to the old State to find her and invite her to go to the Congress of the International Farm Women in Wichita next October. I want you to talk to that congress just as you have talked to me."

Alice's eyes grew frightened, and the hair brush fell loudly to the floor, startling the wide flung silence of the night. Through the window the great stars peered in.

Pearl Bishop had a magnetic hand, and she laid it on Alice's shoulder:

"We can find a substitute teacher," she said; "and think how proud your Pearl will be!"

She had won her case.

II—Rest!

SIX weeks later Alice rode into Wichita. She had never rested so long as she rested on that trip. There were two days with nothing to do but to watch the splendid colors of the autumn smolder along the ground for endless mile after mile and leap into flame where the trees clustered. There was a night with the whirl of wings in it—a night full of mystery, of Pearl, of motherhood, of all those fluttering things which had stirred her strangely from time to time since her baby came fourteen years ago.

Arriving in Wichita seemed like the end of the dream. It was the waking up to work, and Alice had just discovered how blessed it is not to work when you are tired. She knew now—she had never thought of it before—that she had always been tired, and had always kept on working till she got on that train.

The level streets of Wichita fled away white and wide in front of Pearl Bishop's runabout. It stopped in front of a squarish house of red brick, whose porches were outlined by blossoming boxes. The mahogany door had a big brass knob that shone with miraculous luster. Within the house were floors that shone too; many, many floors, it seemed to Alice, with rugs flung upon them like leopard spots. Everything looked wide and spreading and slippery.

At the top of the shiny staircase they went into a room which Pearl said was to be Alice's. Its mirrors shone, its brass bedstead trapped the

afternoon light that flooded the room; an open door showed a spotless expanse of tile and porcelain in the bathroom.

Pearl pulled back the bedspread. "You will want to lie down," she said. "A night on the train is so tiring. We have dinner at half-past six. Just take off your clothes and rest till then."

The door closed. Rest! What was this strange new motive which everyone around her sought? Bewildered but obedient she slipped out of her dress and on to the bed. The silk coverlid lay deliciously about her, and she slept till the room was dusky and aromas of dinner floated up. Even these aromas had a mysterious flavor weighted with the command of enjoyment.



"WHY, if we could love only those who understand us, we'd never have a comrade or friend at all. Don't let's think about being understood, but just about holding hands."

"And Pearl?"

"She's boarding in town at the Y. W. C. A. and going to high school. She's a good girl and likes her books. I made her, and so I feel like there must be something in me."

Pearl's clasp tightened over Alice's hand.

"How did you happen to think of the sewing machine?" she inquired. "And the gasoline stove?"

"Well," confessed Alice slowly, "I guess it was mostly because I didn't know enough about textbooks to get along good with them. Sewing and cooking and gardening was more in my line, and the children took to them, and the mothers was glad to send them to school if they learned things that helped at home."

III—"And, Behold! I Make All Things New"

ALL through the meetings of the International Congress of Farm Women, Alice, a little brown-clad figure, sat well up toward the front of the theater in the Scottish Rite Consistory Building where the sessions took place. Sometimes the pipe organ over her head would swell into song; sometimes a girl would stroll out on a little gallery and sing marvelously. Afterward the speeches would begin—wonderful speeches, doors swinging into worlds of "silver lights and darks undreamed of."

Oh, no, they were not poetical speeches; far from it. They were about poultry and efficient kitchens, buying and selling, churches and neighborhood life, and the ruralizing of schools. But when you find suddenly that the things you have always done, and always must do, have a glory about them, so much so that they are woven into philosophies and taken to conventions to be talked about, then you do feel that you are more of a person than you ever guessed. And that feeling of personal value makes you want to do your work like an artist instead of like a drudge. So Alice saw herself and her five-room home and garden patch and poultry yard transfigured. She saw her little schoolhouse taking its place in the American System of Education! What a strange idea that was, her shack of a school!

By and by the morning came when she was to talk about that tiny spot in the System of Education. She had prepared her paper back in Iowa. It began: "Since the earliest ages of civilization man has been aware of the benefits of education." She had been impressed by the grandeur of that sentence when she

ground it out. But now that it was time to read it the phrase began to wobble. It didn't signify anything.

The president was calling upon her. She rose and got to the platform somehow. Then everybody in the audience melted into a blur. She forgot her paper, while ideas that she had never formulated before came flooding upon her.

"Ever since I came to this congress," she said, "I've been thinking about the picture of a statue I saw once in a magazine. I think it was called Brotherly Love. Anyhow, that was the idea. There was a big stone pillar, and men were standing around it, their backs leaning against it. They all clasped hands, but they could not see one another's faces because the next one was always too far around the curve. But they were clasping hands good and tight. Strangers and brothers in the same breath.

"Now that's like us at this congress, seems to me. We can't really see one another, or one another's problems just as they are. But we can hold hands. The city folks hit rather wide of the mark sometimes, we think, but we need their handclaps all the same. Why, if we couldn't work except with those who understand us, and we could love only those who understand us, we'd never have a comrade or friend at all. Don't let's think about being understood, but just about holding hands.

"Maybe I'm the only one here like that, but I never understood myself or my own work. I just stumbled into doing things which I had to come to Wichita to find out were so fine. It was one of the city folks who told me that there might be culture lurking in the hogpen and the dish water. Well, maybe that was because the hogpen and the dish water were too far

around the curve of that pillar for her to get a square look at them! But anyway, there was a handclasp in the idea, and I thank her for it.

"The great good the congress has done me is to make me feel like folks. My work isn't going to be drudgery no more; it's going to be art and culture. If the comicality of the idea ever strikes me all in a heap some morning when the mud's deep and the clothesline breaks, I'll sure feel the Wichita handclasp cheering me, and I'll walk through that mud like Queen Elizabeth over the velvet coat in my little girl's history book.

"The congress has given me a new life, and I've nothing to give it but a handclasp; but there ain't no paupers among friends, so I feel perfectly respectable when I pocket it all to take home and only say thank you and I'm waiting for more."

IV—What Mr. Bishop Thought

ALICE descended from the platform conscious of a miracle—she had merited the applause that greeted her.

That evening when she came down from her room into the polished reception hall of the Bishops' home, Mr. Bishop turned and half rose from the table where he had been reading with much interest the report of the day's program.

"I've just been telling my daughter, Mrs. Rollins," said he, "to get that namesake of hers to visit us next summer, and if she's inherited some of her mother's heart and wit there might be a good job lying round Kansas when she finishes her schooling, if there ain't in Iowa."

How Did Your Incubator Work?

Here Are the Experiences of Poultrymen Both Large and Small

The Egg, the Machine, the Chick

THE coming of ground-hog day annually develops renewed interest in the hatching problem. And successful chick-hatching assuredly is a problem.

To secure the year's quota of chicks needed for even the 100-hen laying plant is no holiday performance. By the same token the insuring of sufficient vigorous pullets for renewing the layers annually required to keep a poultry business of a 500- or 1,000-layer capacity is undoubtedly the most trying job in modern poultry culture operations.

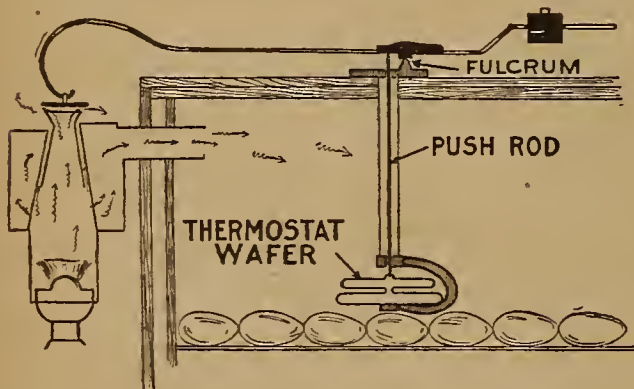
The natural conclusion of the beginner when he attempts machine-hatching is that the incubator solves the whole problem of getting his chicks out of the shell. All he has to do is to load his machine with eggs, fire up, and let 'er go! What a poultryman's joy, were this only so!

But success in incubator-hatching is after all very similar in requirements to success secured by the broody-hen route. The hen when most successful chooses, or is given, a clean, comfortable, retired nest as free as possible from variations of temperature and chilling drafts. Only as many eggs are given as she can keep at the required even temperature.

Hen sense governs the length of time the hen will remain away from her nest, and a cold snap sends the experienced, successful hen hatcher back to the eggs in short order. Such a hen will not crack or roughly jolt the eggs, but faithfully turn them daily. Moisture and ventilation requirements are furnished by the circulation of air which at night and during stormy periods of spring is well laden with moisture.

Thus we shall see that the brooding hen's task is the incubator's problem, or the problem that the operator of the incubator must work out according to the various conditions that surround him.

The owner of any make of incubator must fill the requirements found necessary by the makers of his particular machine. They have devoted much time in experimenting to furnish exact rules which, when strictly followed, will give the best hatching results. No beginner can hope to improve these rules.



Increase or decrease of heat in the egg chamber expands or contracts the metal thermostat plate, thus raising or lowering the lamp-cover controller

Even more necessary than a good incubator are eggs abounding in vigor. This quality is secured only by maximum health and vitality in the breeding stock and can come only from hens and cock birds that are in the pink of physical condition, and kept in this condition by plenty of regular exercise as well as food, right in quality and quantity.

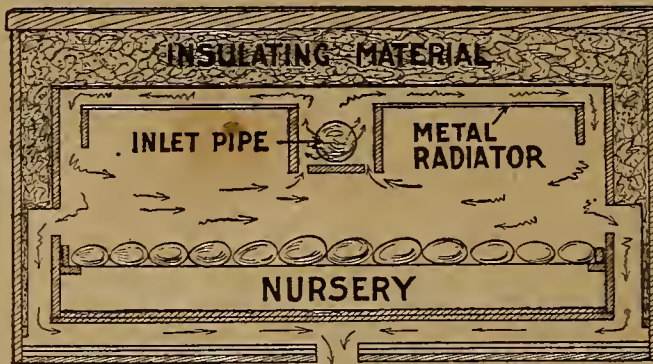
The views of those actually on the firing line are what we all want. FARM AND FIRESIDE, therefore, here gives the experience in machine-hatching of chicks secured from several tried and true poultry keepers:

Avoid Too Small a Machine

By Levi French

MY INCUBATOR experience has not resulted in any startling discoveries that are "bound to revolutionize the hatching industry." Neither have I ever been able to get 100 per cent hatches, or better; but I have learned a few things about artificial incubation,

and have been able to get some fairly good hatches. A large incubator costs less in proportion, requires proportionately less oil, occupies proportionately less room, requires but little more time to operate and care for it, and will hatch fully as large a percentage of



This shows how the heat in the incubator is conserved, distributed, and circulated

chicks as a small one. My advice, therefore, is to buy as large a machine as you can afford and can profitably use.

Eggs for hatching should not be kept over ten days, and a week is better, so the size of incubator will be determined largely by the size of the flock supplying the eggs.

For ordinary farm-flock conditions probably a 200- to 250-egg machine will be about right, as eggs to fill this can probably be gathered in ten days or less, and 500 chicks should be turned out in four hatches, or about three months. If more chicks are desired, or if one wishes to get them out earlier, one or two more machines of the same size should be used. By alternating the incubators or setting them about a week apart, all the eggs from the flock could be used for hatching, and later the machines could be used for custom hatching if desired.

Personally, I rather prefer machines of 500- to 1,000-egg capacity, but these are not practical unless one has a large flock and is hatching on quite an extensive scale.

Hot-Water Heating Prevents Accidental Chills

I prefer the hot-water machine, as it is easier to hold an even temperature and there is less danger of the eggs becoming chilled if the lamp goes out. Also the temperature of the hatching chamber is more uniform.

In many hot-air machines the end next the lamp will be from one to three degrees hotter than the other end. This is especially so in the large machines.

I have not used all makes of incubators, but it has been my experience that those machines in which both the ventilation and moisture are under the control of the operator give best results both in an ordinary room and in an underground hatching chamber. It is not always necessary to supply moisture, but it is well to have the means for supplying it at hand, as the time may come when it will be needed—and needed badly.

It has been my experience that if the egg chamber is well ventilated (as it should be of course) the supplied moisture will usually result in a bigger and stronger hatch.

Trays should be well made with wood or galvanized iron frames, and galvanized screen for the bottom. If this is ridged or corrugated, thus forming little hollows in which the eggs may rest with the large end slightly elevated, it will reduce the capacity of the machine somewhat, but will be a great convenience in turning the eggs.

There should of course be an open space at the front of the tray where the chicks may drop through to the nursery.

Select a machine with a good roomy nursery. Three and a half inches below the trays is about right, and it should be fitted with nursery drawers, or provided with doors which will open flush with the bottom of machine so it may be cleaned easily and thoroughly.

Don't Overheat the Hatching Chicks

By Mrs. Andrew Brooks

LOOKING back over my extended experience in machine-hatching of eggs, I am led to say to those who are new in the business that too high temperature during the final days of the hatching period probably causes more trouble to beginners and results in a larger number of crippled chicks than any other one thing. I find that when the temperature is not allowed to go above 103 degrees Fahrenheit I have large and stronger hatches of bound-to-live chicks.

A burlap lining sewed to the trays before the eggs are put in, I find, equalizes the temperature and helps in rapid and safe turning of the eggs. The chicks are also in better condition after hatching when the burlap lining is used.

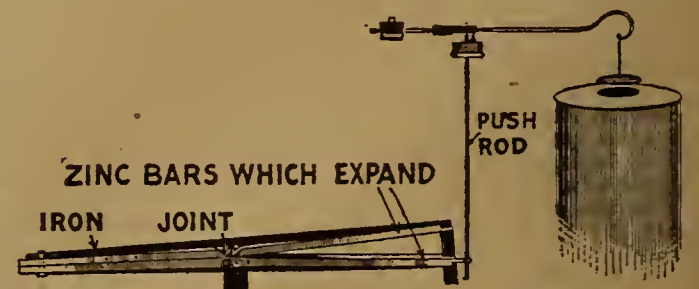
I purchased in 1904 a second-hand incubator of one of the standard makes, and it still gives good hatchings. Apparently it is as good as ever. The nursery chamber of this make of incubator is a labor saver in making unnecessary the moving of the chicks during the hatch.

One incubator that I used had only a burlap bottom in the chick nursery. When this machine was set in the cellar, the chicks dropping from the trays were quickly chilled by close contact to the cellar floor. Chicks that were chilled in this way nearly all developed bowel trouble. In my experience the chilling of chicks right after hatching is responsible for more bowel trouble than any other cause.

Beginners Expect Too Much

By John L. Woodbury

MUCH of the dissatisfaction with incubators is due to the operator's expecting too much. The beginner, as a rule, is particularly exacting. He strikes out with hopes based upon the supposed ability of the old hen to hatch at least 13 chicks out of every 15 eggs. When he tries machine-hatching and reckons up the eggs that failed to hatch, distrust of the artificial method is almost sure to be felt. If before trying the incubator he had set groups of 10 hens at three different periods of the season as checks, he would have got good proof of the uncertainties of the hen-hatching route.



This new adaptation of the toggle-joint principle increases the heat-governing control of the push rod fivefold over the type previously employed

I have used the incubator almost exclusively for nine seasons, and have suffered many bitter disappointments, but have never felt an inclination to renege the services of old biddy with which I had a previous experience of twenty years. Since adopting the incubator, however bad the "luck," I have always come out in the fall with pullets enough and some to sell, while when depending upon hen hatching and giving infinitely more time to the work I always had difficulty in getting enough pullets to keep up my flock.

I pay considerable attention to the "fancy" end of the poultry business, and when I want some birds from certain pens for the fairs and early shows, I set from those pens whether the eggs are running highly fertile or not. If the rate of fertility seems low, the more eggs I put into the machines. The sacrifice of a few dozen of eggs under such circumstances is a trivial matter to the fancier. For similar reasons the utility breeder should not mourn too much over a seemingly big waste of eggs [CONTINUED ON PAGE 22]

The Best Hog-Health Insurance

Vaccination, Patent Remedies, and Constitutional Vigor Compared

By D. S. Burch, Associate Editor

"I WILL buy twenty-five healthy hogs, vaccinate them, and turn them in with a herd of hogs dying of the cholera. If any of the twenty-five vaccinated hogs die I will cheerfully stand the loss; but if they live, the person desiring this demonstration is to buy the twenty-five hogs from me at the purchase price and pay for the cost of vaccination."

The foregoing is a proposition made by Doctor Blanchard of the Missouri Valley Serum Company of Kansas City, Missouri. That offer still stands. It shows absolute confidence in the immunity of vaccinated hogs against cholera. A business man could not make such a proposition and stay in business unless the serum did what he and others claim it will do and what it actually does.

Hogs that have been properly vaccinated by the simultaneous method are absolutely cholera-resistant. All serum made in a government-licensed serum plant is tested by what is known as the eight-pig method. Four pairs of pigs are taken. The first pair is given virus and the other three pairs receive virus and also varying quantities of serum. The first pair, having received no serum, is expected to take the cholera and die within a specified time. The other three pairs are expected to live.

Before the serum can be sent out the death of the first pair and the recovery of the other must actually take place.

That is a sign that the serum and virus are of proper strength. But as a further safeguard, about twice as much serum is given under farm conditions as was used in the test—that is, if instructions on the label of the bottle are followed.

Anyone who has seen pen after pen of these test pigs, and has noticed that the pigs receiving the serum were in perfect health (even though living with others dying of cholera), cannot help being convinced that vaccination gives absolute immunity.

Life is too short for everyone to run a

been made immune would kill the hog in a few minutes.

Here is a practical test conducted in the Kansas City Stockyards. C. R. Canon, hog expert for Clay Robinson & Company, had charge of it. He took three bunches of hogs, twenty in each bunch, making a total of sixty altogether. None of the hogs in the first bunch had ever been vaccinated. In the second bunch all of the hogs had been vaccinated. The third bunch was composed of unvaccinated hogs, but each hog in that bunch was inoculated with cholera blood to give him the disease. Then all the sixty hogs were turned into the same pen.

A Costly Test, But a Fine One

All the first bunch were expected to die because of their exposure to cholera and their not having been vaccinated. The third bunch, which was inoculated with the cholera blood, should also die. All in the second bunch, having been vaccinated, should live. Everything came out exactly as predicted. All the

will cost you at least 60 cents. If you sell that hog at the weight of 170 pounds, and he brings \$12, your vaccination has cost 5 per cent of the selling price, which is pretty high insurance. It is so high that the expense would hardly be justified unless there was cholera in the neighborhood and you were in danger of losing your hogs.

Dr. C. J. Sihler, president of the Sihler Hog Cholera Serum Company, Kansas City, is one of the most emphatic men I know of in urging that vaccination be done when the pigs are young so that protection may be had at the least cost.

Doctor Sihler is enough of a business man to see the commercial as well as the scientific side of the problem. No matter how fine and wonderful it is to make hogs immune, an intelligent stockman will either run his chances or quit raising hogs if he finds the cost of vaccination knocks all the profits out of his business.

The foregoing remarks apply to market hogs, and if a man is raising breeding stock, or has an outlet which brings more than ordinary prices, that is another matter. A breeder gets enough more for immune hogs to repay him for the cost of vaccination, and in cholera-infected sections, at least, the best breeders won't have a hog on the place that isn't immune.

If you look at vaccination against cholera simply as a business proposition that must be made to pay for itself, you can usually decide what you had better do: (1) whether to vaccinate all your hogs before the cholera finds you out; (2) whether to wait till you hear reports of it in your neighborhood and then vaccinate; or (3) whether to take a chance and, if caught, either market at once or vaccinate.

The Romans used to say, "If in doubt take the middle road." That is pretty good advice in the case of cholera. In most communities where cholera has not been a constant visitor, the second of the three choices above is the



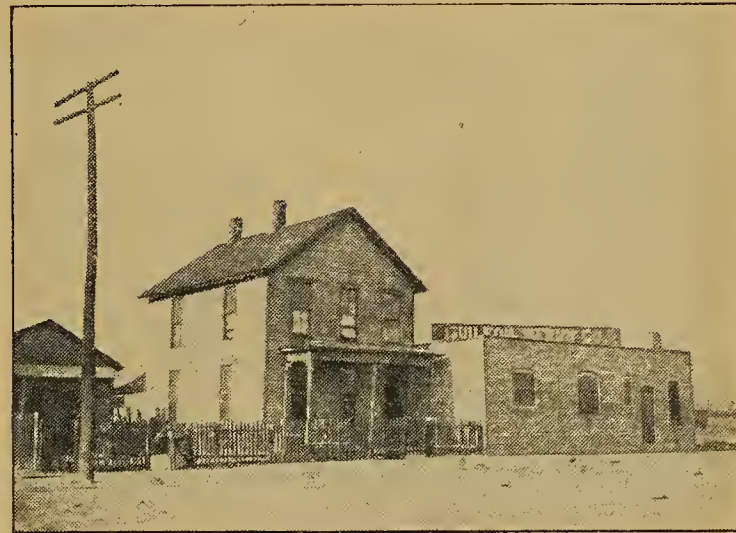
Portion of Pitman Moore plant



These four pictures are typical of the kind of establishments in which serum is made. All of these plants are under government inspection. The pictures at the sides show two of the twenty-six plants in Kansas City



The state serum plant of Kansas



The outside appearance of a serum establishment gives some idea of the capital invested and the size of the business. But it has little to do with the quality of the serum. The interiors of all these plants were white-enameled

personal experiment station. The Government is usually the safest authority to trust because it represents the opinions of its various experts, who are probably the least likely to be influenced by commercial motives. But just because a government official (Dr. Marion Dorset) is heart and soul back of the serum treatment for hog cholera, having been one of the discoverers of that treatment, some folks think that in the matter of controlling cholera the Government has made a "pet" of that particular treatment.

Most state experiment stations and live-stock boards also endorse the serum treatment. But as many of them render the service of making and distributing serum the state authorities have been said to be prejudiced against any other method of controlling hog cholera.

Fortunately no State has yet passed a law making any particular kind of treatment for cholera compulsory, and every stockman can suit himself as to remedy or means of prevention. The chief thing people want to know, is whether any of the much-touted treatments pay at all, and if any of them do, which pay best, and how much. So to help you decide what kind of hog-health insurance is the best I will relate actual results that have followed the use of some of the principal methods.

I Wish You Had Seen It Too

The serum treatment is the popular name for the injection of anti-hog-cholera serum into a hog for the purpose of rendering the hog resistant to cholera. In its broader scope it includes the so-called simultaneous treatment which means that, in addition to receiving the serum, the hog is also inoculated with a small amount of virus (blood from a cholera-sick hog). The virus starts a mild form of the disease, but enough of the serum is given to keep it in check, and after about three weeks the blood of the animal is full of "anti-bodies" which make the hog immune against further infection from cholera.

I have seen a quart and a half of virus (cholera blood) pumped into the veins of an immune hog with no apparent after-discomfort to the animal. To put such an amount of virus into a hog that had never

first and third bunches died, forty hogs in all, and the vaccinated hogs all lived. This was a business man's test made in the presence of business men.

Mr. Canon has been on a number of committees to look into the immunity of vaccinated hogs, and in that capacity has made many thorough and convincing tests of which that just given is one.

Make Vaccination Pay for Itself

Most forms of insurance, especially life, fire, and accident, are generally admitted to be good things if intelligently used. So are lightning rods for a barn on top of a hill. If the probable danger is great you can hardly afford to run a chance of any kind, provided you can get protection cheap enough.

The serum companies naturally want to sell all the serum they can, just as an insurance company will sell you as much insurance as they think you can carry. There is no question in my mind but what the intelligent vaccination of all hogs would be a good thing if serum was free. But considering the cost, I do not regard universal vaccination as a good business proposition.

The price of serum and veterinary work will remain about the same. The average cost of serum is about 1½ cents a cubic centimeter, and if you hire the work done the veterinarian's charges will amount to around 10 cents for each hog treated in addition to the cost of the serum. The virus is cheap and you need only a little. Some companies furnish it free if you buy serum of them.

To do the cheapest good job of vaccination, do it as soon as possible after the pigs weigh fifty pounds. Give them the simultaneous treatment at that time and, except in rare cases, the immunity will be good for life. The bigger the hogs are when marketed the less the vaccination will cost you in proportion to their selling price.

For example, we will say you vaccinate a 50-pound pig at a cost of 35 cents. When that pig grows up to weigh 250 pounds you sell him for \$17.50. The cost of protecting that pig against cholera is only 2 per cent of the selling price according to plain arithmetic.

Now suppose you vaccinate a 100-pound hog. That

best proposition from a business basis. If you don't vaccinate and the cholera doesn't reach you, you will have saved yourself the cost of vaccination. But if it gets near, you run a risk unless you either immune your hogs or market them.

Just how near the infection must come before you are in danger, involves many uncertain considerations, such as the flights of birds, roaming of dogs, and the precautions you take to keep visitors out of your hog lot. A man in Missouri admitted to me that he brought the cholera to his own farm because, out of curiosity, he went to see an infected herd five miles away and at that time didn't know he could carry it on his shoes.

If a man is careful and keeps his hogs well fenced on his own property, he is fairly safe as long as the cholera doesn't get any closer than three miles. When nearer than that he had better get ready to protect his hogs. Please don't consider the three-mile danger limit as a definite or reliable guide. I mention that distance simply to give an idea on the long striking arm of the cholera plague, and because it is about the average of the opinions of farmers and veterinarians who have had experience with the spread of the disease.

Why Patent Remedies Appeal

The person who wants your money and desires to get it without violence usually starts out by pretending to be your friend. He may have a perfectly good proposition or it may be good only from his point of view. Or he may have a worthless article and yet be enough of a business man to know that if properly introduced and praised almost anything can be sold.

For reasons already mentioned, a good many hog raisers have had poor results with the serum treatment for cholera. Others have found the cost of the serum treatment higher than they wanted to pay, and turned to some cheaper remedy. Many more do not understand the serum method (I'll admit it's rather technical), and prefer some medicine which is claimed "to sterilize the body fluids" or to do other plausible things couched in terms which the average man thinks he can understand. If the "remedy" or "cure" is easily administered, that is [CONTINUED ON PAGE 11]

Studebaker

WAGONS BUGGIES HARNESS



A TRUE STORY ABOUT A STUDEBAKER

Do you remember the Studebaker Wagon I bought from you in November, 1877?

I haul ore and freight with it over the mountains and use it for a hay wagon sometimes.

The tires have never been reset and it has never had any repairs to amount to anything and it has never been under shelter.

It is a good old wagon yet and capable of being used for many years to come.

Ray McLaughlin,
Hayman, Col.

36 year old Studebaker hauling ore over mountains

THINK what this sturdy wagon, bought in 1877, has earned for its owner.

—and think how very little he has spent on it for repairs. Even the tires have not had to be set.

—and it has never been under shelter.

What you can expect from a Studebaker

A remarkable story. But no more than is expected of a Studebaker.

Air dried wood, tested iron and steel, good paint and varnish and skilled workmanship are bound to give satisfaction—and lasting results.

That's why it pays to buy a Studebaker.

It is true you may be offered a wagon represented to be "just as good" and costing less. But don't be imposed upon. A wagon is as good as its life is long—and Studebaker wagons are cheapest in the end.

What you want is a wagon that will last a lifetime, run easily and not cost you continual small sums for repairs.

And that is what you get when you buy a Studebaker. Sixty-three years of wagon building integrity insure you against the mistakes of the manufacturer who makes farm wagons to sell cheap.

Remember a Studebaker is sold at the lowest price for which it is possible to make a trustworthy wagon.

—and the same is true of Studebaker Harness and Buggies.

STUDEBAKER, South Bend, Ind.

NEW YORK CHICAGO DALLAS KANSAS CITY DENVER
MINNEAPOLIS SALT LAKE CITY SAN FRANCISCO PORTLAND, ORE.

Adv. 2030

Studebakers last a lifetime

SELDOM SEE

a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

ABSORBINE
TRADE MARK REG. U.S. PAT. OFF.

will clean it off without laying the horse up. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2 per bottle delivered. Describe your case for special instructions and Book 8 K free.

W. F. YOUNG, P. D. F., 284 Temple St., Springfield, Mass.

Handy Wagons
Save High Lifts

Built low—wide tires prevent rutting—light draft—save work and repairs. Write for free catalog of steel wheels and wagons.
Electric Wheel Co., 13 Elm St., Quincy, Ill.

AGENTS earn big money by representing **WOMAN'S HOME COMPANION**. Write Business Manager, Desk M, THE CROWELL PUBLISHING COMPANY, Springfield, O.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powder-paint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r, 68 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

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MAKERS of Hand and Power Clipping Machines for Horses, Mules, Cows. FREIGHT CHARGES prepaid, United States or Canada, on complete machines ORDERED DIRECT by users.
ILLUSTRATED PRICE LIST FREE.

Meat for Eight Families

How This Club Has Been Managed for 17 Years

By C. W. Hunt

ISOLATION from markets and the need of fresh meat in a season when it cannot be kept without ice, brought forth a suggestion from some thoughtful man that resulted in the formation of a fresh-meat club in Lincoln County, North Carolina, just seventeen years ago the past summer. Since that time this club has furnished eight families with a succulent food when otherwise it could not have been had without effort and sometimes loss. To kill a beef and risk selling a part of it on uncertainties was too great a risk with a good quality of beef, but to divide a carcass into eight parts was easy sailing, and the club was formed.

The charter members were: John Rudisill, R. G. Rutledge, Henry Kiser, John Adderholdt, Manuel Rudisill, William Crouse, Morris Clark, and Wiley Clark. John Adderholdt was elected secretary of the club at the first killing and meeting, which place he has held for seventeen long years, and in that time there have been but two changes in the membership, and they were by death, but the places were filled at once.

How the Carcass is Divided

It is worked this way: It is agreed that John Rudisill shall kill the first beef of the season, and the other members come for their part. The carcass is cut into eight parts: upper hind quarters, lower hind quarters, upper fore quarters, lower fore quarters, each quarter being divided into two parts. John Rudisill at this killing gets the leg end of a hind quarter; the next killing the rib end of a fore quarter; then the loin end of a hind quarter, and then the neck end of a fore quarter; and each member follows suit, getting part of a hind quarter at one killing and a

part of a fore quarter the next, while the member killing gets the hide and the refuse.

John Adderholdt, the secretary, keeps a book in which each man is charged with a given number of pounds, the eight pieces varying in weight, and no money is passed till the eight men have each killed a beef, when the varying balances are squared up and money paid.

They Were Real Friendly

If R. G. Rutledge slaughtered the first Saturday, it was known then that Morris Clark would kill the second Saturday, Manuel Rudisill the third, and on down the line till each had furnished a beef.

From the very beginning of this club there has been a friendly rivalry with these contented neighbors to see who can furnish the nicest meat. Outsiders who have been fortunate to sit at one of the tables have often had cause to remark on the fine quality of the meat furnished. Should any member of this club fall out, by death or for any other cause, the place would not be vacant a day, so satisfactorily has the club been run.

Clubs of four could be worked the same way on smaller animals.

This club has always striven to furnish meat only in the time when it was difficult to keep meat and after the home supply had run low. After hog-killing time and people had their own meat, the club ceased to kill till such time as was agreed upon.

Results: A neighborhood of united neighbors; families thrown together each week; fresh meat of a high quality each week; all members doing well, as evidenced by seventeen years under the same secretary, with only two changes in membership, and those caused by death.

Friday Afternoon Essays

The Horse

By Earl H. Emmons



He sticks his features into the trough up to his eyes, takes a long breath, raises his head and —

A Galled Shoulder Doubles the Load



TAPATCO scientific, humane collar pads end trouble for you and pain for your horses. They fill up the hollow places that come in neck and shoulders as soon as your sleek horses are put to work in spring.

HORSE COLLAR PADS
TAPATCO
REGISTERED BRAND TRADE MARK

Make Any Collar Fit Snugly

Made from start to finish right in our own shops. We even make our own cotton drilling and do our own dyeing.

TAPATCO pads are porous. They permit ample ventilation and absorb all sweat. Filled with our own Special Composite Stuffing. Light, soft, springy and very absorbent. No dirt, no trash, no short, cheap, lousy hair with hide attached to attract rats and mice.

Make Your Horses Worth More Money by enabling them to do more work. These pads keep them free from sores and blemishes so you can get more money for them if you sell them.

Ask Your Dealer **PADS FOR HORSES** Do It Today
The American Pad & Textile Co., Greenfield, O.



THE horse is an oblong-shaped animal with a leg on each corner and a tired temperament, and in a way is much like an egg inasmuch as he is not of much value until broken. But the process of breaking an egg and breaking a horse is considerably different. In fact, breaking a horse is almost entirely dissimilar both in preparation and plot, and while breaking an egg is often exciting to a degree, and sometimes mingled with surprise and regret, still there is not that wild, reckless uncertainty as to whether the breaker will come forth from the ordeal in one piece or be taken home in two baskets, such as one experiences while breaking a horse.

If the horse is successfully broken, however, and without breaking his neck, he is thenceforth a beast of burden, a great joy and help to his master and very useful except when he gets the reins under his tail and kicks the dashboard off the new buggy so far that it takes two days to drive back and get it.

There is a great amount of talk about horse sense, and as a great many people are unacquainted with the horse it should be explained what this means. Horse sense is that peculiar quality which prompts a two-hundred-dollar horse to go out in the pasture, stick his leg through a barbed-wire fence, and saw a foot off; and also it enables a horse worth a dollar and a quarter to take

such excellent care of his health that he lives fourteen years after he has outgrown all usefulness.

The chief amusement of the horse is going to town to buy a new set of shoes, and he likes to see how many times he can knock the wind out of the blacksmith while the pedal adornments are being fitted, and he has lots of fun occasionally trying to kick the hired man's hat through the roof of the barn without knocking his brains out. Although a person can lead a horse to water, it is a well-known fact that he cannot be made to drink, but he will stick his features into the trough up to his eyes, take a long breath, raise his head, and blow his nose in someone's face.

The horse is a very useful animal when he does not run away and break up the vehicles, and in some countries he is used as steak with lots of success; but the horse doesn't like to be treated this way, and every time he sees a butcher shop it makes him sad and downhearted, for he knows he is not going to live so long as he might in other and less barbarous communities.

Speaking of horses, there are horse-shoes and horse cars, horse chestnuts and horse doctors, sawhorses and horsehide leather which generally is imitation, horse laughs and horse sense, and then there are dark horses which sometimes get into the race and upset the dope.

Cattle Eat Spiny Cactus

But, First, the Spines Have to be Singed Off, of Course

By Maurice Floyd

A CORN-BELT farmer on a tour of inspection through the Southwest straddled the shipping-pen fence and eyed with favor the bunch of sleek "white-faces" within.

"What were these steers fattened on?" he asked the native citizen who was idly stroking one of the big fellows with the mild end of a goad.

"Cake and pear," he replied nonchalantly.

The corn-belt farmer dropped quickly from the fence and made for his waiting train. "These pesky Texans never miss an opportunity to guy a tenderfoot," he muttered.

As a matter of fact, however, the native spoke nothing but the literal truth, for crushed cottonseed cake and the native prickly pear are coming to be important factors in feeding throughout the Southwest. Here thousands of acres are covered with the native cactus, or prickly pear, which in the past has not only been useless but a positive nuisance.

Now, however, an inventive genius has contrived a way to rid the plant of its thorns and thus make the juicy "leaves" accessible to the cows. This method of rendering the "pear" eatable consists of simply burning the spines or thorns off with a gasoline torch which operates much the same as the old-time knapsack sprayers. The cattle then graze on the plants just as they stand in the pasture, and cottonseed cake, or any other feeds needed to supplement the cactus, is supplied in huge troughs conveniently placed.

The cactus is not only useful in carrying stock cattle through the winter when grazing is short, and in economically fattening feeders for market, but it makes, when supplemented with other feed, a first-class dairy ration also.

Butterfat Cost Less Than 6c a Pound

The Lasater Dairy, one of the largest in the world, with over a thousand milk cows in its herds, has found this "cake and pear" ration one of the most economical feeds for milk production known. One of their test herds on this feed produced a fraction over a pound of butterfat per cow daily at a cost of only 6 cents.

In making this remarkable record these high-grade dairy cows, after becoming accustomed to the new feed, were allowed free access to the singed pear during the day and a feed of 6 pounds of crushed cottonseed cake was given them in the barns at night.

By using this plant, which abounds in their territory, the stockmen of the Southwest have contrived to utilize a waste product, and doubtless this abundant and cheap feed is destined to play an important part in economical stock-feeding in these days of high-priced feed-stuff.

The Government has also conducted extensive experiments with the prickly pear cactus at Brownsville, Texas, and these are the results:

Prickly pear was found to be very palatable, and when judiciously fed was

cent of water. This analysis, and also the feeding trials, indicated that the pear should be used with some dry feed containing a large amount of protein, and that the pear on account of its



This picture shows the ordinary cactus having spines. After these are burned off with gasoline torch, cattle eat the cactus with relish and do well on it

high mineral content is a good feed to give with a ration deficient in mineral matter, like cottonseed hulls.

When compared with other common roughages in southern Texas the pear was found to have the following relative value for the production of milk fat:

1 lb sorghum hay, equal to 10.1 lb of pear.

1 lb sorghum silage, equal to 3.3 lb of pear.

1 lb cottonseed hulls, equal to 8.3 lb of pear.

The sorghum hay in these experimental rations was about the average quality, while the sorghum silage was below the standard. By substituting 60 to 75 pounds of pear for a portion of the dry roughage the percentage of fat in the milk was decreased forty-two hundredths per cent on an average. It also decreased somewhat the total amount of fat and the percentage of solids not fat, but increased the total yield of milk. Like pasture grass, the pear produced a higher colored butter than did the dry feed. The flavor of the milk and butter was not impaired in any way.

A good daily maintenance ration for grade Jersey cows when dry was found to be as follows:

4 to 6 lb sorghum hay.

1 lb cottonseed meal.

60 to 100 lb pear.

Two dry cows were maintained for fifty and sixty days, respectively, on 113

and 105 pounds of pear per day, with

2 pounds of cottonseed meal as a

supplement. One

cow fed pear

alone for seventy

days lost 30

pounds in weight.

Another cow died

from stoppage of

the small intestine

with balls of fiber

when fed on pear

alone. Cows fed

pear appeared to

be more sensitive

to cold weather

than when fed dry

feed. This was

borne out by the

decrease in milk

production following

"northers." Those

receiving a heavy

ration of pear de-

creased in milk flow

7.46 per cent, and

those on only dry feed 1.91 per cent.

Cows fed no roughage except pear drank no water for days at a time, and then only a few swallows; those fed 75 pounds drank 30 pounds daily; those on dry feed drank 69 pounds per day on an average. From these results it appears that pear is a valuable feed when there is a scarcity of stock water.

Working at the usual rate, one man using a gasoline torch could singe one ton of pear in fifty minutes with one and one-third gallons of gasoline. After singe-

ing, the pear can be harvested by cutting and hauling to the feed lots, or the cattle can be turned into the field. The latter method is more wasteful of the feed, but requires less labor.

Both spiny and spineless varieties were fed in these trials, but no difference could be detected in chemical composition or food value for milk production.

The spineless pear can be harvested more cheaply than the spiny because it does not need singeing, but in southern Texas the yield is less.

Raising Cactus is Interesting Work

Under farm conditions the cost of establishing a field of pear will be \$6 or \$7 per acre. When once established and properly cared for, the field of pear will last indefinitely, the young growth springing from the old stumps as soon as the pear is harvested. In southern Texas no irrigation is necessary, but shallow cultivation sufficient to keep out weeds and grass should be given.

The average yield at Brownsville, Texas, under very favorable conditions, two years from planting, was 85 tons per acre per year. The growth from old stumps is considerably greater, amounting in one test to over 200 tons per acre for the two years' growth. These yields were made under good dry-land cultivation. At San Antonio the yield of native spring cactus was 23 tons per acre without irrigation but with fair cultivation. At Chico the yield of spineless cactus was about 25 tons per acre without irrigation but with expert cultivation.

STORAGE batteries will not freeze so easily if kept fully charged. A temperature of twenty above will freeze the elements of a discharged battery; one three fourths charged will stand any frost likely to be experienced in the United States. Run the motor once in a while and charge the battery when the car is not in use.

SENSE ABOUT FOOD

Facts Worth Knowing

It is a serious question sometimes to know just what to eat when a person's stomach is out of order and most foods cause trouble.

Grape-Nuts food can be taken at any time with the certainty that it will digest. Actual experience of people is valuable to anyone interested.

A Terre Haute woman writes: "I had suffered with indigestion for about four years, ever since an attack of typhoid fever, and at times could eat nothing but the very lightest food, and then suffer so with my stomach I would wish I never had to eat anything.

"I was urged to try Grape-Nuts and since using it I do not have to starve myself any more, but I can eat it at any time and feel nourished and satisfied, dyspepsia is a thing of the past, and I am now strong and well.

"My husband also had an experience with Grape-Nuts. He was very weak and sickly one spring, and could not attend to his work. He was put under the doctor's care but medicine did not seem to do him any good until he began to leave off ordinary food and use Grape-Nuts. It was surprising to see the change in him. He grew better right off, and naturally he has none but words of praise for Grape-Nuts.

"Our boy thinks he cannot eat a meal without Grape-Nuts, and he learns so fast at school that his teacher comments on it. I am satisfied that it is because of the great nourishing elements in Grape-Nuts."

This mother is right. Grape-Nuts food is a certain and remarkable builder of body, nerves and brain.

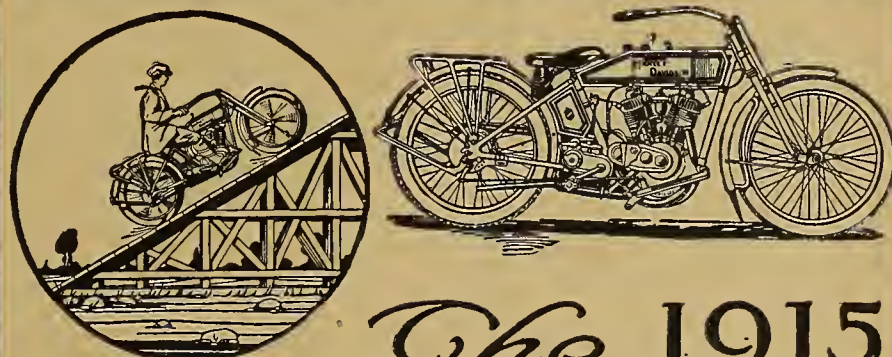
"There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Add to Your Present Income

by acting as local representative for *Woman's Home Companion* and *The American Magazine*. You can earn the same on renewals as on new subscriptions. If you have a few spare hours write to *Chief of Staff, Desk D*,

The Crowell Publishing Company, Springfield, Ohio



The 1915
Harley-Davidson
Three Speed Twin Will
Climb a 60% Grade.

THIS powerful machine has taken a Harley-Davidson and sidecar up a 45 per cent grade without a murmur, a grade nearly twice that of the steepest hill to be found in most localities.

The 1915 Harley-Davidson twin motor is guaranteed to develop eleven actual horse power (37½% more than the 1914 Harley-Davidson twin). This exceptional power in conjunction with the new Harley-Davidson three-speed gives the rider more power than he really needs. If the going is rough, sandy, snowy or muddy, he can shift into intermediate gear and run mile after mile without overheating the motor.

These three-speed gears are cut so perfectly that they do not make a

sound. The rider will find the Harley-Davidson transmission as silent in low or intermediate gear as in high gear. It is possible to shift from intermediate to high gear or to slam into low gear, any time, anywhere, without fear of clashing or stripping of gears. This is positively prevented by an ingenious device.

There are many other features which add to the comfort, durability and economy of the 1915 Harley-Davidson, fully described in our catalog which will be sent upon request.

More Dealers for 1915

Additions to the Harley-Davidson factories enable us to add more dealers for 1915. If, as a dealer, you are situated in a locality where we are not represented and feel qualified to represent the Harley-Davidson in keeping with the Harley-Davidson name and reputation, get in touch with us at once.

Harley-Davidson Motor Company

Producers of High Grade Motorcycles for Nearly Fourteen Years

1019 A STREET,

MILWAUKEE, WIS., U. S. A.



A field of spineless cacti growing in remarkable profusion

in no way detrimental to the cow or her product during two years' trial.

The most satisfactory amount was 60 to 100 pounds of the pear per cow per day, depending upon the size of the cow and upon the yield of milk. With this medium ration the cows looked thrifty, and there was no detrimental effect upon the size and vigor of the offspring or upon the cow after parturition. Larger quantities of the pear caused a laxative condition of the bowels, and kept the stable in a more or less unsanitary condition. Chemical analysis showed that the pear was low in protein, high in mineral matter, and contained 87 to 93 per

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - - Editor

January 30, 1915

War

EVERY land which nourishes human beings at its breast is the Holy Land, and holds in its bosom the sepulcher of the Risen God. They who desecrate it with the horrors of war are the infidels mightier for evil than Saladin.

The great need of this age is a new Peter the Hermit preaching a crusade to take the Holy Land of Homes from these infidels, and dedicate it to the mightiest of all sovereigns, the Prince of Peace.

Cure for Sorehead

A CORRESPONDENT asks for a cure for sorehead. This is a complaint which is found in many neighborhoods. The victim is practically worthless for community purposes, and the ailment is mildly contagious. Sometimes a bad case will spread rapidly. It passes from case to case—through contact in conversation, business dealings, school meetings, and otherwise.

The cure is easy. If the victim will seek out some neighbor and do him a good turn it always helps. If the favor can be done in a whole-hearted way to another victim of sorehead, and especially to a person who harbors a feeling of sore-headedness toward the doer of the good and neighborly deed, so much the better—two cases will be benefited instead of one.

The best remedy is to take a systematic course of helping to make the neighborhood a better place in which to live. Giving up something selfishly desired, like special favors from the road district, the disputed strip of land along the line fence, or one's own way in building or repairing the same, is very good in allaying the irritation of the cranium.

A man who will put himself in the place of his hired man and try to follow the Golden Rule is almost always benefited. Putting in a water system for the wife has been known to cure the worst case, and a washing machine or a dishwasher often helps. One bad case which was constantly irritated by friction between the head of the family—the head which was sore—was completely cured by giving each of the boys a start in live stock and making them partners in the farm operations on a small scale.

Another was restored to health by attendance at meetings of farmers in the neighborhood and serving on one or two committees for the purpose of accomplishing some public good. A bad case of sorehead often comes from defective brooding in solitude—brooding over the victim's own grievances. Association in a broad-minded way with one's fellows, and brooding over ways to make life better for everyone, is the sovereign remedy, with the Golden Rule as the manual and guidebook of life.

On re-reading our correspondent's letter we are fearful that he may refer to something about poultry, as he advertises poultry on his letter-head; but he mentions sorehead in a general way, and we have answered with reference to the cure of the most pestiferous disease under that name of which we know.

Have You Been Approached?

A CONCERN located in Vancouver, B. C., calling itself a national loan, savings, and investment society, is operating extensively through the Middle West, especially among the farmers. Under the pretext that it is a loan association which can after a few months of easy payments grant loans at three per cent, it gets people interested in the prospect that it will make a settlement in lieu of loans which will give the customer a profit of hundreds per cent a year.

One "settlement" is advertised in which a man received a net profit of \$100 on payments aggregating \$50.00. Another got 200 per cent on a five months' investment, or at the rate of 500 per cent a year!

We do not care to advertise the concern by mentioning its name. The name is of small account anyhow, as these fly-by-night companies can change their names overnight.

There are many of these concerns, most of them operating in Canada or somewhere else outside the United States. Their plan seems to be to stimulate business by the payment of great profits to a person here and there, and make their own gains from the flood of remittances which follow.

It is an old scheme, and the person of sound mind who is victimized is not entitled to much sympathy. For it needs no argument to prove that not even the Government of the United States could pay such profits and live. There is no way in which a company can invest the money received and pay more than the average rate of interest. Settlements of the sort advertised are merely baited hooks.

It is not believed that anyone capable of reading this will be in any danger, but there may be people in your list of acquaintances who can be convinced that one and one make six. It will be a kindness to such to warn them.

In view of the fact that these concerns are doing millions of dollars of what they call "business," a warning seems warranted.

Start Now to Keep Books

THE best time to start a set of simple books is before the work starts in the spring.

There is a satisfaction in knowing what the farm is doing financially. Many of us know very well where we stand without keeping books, and there are plenty of well-managed farm businesses carried on without them. Books, however, do reveal things to the mind which would be overlooked or forgotten in the absence of records.

The spring is the time to begin. The amount of farm produce is then at its lowest ebb. The stock has been carried through the winter, consuming hay and grain. Things produced for sale are disposed of. The machinery has been overhauled and examined as to its fitness for next year's service. The farmer has a pretty good idea as to the value of his equipment, and knows what he must buy.

Many rural schools require the pupils to make inventories of the farm equipment. They should all do so as a means of educating the children in business methods. An inventory should be made by someone. This inventoried property added to the value of the farm and its buildings makes up the plant on which profits must be made, as well as wages for the workers and a living for the family.

Few of us are so situated as to keep perfectly accurate accounts of the cost of the things we produce. The best agricultural economists can-

not tell just how to keep these accounts. A set of statistical books for a farm is a much more complex thing than for a factory, a store, or a bank. Farm bookkeeping is most difficult.

The average man will do the best with a system he understands—and this is usually the one he makes for himself. The chief difficulty lies in acquiring the habit of setting things down as they happen, and for this purpose a pencil and a pocket memorandum book is about all that is necessary. From this the transactions may be drawn off to a book of some sort to be kept in the house, where all the entries will be brought together.

The main thing is to make a start and stick to a system. It is really worth while, and the best time to begin it is about now.

Making Good Things Work

THE granges of Michigan are living up to their convictions in the matter of elections. That is, they are adopting in grange matters the election system which the Grange had advocated in the election of public officers.

An advisory primary is taken in the subordinate granges on the election of state grange officers, and the election of the state grange is conducted according to the Australian ballot system. A whole day is saved at the state meeting for discussion of important matters, as the elections merely record the results of the local elections and consume little time.

Now if the granges will adopt the system of second and third choices and proportional representation, the elections will more accurately record the views of the membership, and will be a means of education in ballot reform not only for grangers but the whole nation.

The Road Breaker

THE civilized man makes roads; the savage does not. That is the safest test of civilization.

Among us, in all communities, are individuals who are not really civilized. They do not take any interest in roads.

A man's scale in civilization is very correctly tested by his attitude toward the stone which has rolled into the road, or the tree which has blown down across it. The man who drives around the obstacle day after day is one sort of man, the one who stops his team and rolls or drags it away is another. And a person passing along a road which he does not expect to retrace, who removes the obstruction for the sake of the stranger who comes after him, responds to a very high test of civilization. He feels socially.

Henry Drummond tells us that the paths made by the savages in central Africa are very direct in their general direction, but that there is not a single rod of actually straight path to be found. The savage thinks only of the present trip. He steps aside for every hole, stump, and puddle. The path zigzags clear across the continent. But the civilized man cuts out the curves and reduces the grades. He thinks not only of the present trip, but of the future during which he must pass over this road, and not only of himself but of society at large.

The King drag is a great test of men. Colonel King invented it as a means of making roads, but it is the Babcock test of civilization. It shows the per cent of savagery which remains in any man or neighborhood.

When the snow piles up in the road the man who goes ahead and breaks the path for others bears the burden which he who has made progress always must bear. There is snow in every road—to co-operation, to better schools, to better business methods. There must be road breakers for every path. The road maker is the great civilizer.

The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Seven

JIM IRWIN, school teacher in the Woodruff District, Iowa, believed that rural schools should solve rural problems and graduate efficient rural boys and girls. He taught the three R's in such a way that when his pupils should become farmers and farmers' wives they would find what they had learned useful in raising bumper crops and in buying and selling wisely.

The school board felt that Jim's methods debased education, and the girl whom he liked best in the world, Jennie Woodruff, when she became county superintendent, withdrew from the tender byways where she and Jim had loitered pleasantly, and uttered the threat of dismissal unless he would restore his school to the time-worn methods.

Jennie's father, Colonel Woodruff, whose hired man Jim Irwin was prior to his school election, pledged Jim his staunchest support.

XVII

Jennie Takes the Bit in Her Teeth

THE office of county superintendent was, as a matter of course, the least desirable room of the courthouse. I say "room" advisedly, because it consisted of a single chamber of moderate size, provided with office furniture of the minimum quantity and maximum age. It opened off the central hall at the upper end of the stairway which led to the courtroom, and when court was in session it served the extraordinary needs of justice as a juryroom. At such times the county superintendent's desk was removed to the hall, where it stood in a noisy and confusing but very democratic publicity.

Superintendent Jennie might have anticipated the time when, during the March term, offenders passing from the county jail in the basement to arraignment before the bar of justice would be able to peek over her shoulder and criticize her method of treating examination papers. On the 25th of February, however, this experience lurked unsuspected in her official future.

Poor Jennie! She anticipated nothing more than the appearance of Messrs. Bronson, Peterson, and Bonner in her office to confront Jim Irwin on certain questions of fact relating to Jim's competency to hold a teacher's certificate. The time appointed was ten o'clock.

At 9:45 Cornelius Bonner and his wife entered the office and took twenty-five per cent of the chairs therein. At 9:50 Jim Irwin came in, haggard, weather-beaten, and seedy as ever, and looked as if he had neither eaten or slept since his sweetheart had stabbed him. At 9:55 Haakon Peterson and Ezra Bronson came in, accompanied by Wilbur Smythe, attorney at law, who carried under his arm a code of Iowa, a compilation of the school laws of the State, and Throop on Public Officers.

At 9:56, therefore, the crowd in Jennie's office exceeded its seating capacity, and Jennie was in a flutter as the realization dawned upon her that this promised to be a bigger and more public affair than she had anticipated.

At 9:59 Raymond Simms opened the office door, and there filed in enough children, large and small, some of them accompanied by their parents, and all belonging to the Woodruff School, to fill completely the interstices of the corners and angles of the room and between the legs of the grown-ups. In addition, there remained an overflow meeting in the hall, under the command of that distinguished military gentleman, Colonel Albert Woodruff.

"Say, Bill, come here!" said the Colonel, crooking his finger at the deputy sheriff.

"What you got here, Al?" said Bill, coming up the stairs puffing. "Ain't it a little early for Sunday-school picnics?"

"This is a school fight in our district," said the Colonel. "It's Jennie's baptism of fire I reckon—and say, you're not using the courtroom, are you?"

"Nope," said Bill.

"Well, why not just slip around then," said the Colonel, "and tell Jennie she'd better adjourn to the big room?"

"But I can't, I can't," said Jennie to the courteous deputy sheriff. "I don't want all this publicity, and I don't want to go into the courtroom."

"I hardly see," said Deputy Bill, "how you can avoid it. These people seem to have business with you, and they can't get into your office."

"But they have no business with me," said Jennie. "It's mere curiosity."

Whereupon Wilbur Smythe, who could see no particular point in restricted publicity, said: "Madam County Superintendent, this hearing certainly is public or quasi-public. Your office is a public one, and while the right to attend this hearing may possibly not be a universal one, it surely is one belonging to every citizen and taxpayer of the county, and if the taxpayer, *qua* taxpayer, then certainly *a fortiori* to the members of the Woodruff School and residents of that district."

Jennie quailed. "All right, all right!" said she. "But shall I have to sit on the bench?"

"You will find it by far the most convenient place," said Deputy Bill.

Was this the life to which public office had brought her? Was it for this that she had bartered her independence—for this and the musty office, the stupid examination papers, and the interminable visiting of

schools? What was the use of it when she knew that such supervision as she could give them was worthless?

Jim had said to her that he had never heard of such a thing as a good county superintendent of schools, and she had thought him queer. And now here was she, called upon to pass on the competency of the man who had always been her superior in everything that goes to make up intellect; and to make the thing more a matter for the laughter of the gods she was perched on the judicial bench, which Deputy Bill had dusted off for her, tipping a wink to the crowd while doing it. He expected to be a candidate for sheriff one of these days, and was pleasing the crowd. And that crowd! To Jennie it was appalling.

The school board under the lead of Wilbur Smythe took seats inside the railing which divided the audience from the lawyers and litigants. Jim Irwin, who had never been in a courtroom before, herded with the crowd, obeying the attraction of sympathy, but to Jennie, seated on the bench, he, like other persons in the auditorium, was a mere blurry outline with a knob of a head on its top.

She couldn't call the gathering to order. She had no idea as to the procedure. She sat there while the people gathered, stood about whispering and talking

How she wished that the office of county superintendent had been abolished in the days of her parents' infancy!



under their breaths, and finally became silent, all their eyes fixed on her. How she wished that the office of county superintendent had been abolished in the days of her parents' infancy!

"May it please the court," said Wilbur Smythe, standing before the bar, "or Madam County Superintendent, I should say—"

A titter ran through the room, and a flush of temper tinted Jennie's face. They were laughing at her! She wouldn't be a spectacle any longer! So she rose, and handed down her first and last decision from the bench—a rather good one, I think.

"Mr. Smythe," said she, "I feel very ill at ease up here, and I'm going to get down among the people. It's the only way I have of getting the truth."

She descended from the bench, shook hands with everybody near her, and sat down by the attorney's table.

"Now," said she, "this is no formal proceeding, and we shall dispense with red tape. If we don't I shall get all tangled up in it. Where's Mr. Irwin? Please come in here, Jim. Now, I know there's some feeling in these things,—there always seems to be,—but I have none. So I'll just hear why Mr. Bronson, Mr. Peterson, and Mr. Bonner think Mr. James E. Irwin isn't competent to hold a certificate."

Jennie was able to smile at them now, and everybody felt more at ease, save Jim Irwin, the members of the board, and Wilbur Smythe. That individual arose, and talked down at Jennie.

"I appear for the proponents here," said he, "and I desire to suggest certain principles of procedure which I take it belong indisputably to the conduct of this hearing."

"Have you a lawyer?" asked the county superintendent of the respondent.

"A what?" exclaimed Jim. "Nobody here has a lawyer!"

"Well, what do you call Wilbur Smythe?" queried Newton Bronson from the midst of the crowd.

"He ain't lawyer enough to hurt!" said the thing which the dramatists call A Voice.

There was a little tempest of laughter at Wilbur Smythe's expense, which was quelled by Jennie's rap-

ping on the table. She was beginning to feel the mouth of the situation.

"I have no way of retaining a lawyer," said Jim, on whom the truth had gradually dawned. "If a lawyer is necessary, I am without protection; but it never occurred to me—"

"There is nothing in the school laws, as I remember them," said Jennie, "giving the parties any right to be represented by counsel. If there is, Mr. Smythe will please set me right."

She paused for Mr. Smythe's reply.

"There is nothing which expressly gives that privilege," said Mr. Smythe, "but the right to the benefit of skilled advisers is a universal one. It cannot be questioned. And in opening this case for my clients I desire to call your honor's attention—"

"You may advise your clients all you please," said Jennie, "but I'm not going to waste time in listening to speeches or having a lot of lawyers examine witnesses."

"I protest," said Mr. Smythe.

"Well, you may file your protest in writing," said Jennie. "I'm going to talk this matter over with these old friends and neighbors of mine. I don't want you dipping into it, I say."

Jennie's voice was rising toward the scream line, and Mr. Smythe recognized the hand of fate. One may argue with a cantankerous judge, but the woman who, like necessity, knows no law, and who is smothering in a flood of perplexities, is beyond reason.

Moreover, Jennie dimly saw that what she was doing had the approval of the crowd, and it solved the problem of procedure. There was a little wrangling, and a little protest from Con Bonner, but Jennie ruled with a rod of iron and adhered to her ruling.

When the hearing was resumed after the noon recess the crowd was larger than ever, but the proceedings consisted mainly in a conference of the principals grouped about Jennie at the big lawyers' table. They were talking about the methods adopted by Jim in his conduct of the Woodruff School—just talking.

The only new thing was the presence of a couple of newspaper men who had queried Chicago papers on the story, and had been given orders for a certain number of words on the case of the farm-hand schoolmaster on trial before his old sweetheart for certain weird things he had done in the home school in which they had once been classmates. The fact that the old school sweetheart had kicked a lawyer out of the case was not overlooked by the gentlemen of the fourth estate. It helped to make it a "good story."

XVIII

Convicted of Idealism

BY THE time at which gathering darkness made it necessary for the bailiff to light the lamps the parties had agreed on the facts. Jim admitted most of the allegations.

He had practically ignored the textbooks. He had burned the district fuel and worn out the district furniture early and late, and on Saturdays. He had introduced domestic economy and manual training, to some extent, by sending the boys to the workshops and the girls to the kitchens and sewing-rooms of the farmers who allowed those privileges. He had used up a great deal of time in studying farm conditions. He had induced the boys to test the cows of the district for butter-fat yield.

He was studying the matter of a co-operative creamery. He hoped to have a blacksmith shop on the schoolhouse grounds, some time, where the boys could learn metal-working by repairing the farm machinery and shoeing the farm horses. He hoped to install a co-operative laundry in connection with the creamery. He hoped to see a building, some time, with an auditorium where the people would meet often for moving-picture shows, lectures, and the like; and he expected that most of the descriptions of foreign lands, industrial operations, wild animals—in short, everything that people should learn about by seeing, rather than reading—would be taught the children by moving pictures accompanied by lectures.

He hoped to open to the boys and girls the wonders of the universe which are touched by the work on the farm. He hoped to make good and contented farmers of them, able to get the most out of the soil, to sell what they produced to the best advantage, and at the same time to keep up the fertility of the soil itself. And he hoped to teach the girls in such a way that they would be good and contented farmers' wives. He even had in mind, as a part of the schoolhouse the Woodruff District would one day build, an apartment in which the mothers of the neighborhood would leave their babies when they went to town, so that the girls could learn the care of infants.

"An' I say," interposed Con Bonner, "that we can rest our case right here. If that ain't the limit I don't know what is!"

"Well," said Jennie, "do you desire to rest your case right here?"

Mr. Bonner made no reply to this, and Jennie turned to Jim.

"Now, Mr. Irwin," said she, "while you have been following out these very interesting and original methods, what have you done in the way of teaching the things called for by the course of study?"

"What is the course of [CONTINUED ON PAGE 21]

OUR NATIONAL DISEASE

Caused by Coffee

Physicians know that drugs will not correct the evils caused by coffee and that the only remedy is to stop drinking it.

An Arkansas doctor says:

"I was a coffee drinker for many years and often thought that I could not do without it, but after years of suffering with our national malady, dyspepsia, I attributed it to the drinking of coffee, and after some thought, determined to use Postum for my morning drink.

"I had the Postum made carefully according to directions on the pkg. and found it just suited my taste.

"At first I used it only for breakfast, but I found myself getting so much better, that I had it at all meals, and I am pleased to say that I have been relieved of indigestion. I gained 19 pounds in 4 months and my general health is greatly improved.

"I must tell you of a young lady in Illinois. She had been in ill health for many years, the vital forces low, with but little pain. I wrote her of the good that Postum did me and advised her to try it.

"At the end of the year, she wrote me that she had gained 40 pounds in weight and felt like herself again."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum comes in two forms:

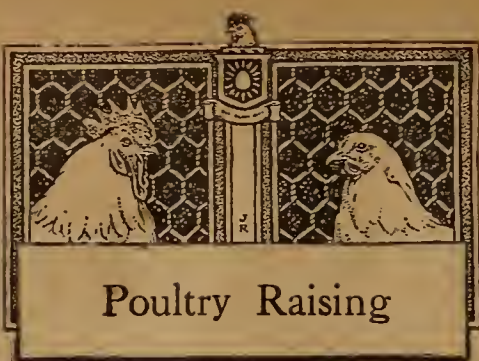
Regular Postum—must be well boiled. 15c and 25c packages.

Instant Postum—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water, and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

The cost per cup of both kinds is about the same.

"There's a Reason" for Postum.

—sold by Grocers.



Poultry Raising

Planning the High Hatch

By B. O. Highland

FIRST, the housing of the breeding stock is important. Good drainage around the house and yards, plenty of light and ventilation, absence of drafts and vermin, abundance of clean litter to encourage exercise, and good sanitation throughout are all essential.

Second, use one good active yearling cock bird abounding in vitality to every 8 to 12 vigorous yearling hens.

Third, furnish clean, wholesome feed and water so balanced as to produce muscle and vigor rather than to force too heavy egg production. The dry-mash feed should be kept in hoppers and some grain frequently fed in litter to encourage exercise. Supply fresh water frequently in metal or earthen vessels where it will be free from filth and litter. Use clean straw in the nests.

Fourth, gather the eggs twice a day, in the middle of the forenoon and in the middle of the afternoon, and oftener in cold weather. Ninety-five per cent of these eggs will hatch if the care indicated is taken in handling the breeding stock.

Don't Keep Ducks Too Long

By P. F. Woodworth

AFTER five years of careful experimenting I have found that Indian Runner ducks will give the best results if the following rules are observed:

Do not shut them in a closed house. The front should be wire mesh, with the exception of about eighteen inches at the bottom, which should be of board.

Many writers claim that the Indian Runner duck improves with age up to the fifth year. However, the man who is making money with market eggs from

this bird will tell you not to keep them over eighteen months of age. For instance, a beginner has decided to raise Runner duck eggs for market. He should not hatch a duckling till the latter part of June. This will bring them at a laying age in December. Bear in mind that the Indian Runner is just naturally bound to lay when matured.

A Year's Laying is Enough

Ducks that are hatched with the winter egg production in view will start laying in December and give splendid results until the following August, when they pass through a slight molt which reduces the egg output to a minimum. This continues till the middle of September, when the yield increases until you begin to wonder how they do it. Just keep wondering until the latter part of November. Then market without fail. Disappointment will follow if they are kept longer.

Remember that during the entire year they should not be fed a kernel of whole grain, as they will produce the most eggs on a diet of cooked vegetables mixed with bran and a little corn meal, also a liberal amount of meat scraps.

They should not have free access to a pond or brook; but, if such is available, a very small portion of it should be fenced in and included in their yard.

Why the Hens Didn't Lay

A Story in Five Parts

Part II

The Roof Leaked



A LITTLE brown hen got the roup from storms that blew right through the coop. "Lay eggs in this shack? Not a one," she sassed back. "Every chick would be hatched with the croup."

Part III will appear next issue

The Hen is Looking Up

LETTERS are constantly coming to hand showing how wide-spread is the idea of so changing poultry operations as to increase profits. A letter from Miss Ida E. Bloye is significant of this:

A shop that I transformed into a poultry house became so infested with lice that I procured a commercial carbolic-acid preparation and painted with it the walls, perches, nests, and furnishings once a year, and treated the poultry with a good louse powder spring and fall. Thus I keep the birds free from lice and mites.

The drafty, cold house was made comfortable with tar paper, and by light and ventilation through glass and wire-screening.

I use for a poultry range a large orchard enclosed with 5-foot netting and divided into four runs so that they may be rotated. Next spring the runs will be limed and seeded to provide green food.

My laying hens are housed from snow time in the fall until it is gone in the spring, but my breeding hens run in and out at pleasure.

Hog Rings for Leg Bands

For marking my hens I use hog rings for leg bands—one ring for pullets, two for yearlings, and three for two-year-olds.

I feed a dry mash composed of one part each of wheat bran, corn meal, wheat middlings, gluten meal, one-half part oil meal, and one-half to one part beef scrap, according to the season.

The mixed scratch grain is cracked corn, wheat, oats, and buckwheat; green feed, cabbages, and other suitable succulent material; and of course oyster-shell grit and fresh water are always before the hens.

My hens lay the whole year round, and from 50 to 60 per cent in midsummer since I adopted my present plan of handling them, whereas they laid only from March to August under the former haphazard system.

I cull my hens in June, August, and September, and sell the culls. I also ship all my eggs where there are no commission charges to be deducted. My stock is pure-bred utility Brown Leghorns.

Besides furnishing a profit, my present plan of keeping hens affords me the means of improving my health.

THE PROFITS IN POULTRY KEEPING

IS THE TITLE of our 200-page, 7x10 Free Complete Catalogue and Poultry Guide for 1915, which we mail post-paid to any address on request. Illustrates and fully describes our **three styles of Incubators, eight different sizes**, ranging in price from \$10 to \$38; also our self-regulating, self-ventilating, all-metal Portable and Adaptable Brooding Hovers and nearly 100 other useful, standard articles we manufacture for successful money-making poultry keepers on any scale of operation. WRITE TODAY for our Catalogue and other valuable free printed matter to our place of business nearest you.

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Poultry raisers ought to follow the simple and easy Buckeye system which positively hatches every hatchable egg. How to make \$200 a season with one incubator that costs \$7.50 is fully explained in a most interesting book which will be sent absolutely free to any reader who mentions this paper. Every one should write today for this valuable free book to BUCKEYE COMPANY, 638 Euclid Ave., Springfield, O.

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Both are made of Calif. Redwood. Incubator is covered with asbestos and galvanized iron; has triple walls, copper tank, nursery, egg tester, thermometer, ready to use. 30 DAYS TRIAL—money back if not O.K. Write for FREE Catalogue Now.
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in each town to ride and exhibit sample 1915 "Ranger" Bicycle. Write for special offer. We ship on approval without a cent deposit, allow 30 DAYS FREE TRIAL, actual riding test, and prepaid freight on every bicycle. **LOWEST PRICES** on bicycles, tires and sundries. Do not buy until you receive our catalogs and learn our unheard of prices and marvelous special offer. Tires, coaster-brake rear wheels, lamps, parts, sundries, half usual prices.
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130 Egg Incubator
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BOTH FOR \$10 Freight Paid East of Rockies
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YOU can't beat nature's way. You can't beat the heat under the mother hen for hatching eggs. That heat is a moist heat. Every man and woman—every boy and girl on the farm knows that. The heat of old style incubators is too dry. It kills chicks in the shell. We have overcome that difficulty responsible for most of the failures of incubation. Yes, sir! We have matched the hen's heat in the X-Ray perfectly. We have done it by the X-RAY Radiator and Vapor Generator.

The greatest improvement that we have added to incubator science. No other machine has it. No other machine can ever use it. Completely covered by U. S. government patents.

In the X-Ray Heating System the Vapor Generator is so located that all the heat from the lamp below is concentrated on it before the heat enters the X-Ray Radiator. This warms the water—creates a vapor—and the heat then passes on to the radiator tubes. These in turn radiate heat currents which must pass over and through this warm vapor before coming in contact with the eggs.

Insurance Against Dead-in-Shell Chicks
This great triumph in incubator construction cuts down the old trouble of dead-in-shell chicks. No more failures because the heat is too dry! In the X-Ray the heat is scientifically right. No guesswork. The gentle, even, vapor laden heat reaches each egg alike—the eggs in the farthest corners the same as the middle.

Send for new Free X-Ray Catalog No. 52, the finest Incubator Book we ever published. Tells you all about 15 great special features of X-Ray. Low prices direct from factory, freight prepaid. No agents.

X-RAY INCUBATOR COMPANY
Des Moines, Iowa

Only One Filling, Only One Gallon of Oil to Hatch

The Best Hog-Health Insurance

Continued from Page 5

another advantage. Vaccination with anti-hog-cholera serum is the only treatment officially approved by the government and the best state authorities. Still, a great many medicines are being sold for treating hogs for cholera or against cholera, and judging from testimonials some of these medicines are apparently successful. But when you look into specific cases and try to secure conclusive evidence, you meet with many surprises.

Last fall, after FARM AND FIRESIDE had published an article on hog cholera, mentioning some "cures" that didn't cure, we received a letter from Mr. J. T. Tooloose, a farmer living southeast of St. Louis, Missouri, and here is the essential part of what he said:

I want to say there is a cure for hog cholera, an absolute cure. To begin with, hog cholera is a germ that works very fast, and on the bowels and blood, and must be treated with a germicide. After much experimenting and dissecting I have discovered the antidote, and have used it for twenty years in my neighborhood, and one spring when there was an epidemic I went to the National Stockyards at East St. Louis and cured 170 out of 200 condemned hogs, and sold them to the packing house subject to post-mortem inspection, and only one failed to pass. The hogs were in a dying condition when turned over to me.

That letter was sincerely written, as was proven by events that followed; but on investigation in his neighborhood, and after an interview with Mr. Tooloose himself, these were the actual facts:

No Proof That It Was Cholera

The remedy was first tried twenty-six years ago, and the stockyards test was made seventeen years ago. The few

and then to have the state veterinarian injure their business by unfavorable reports was the height of inconsistency, he said. Of course there are many other so-called remedies besides those mentioned.

The general sentiment among manufacturers of patent cholera "cures" was lack of faith in the state and government officials. These officials were accused of being prejudiced against all treatments except serum, and of either refusing to test new remedies or giving unfair tests. The state serum plants were claimed to be "gold mines" of revenue. In short, there is a good deal of bad blood over the whole affair.

There's Nothing Secret About Serum

My sympathies are with those who believe they have a cure and are unable to get a prompt and fair official test on it. But all the best evidence and my personal convictions after hearing both sides are strongly against proprietary cholera remedies and alleged "cures." The serum treatment is the only cholera remedy, I am confident, where you get 100 cents' worth of protection for your dollar.

The manufacture of serum is open and aboveboard. The processes are not patented, and visitors are welcome in all of the serum establishments I have visited. On the other hand, descriptions of the patent "cures" are surrounded by the manufacturers with a sort of mystery.

Doctor Ladd, food commissioner of North Dakota, has analyzed some of the alleged cures. One called "hog cholera vaxal" was composed of water, glycerin, and potassium iodide. The amount of glycerin in a 4-ounce bottle of this



These feeding sheds are part of a remarkable system of hog-raising described on page 16. The flax used is stored overhead

local people who had used the remedy had either moved away or had died. According to Mr. Tooloose, the two government inspectors who passed the hogs he "cured" found no scars or any trace whatever of cholera, although five days before the hogs had been said to be in a dying condition.

The only conclusion is that the hogs had something the matter with them, but it was not cholera. In fact, Mr. Tooloose quotes Doctor Brome, the chief inspector, as saying, "You have done something remarkable with those hogs, but I couldn't say the hogs had cholera." Mr. Tooloose himself wasn't sure it was cholera.

Many folks who write testimonials for the different "cures" undoubtedly do so thinking they have cured cholera when their hogs really had some other ailment or were simply off their feed for a few days. The instructions for dieting the hogs, that come with the medicines, may really do more good than the medicines themselves.

State Authorities Criticised

The John Dobry Manufacturing Company of Cedar Rapids, Iowa, has a powder which they claim to be a "positive cure for hog cholera." Mr. Dobry, treasurer of the company, told me: "Ninety per cent of those who have tried our remedy are pleased with it. When you consider that most of our customers wait till their hogs are sick before they try the remedy, that is a good percentage of satisfied patrons."

My impression of Mr. Dobry was that he sincerely believed in his remedy. He was eager to have it tested at the State Biological Laboratory at Ames, but insisted on having a representative there to see that the test was fairly made. In response to a letter written to the state authorities making this request, Mr. Dobry said he got no reply.

Charles F. Ritter, vice-president of the Thiele Laboratories Company, Columbus, Ohio, claims that the state authorities of Ohio gave the Thiele remedy an unfair test. He insisted further that if their remedy was considered worthless the State should prove it to be worthless and stop the sale of it. But to have the State charter the company to do business

remedy figures out to be worth about 2 cents and the potassium iodide in it about 12 cents. But the price of this 14-cent mixture when bottled and sold as a cholera remedy is \$3.50.

For official tests of the different patent remedies we must go to the experiment stations, but I will quote only those state officials whom I have personal reason to know are absolutely fair and trustworthy.

A Test That Fake Remedies Can't Stand

"I cannot understand," says Doctor Schoenleber of Kansas, "why the different remedies that are reported to be so successful when someone else tries them never show any merit when we try them here at the station under test conditions. Last year when we had that new horse disease in the western part of the State, we offered a thousand dollars for a cure. We were simply swamped with letters. About 80 per cent of them were worthless on the face of them. All that seemed promising were tested, but out of the whole bunch we didn't get a cure or any clue to a cure. If a sick animal is given medicine and gets well, a great many people honestly conclude that the medicine cured it, whereas the animal might have recovered without the medicine, or in spite of it."

The Wisconsin Experiment Station makes a fair proposition to concerns of that State who have alleged cholera cures. "We are willing to take five pigs," says Dr. F. B. Hadley, who has charge of the cholera work, "and let any man administer his remedy in any way that he wants to. He can be with the pigs all the time if he desires. Then we will inject into each pig one cubic centimeter of cholera blood, to be sure that the pigs have the cholera. If the pigs live we shall admit that a new and effective remedy has been discovered, but if they die the man with the remedy must pay for them. Thus far no treatment except the serum treatment has stood that test."

Concerning the charge that state serum plants are "gold mines" of profit, I can only say that state serum is usually cheaper than serum from commercial concerns, at least in the Middle West where the serum industry is centered. In Illinois [CONTINUED ON PAGE 16]



There is no good reason why you should wait till Spring before getting a

DE LAVAL CREAM SEPARATOR

ON THE CONTRARY YOU may buy a De Laval NOW and save half its cost by May. If, for any reason, you can't conveniently pay cash you can buy a De Laval on such liberal terms that it will actually pay for itself.

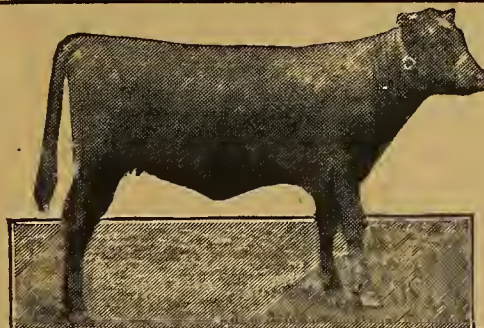
AS TO YOUR NEED OF A separator, if you have the milk of even a single cow to cream you are wasting quantity and quality of product every day you go without one. This waste is usually greatest in cold weather and with cows old in lactation, and it counts most, of course, when butter prices are high.

THEN WITH A SEPARATOR there is always the sweet, warm skim-milk and saving of time and labor in addition.

WHEN IT COMES TO A choice of separators De Laval superiority is now universally recognized. Those who "know" buy the De Laval to begin with. Those who don't "know" replace their other separator with a De Laval later—thousands of users do that every year. If you already have some other machine the sooner you exchange it for a De Laval the better.

WHY NOT START 1915 right in dairying? SEE and TRY a DE LAVAL NOW when you have plenty of time to investigate thoroughly. The nearest DE LAVAL agent will be glad to set up a machine for you and give you a free trial.

The De Laval Separator Co., 165 Broadway, New York
29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



Raised Without Milk!

Her name is "Daisy" and her owner, W. A. Riddle, of Chapin, Iowa, raised her on Blatchford's Calf Meal, which costs less than half as much as milk.

Blatchford's Calf Meal

An absolute preventive of scouring. Calves raised "The Blatchford Way" are heavier, bigger-boned and healthier. Known as the complete milk substitute since the year 1800. Sold by your dealer or direct from the maker.

See Actual Figures —based on results—that show you how to increase your calf profits. Write today. Blatchford Calf Meal Factory, Dept. 4041, Waukegan, Illinois

\$15.95
Upward
ON TRIAL

AMERICAN CREAM SEPARATOR

A SOLID PROPOSITION to send fully guaranteed, a new, well made, easy running, perfect skimming separator for \$15.95. Skims warm or cold milk; making heavy or light cream. The bowl is a sanitary marvel, easily cleaned.

ABSOLUTELY ON APPROVAL

Get thoroughly protected. Different from this picture, which illustrates our large capacity machines. Western orders filled from Western points. Whether your dairy is large or small write for our handsome free catalog. Address: AMERICAN SEPARATOR CO. BOX 3058, Bainbridge, N. Y.



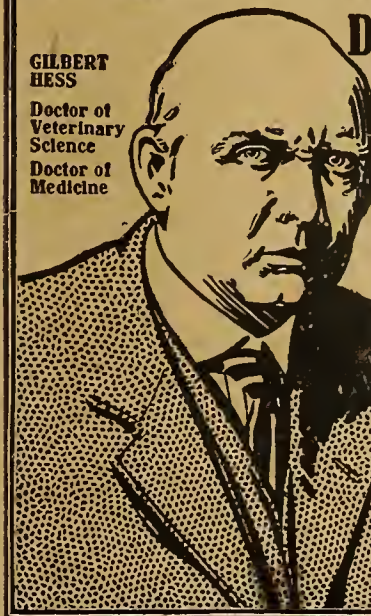
OLD COINS WANTED

We pay \$50 for 1853 half dol. no arrows; \$5 for 1878 Half S. Mint. We pay cash premiums for thousands of rare coins to 1909. Get posted. Send 4c. Get our Illus. Coin Circular. Send now. NUMISMATIC BANK, Dept. 36, Fort Worth, Tex.

Condition Your Poultry Now To Be Sure Of Fertile Hatching Eggs

On the condition of your flock during the coming few weeks will depend the number of fertile eggs you get and the health and stamina of your spring hatches. Get your poultry fit and healthy right now and aim at a good egg supply. So sure am I that

Dr. Hess Poultry Pan-a-ce-a



GILBERT HESS
Doctor of Veterinary Science
Doctor of Medicine

will tone up and invigorate your poultry, make them healthy, make your hens lay and help your chicks grow, that I have authorized my dealer in your town to supply you with enough for your flock; and if my Pan-a-ce-a doesn't do as I claim, return the empty packages and get your money back. Buy on that guarantee—you can't possibly lose.

1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50 (except in Canada and the far West). My Pan-a-ce-a is never peddled—it is sold only by reputable dealers whom you know. Write for my free poultry book.

DR. HESS & CLARK
Ashland, Ohio



SECURITY AND SATISFACTION IN ELECTRIC LIGHT

The man who has equipped his home with electric light has practically abolished all worry about fire, increased the efficiency of his house, buildings and grounds, and added to the value of his entire property.

Electric light is now placed within the reach of all by

The "Hyraz-Exide" ELECTRIC PLANT UNIT

Low initial cost, operating expense but a few cents a day. An occasional running of a gas engine gives a full 24-hour electric service.

Strong, hot simple—easy to install, easy to operate. Thousands now in use throughout the country.

This is your chance to give your home the many benefits of electricity. Write our nearest office for our new free book. It tells the full story. It will show the way to better living.

THE ELECTRIC STORAGE BATTERY CO. PHILADELPHIA, PA.

New York, Boston, Chicago, St. Louis, Cleveland, Rochester, Atlanta, Denver, Detroit, Washington, Pittsburgh, Los Angeles, San Francisco, Seattle, Portland, Ore., Toronto.



Poultry Raising

A Strong Poultry Crate

By Earle B. Shaw

AFTER many years of experience I have found this crate to embrace about all of the desirable features and but few of the faults of the average shipping crate. It is easily made, cheap, durable, and practical. The size illustrated holds 20 large fowls without overcrowding. It is equally good for large fowls or half-grown chickens.

You will need: 3 pieces of galvanized iron or other scrap metal, each 6 inches long and 1/2 inch wide; 9 pine strips cut from 7/8-inch stock, each strip 4 feet long and 1 1/4 inches wide; 6 strips cut from the same stock, 2 feet 4 inches long; 19 laths, each cut into pieces 1 foot in length—75 1-foot pieces are required. Use 6-penny box nails in the 7/8-inch stock, and 3-penny nails for the laths.

Soak the stock overnight so as to prevent splitting and waste of material. The entire cost of the stock will be about 40 cents per crate, the amount varying somewhat according to price and quality of lumber. My crates weigh 35 pounds apiece.

First: Build four sections, which I will designate as top, bottom, and sides. Take two of the 4-foot strips and nail on

them twelve of the 1-foot lath strips, and leave a space of 4 1/2 inches in the center of the sections. Nail on the two end laths, then those on each side of the center opening. Next nail on the remaining laths equal distances apart, using twelve on each section. Build four of these sections.

Now build three sections for ends and center division. Take two of the pine strips that are 2 feet 4 inches long. Nail a 1-foot strip of lath at each end, then nail on seven more strips, equal distances apart.

You are now ready to assemble the crate. Stand one of the short sections on end and place upon it (with laths on the inside) one of the side sections, so that it will appear between and evenly divide the space in the center. Nail them together. Next nail another short section to the end of the under side of this section. Remember to place the sections so the lath strips will be inside the finished crate. Next place your other short end section in position and nail in place. These sections make the two ends and the center dividing wall of the crate.

Now turn the partially constructed crate over, and nail upon the exposed



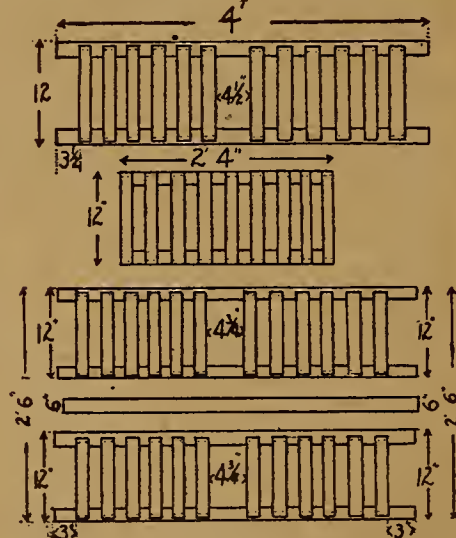
The crate complete. Small sketch to the right shows how the bar slides

ends of the three short sections one of your remaining long sections. You now have the crate complete except the top and bottom. Next place the two remaining sections on top of the crate, placing them flush with the side strips, and nail in position.

Next take the three pieces of strap metal and fit them at the ends and center over the 4-foot sliding bar that is to serve as a center strip or door. Nail the pieces of strap metal in place somewhat loosely so that the middle bar will slide beneath them readily. (See detail sketch at right of crate.) Now punch a small hole in the middle of the center strap of metal. A single screw can be inserted in this hole and driven into the sliding bar after the crate has been filled, and your birds will be securely fastened.

Nothing remains to complete the crate except a floor. The bottom may be boarded either lengthwise or crosswise, according to the stock you have on hand. Although not essential, a protection to the bottom is secured by 4-foot strips of 7/8-inch stock nailed on the bottom at the outer edges of the crate like runners.

To take out the birds remove the screw and slide the bar so you can remove



See how easy the sections are to make

birds from one compartment, then simply slide the bar back to the other side and take the birds from the other compartment.

"I'd HATE to sleep with a scoundrel," says Dad Millslagle, "and I have to go to bed with myself every night. These two things have done a whole lot to keep me on the right path."

THE Nebraska Extension News Service informs us that a Massachusetts dairyman bought a car of alfalfa in Nebraska last December which delivered forty miles from Boston stood to cost him \$37 a ton. The Massachusetts man stated that he expected to feed it at a profit. Will some of our New England readers give us their views on the question of profit or loss in this transaction?

The Japanese are certainly ingenious, and efficient experimenters. Our consul at Yokohama reports that one of their scientists has found that by giving the eggs of silkworms a bath in hydrochloric acid they are hastened in their hatching. By using this method ten broods of eggs may be secured per year instead of two. Moreover, the worms spin nearly twice as much silk, and of a better fiber.

WHY WOMEN LIKE THE RADIO ROUND

Less Dirt Less Work Less Time Less Worry

Needs only three minutes care a day. Fill tank just once for hatch. Turn eggs without removing tray. Get at eggs simply by raising hinged cover. See eggs and thermometer through double glass panels in cover—no stooping, no lighting of matches and peering. No oil to wash off hands daily. Work and dirt cut to minimum.

Bigger Hatches at Less Cost

The Radio-Round incubator hatches on one gallon oil, one filling of tank. Needs less oil because it wastes no heat, due to its center heater with lamp beneath, complete circuit radiators and automatically controlled flame. Needs less heat because it is round like a hen's nest—no cold corners. Heat always uniform.

New Radio VAPORIZING MOISTURE ATTACHMENT insures bigger hatches and stronger chicks—fewer chicks dead in the shell. Diffuses a gentle moisture throughout the egg chamber and affords to every egg the normal, natural moisture conditions it would have under the sitting hen. Our book, with direct prepaid prices, describes sixteen separate points of superiority. Write today for Free Book No. 7. RADIO-ROUND INCUBATOR CO. Drawac, Wayne, Neb.

I'll Start You

and keep You Going Right in the POULTRY BUSINESS

My World-famous high-quality incubators and brooders, and my 20 Free Poultry Lessons make success easy and sure for you! Lessons given FREE to every purchaser of a

SUCCESSFUL Incubator or Brooder

With the free advice and lessons I give my customers, no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, book, prices and proposition. "Proper Care and Feeding of Chickens, Ducks and Turkeys"—sent for 10 cents.

Successful Grain Sprouters furnish green food, make hens lay in winter. Ask about my high grade poultry—all leading varieties.

J. S. Gillest, Pres. DES MOINES INCUBATOR CO. 61 Second St., Des Moines, Ia.

Advertisement for Reliance Incubator with price \$7.75 and \$10.50. Includes text: "For 150-Egg Size Reliance Incubator With 150 Chick Brooder, Only... \$10.50".

57 BREEDS Fine pure bred chickens, ducks, geese and turkeys. Northern raised, hardy and very beautiful. Fowls, eggs and incubators at low prices. America's greatest poultry farm. Send 4c for fine 100-page 21st Annual Poultry Book. R. F. NEUBERT CO., Box 829, MANKATO, MINN.

43 VARIETIES poultry, pigeons, ducks, geese, water fowl. Incubators, feed and supplies. Catalogue 4 cents. Missouri Squab Co., Dept. XX, Kirkswood, Mo.

58 BREEDS, Ducks, Geese and Turkeys. Hardy, northern raised. Choice Fowls, eggs and incubators at low prices. America's Pioneer Poultry Farm; 20 year exp. Send 4c for large fine Poultry book and Catalog. F. A. NEUBERT, Box 614, Mankato, Minn.

FARM FENCE 11 1/2 CENTS A ROD for a 26-inch high fence; 17 1/2 c. a rod for 47-in. stock fence; 28 c. a rod for 60-in. heavy poultry fence. All Open Heart Galvanized wire. Sold direct to the farmer on 30 days FREE TRIAL. Barbed Wire, 30 rod spool, \$1.45. Catalog free. INTERLOCKING FENCE CO. Box 21 MORTON, ILLS.

11¢ A ROD Be your own dealer. Buy direct from the mill. Get out 40 page money-saving fence and gate catalog free. 164 styles to select from. Factories and warehouses at Ottawa, Kansas, Brazil, Ind., Lincoln, Neb., Denver, Colo., Ft. Worth, Texas and San Francisco. Write today. OTTAWA MANUFACTURING COMPANY 116 King St., Ottawa, Kans., or 116 Church St., Brazil, Ind.

Advertisement for Rowe's Hog Oiler. Includes text: "Sent Freight Paid on 30 Days' FREE Trial". Features a picture of a hog and technical details about the oiler.

Advertisement for Cushman Light Weight Engines. Includes text: "For All Farm Work". Features a picture of an engine and technical specifications.

Large advertisement for Belle City Incubator. Features a portrait of Jim Rohan, Pres. and text: "Get the Whole Wonderful Story Write for Free Book 'Hatching Facts'".

Advertisement for Cyclone Fence Co. Includes text: "Cyclone-Waukegan Ornamental Fence" and "Cyclone Victor Farm Gate".

Advertisement for Brown's Fence Bargain Book. Includes text: "BROWN'S FENCE BARGAIN BOOK FREE" and "Send Your Name NOW".



Largest general nursery in America. Established for 61 years. Choicest seeds, bulbs, plants, shrubs and trees. Sixty acres of home-grown roses. Free catalog. Safe arrival and satisfaction guaranteed. (96)

The Storrs & Harrison Co.
Nurserymen, Florists and Seedsmen
Box 478, Painesville, Ohio



Farm Notes

Fixing Up the Junk

By C. Bolles

THE article, "When Junk Sits in Judgment," in a recent issue of FARM AND FIRESIDE, prompts me to tell some experiences along that line. I live in the dry-farming belt where, in order to get along, a person must spend only that which he actually possesses, not what he thinks he will possess next year in the form of a crop.

The rule of buying only what you have money to pay for has brought me to the point where I feel it is better to buy an old machine and pay for it than to go to town and buy the same article on time and pay for it in the indefinite future. We pay 10 per cent interest here. Five years ago I thought the wheat crop justified the purchase (on time, of course) of an elaborate line of harvest machinery. To-day I am just halfway to the end of that purchase, and have paid one fourth its value in interest. That is the result of buying on prospects.

Own It Yourself and Be Happy

Last year I went to a sale and bought an old grain binder for \$15 cash. That machine paid for itself in the one year, and will serve my purpose for years yet to come with but little repairing. This year I went to another sale and invested in an old corn binder that had been worn out twice before I got it; yet with a thorough overhauling it has cut over fifty acres of but \$20, and the machine is still good for some years.

I don't claim that I have a new machine in either case, but I do claim I have machines that will take the place of new machinery until I am able to pay for that new machinery. I own these machines myself and I couldn't possibly own the same machinery if new. In looking over a host of so-called "junk" of standard make, I find that much of it could be made into serviceable machinery if the owners would repair it in some vital part.

After all, there are but few places a machine actually wears out, but many farmers apparently like to wear the shine off and buy a new one.

As a last word, I believe in buying new machinery, but only when the buyer can pay for it.

Ten per cent interest is more than most of our farming operations net us, so paying that rate for machinery that soon gets old is a mistake.

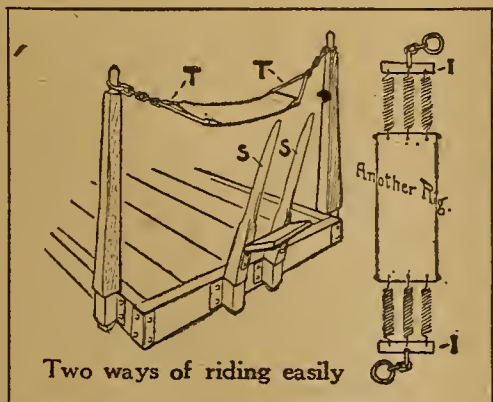
EDITORIAL NOTE—Finding out the facts as to a machine is a valuable faculty, and Mr. Bolles is evidently a good judge of old machinery. This is a faculty worth developing. We want to caution our readers, however, against second-hand dealers that ask nearly as much for used articles as for new ones.

To rejuvenate junk successfully also calls for considerable mechanical ability. But if the machinery is of standard make for which repair parts can be had at reasonable cost, a nice piece of money can often be saved by following Mr. Bolles' suggestion.

Luxury on a Wagon

By G. B. Hill

THE draymen in and around Boston use a kind of seat that does not seem to be in vogue anywhere else, though it could be put on any wagon body with places for side stakes. It is the easiest rig imaginable for bumpy cobble pave-



Two ways of riding easily

ments, and should do as well where country roads are rough. Also it permits loading to the very front of the wagon, and where the load is so high the driver must sit on top this seat can be put out of the way with less trouble than a wooden one.

The seat itself is a piece of heavy leather or belting, 10 inches wide and 36 inches long, each end turned over and sewed around one side of a triangle made of round iron rod. To the outer corner of these triangles (TT) are fastened short chains with rings at the ends which fit over the tops of the two front stakes of the wagon. The whole arrangement hangs like a hammock, and looks hard to balance on, but isn't. The seat gets spring from the "give" of the stakes, which must be extra strong. Two stakes (SS) set at the front of the wagon support the foot rest and give handholds in getting down.

If you want more luxury try the rig at right of sketch. Each end of the seat is reinforced by sewing it around a rod, and to this are fastened heavy spiral springs, three on a side, the outer ends of which are hitched to pieces of strap iron (II). If you have a dismantled binder you may find springs on it that will answer.

This is a one-man seat, though by laying a board on it, it can be made to do for two.

Your Line Fence

WE USUALLY think of our line fences as the most important ones, partly because we want to treat our neighbors squarely and partly because we want them to be fair with us.

Line fences are important. But why should we not consider all fences as money makers or money losers? When we do we shall see the importance of any fence.

Any fence is important.

Therefore look out for the article in the next issue which is called, "Fences That Laugh at Father Time." It tells about the materials which can be used to make our fences last long and cost little.

New Books

PRINCIPLES AND PRACTICE OF JUDGING LIVE STOCK, by C. W. Gay, is devoted chiefly to the description and classification of cattle, horses, mules, sheep, and swine. The appendix contains racing and show records. It is a good book for a person desiring to become a judge of live stock. Illustrated, 406 pages, cloth bound. The Macmillan Company, New York City. \$1.50 net.

Weeds and farmers are sworn enemies. But sometimes we fail to distinguish between plant helpers and hindrances. **MANUAL OF WEEDS**, 590 pages, profusely illustrated, by Ada Georgia, makes one interested in and acquainted with weed friends and foes. Macmillan Company, New York City. \$2.

Warm Water Increases Hog Profits



and reduces your feed cost 25 per cent by enabling the hog to get full benefit of his feed. Hogs require lots of water to do best. Water is cheap. Encourage them to drink often by keeping before them a constant supply of pure, clean water with the chill off in cold weather. You can easily do it at little cost and save time, work and worry by using the

IDEAL Hog Waterer Cannot Freeze

Keeps water warm night and day in coldest weather. An all-the-year-around Waterer. Absolutely sanitary as hogs cannot get into the trough or foul the water. Simple, Durable, Inexpensive to operate, Automatic Feed. Will save its cost in a short time. Guaranteed to be a money maker for you. If your dealer doesn't have the Ideal Waterer write us for prices.

Get **FREE** Trial offer. Our **FREE** Write today.

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Do You Have to be Shown?

I'm told that I have the best quality of seed, give the largest packages and, have the most common-sense Seed Book in the bunch! And I'm willing to admit it. Do you have to be shown? All right, I live close to the Missouri line and I'll "show" you. I'll send you the Seed Book and a big package of garden seed, and you can judge for yourself. NO CHARGE FOR EITHER, and you need not even send the postage unless you wish. I also have guaranteed Clover and Alfalfa, and all kinds of farm seed at Farmer's Prices. Shall I send you free samples of these also?
HENRY FIELD, Pres.
HENRY FIELD SEED CO., Box 80, Shennandoah, Iowa.

MAKE YOUR BIKE A MOTORCYCLE

at a small cost by using our Attachable outfit. FITS ANY BICYCLE. Easily attached. No special tools required. Write today for bargain list and free book describing the SHAW Bicycle Motor Attachment. Motorcycles, all makes, new and second-hand, \$35 and up.
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FREE BIG CATALOG OF LIVE SEEDS and Plants and Pkt. Giant Pansy Sent FREE. Best New Seeds sure to grow, at low prices. Gardeners ask for Wholesale List.
ALNEER BROS.
No. 21A, Bilk, Rockford, Ill.

Hill's Evergreens Grow Best for windbreaks and hedges. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown. Get Hill's free illustrated evergreen book and list of 50 Great Bargain Offers—from \$4.50 up per Thousand. 56 years' experience. World's largest growers. Write D. HILL NURSERY CO., Evergreen Specialists, 2382 Cedar St., Dundee, Ill.

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BOOK ON Dog Diseases AND HOW TO FEED Mailed free to any address by the Author
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Currie's Tested SEEDS Have been giving satisfaction for nearly 40 years. All are tested for vitality and purity before being sold. Try This Collection One packet each Beet, Detroit Dark Red; Carrot, Milwaukee Market; Lettuce, Yellow Seed Butter; Onion, Currie's Pritzaker; Radish, 20 Day. All best quality. 10c Mailed postpaid for only. New Catalog Free Describes the best reliable sorts of vegetable, flower and field seeds, bulbs, plants, etc. Fully illustrated. Tells how to grow big crops. Write for copy today.
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Also 12 Varieties Cholee Flower Seeds 25c
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Write today! Send 10 cents to help pay postage and packing and receive the above "Famous Collection," together with our New and Instructive Garden Guide.
GREAT NORTHERN SEED CO.
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6 BEST VARIETIES FLOWER SEEDS FREE AND \$50.00 IN PRIZES FOR NAMING THEM
All well known varieties, easy to grow. For the best letter describing and naming these varieties correctly, we offer \$15.00 in cash,—the next best \$10.00,—the third best \$5.00,—the next ten best \$1.00 each and the next twenty best letters a 50c due bill each. Write today for free seeds and New Illustrated Catalog, giving full particulars.
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GOOD SEEDS BEST IN THE WORLD Prices Below All Others I will give a lot of new sorts extra with every order I fill. Buy and test. Return if not O.K.—money refunded. **Big Catalog FREE** Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses.
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Monarch Steel Stump Puller Sold On 5 Year Guarantee. Live Sugar! Made of steel. Has all modern improvements. Triple and Double Power. Clears 1 to 6 acres per day including stumps up to 7 ft. in diameter. It will pay you to get our catalog and guarantee.
FREE CATALOG TELLS all about this wonderful machine, why it is best, why it is cheapest, why it will give service and satisfaction and last longest.
Zimmerman Steel Co.
Dept. FF, Lone Tree, Iowa



Billion \$ Grass

Introduced from Japan. Wonderfully prolific. Great for silos or hay—does well everywhere.

Sudan Grass Most wonderful grass of the century. Enormously, prodigally, prolific. Texas growers claim 10 tons rich hay per acre. Ripens as far north as Canada. If above two grasses are sown this year on each farm in America, it would positively put an end to hay scarcity on every American farm.

Teosinte A magnificent fodder plant. Splendidly adapted for silo purposes, producing from 30 to 100 rich, succulent stems from a kernel of seed.

Speltz A great food, both as a cereal and as a hay plant. It is in tremendous demand. So are Salzer's Pedigree Barleys, Corns, Oats, Wheat, Alfalfa, Speltz, etc.

Potatoes Read the rich romance of Henry Schroeder, the Potato King of the Red River Valley, in our Catalogue.

Ten Famous Farm Seed Samples, 10c. For 10c we gladly mail one package each of 10 Famous Farm Seeds, together with our big Farm Seed Catalogue. Catalogue free—write today.

JOHN A. SALZER SEED CO., Box 119, La Crosse, Wis.

SUPERIOR GRAIN DRILLS

"The Name tells a True Story."
"Drills the Grain to grow again."

"The Superior Feed sows every seed."
Superior Drills are at home in any field on earth.

Wherever you live or whatever your seeding conditions, you can get a Superior Drill that will fill the bill. No matter what style drill you want—plain or fertilizer—Disc or Hoe—you will find it in the Superior Line. Absolutely guaranteed. Send for Superior Catalogue. Look it over and then tell your dealer you want to see the Superior.

THE AMERICAN SEEDING MACHINE CO. INCORPORATED
SPRINGFIELD, OHIO, U. S. A.

Planet Jr. Wheel Hoe Cultivators

do the work of three to six men—do it better, give bigger results, and last a lifetime. Fully guaranteed.

No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake and Plow

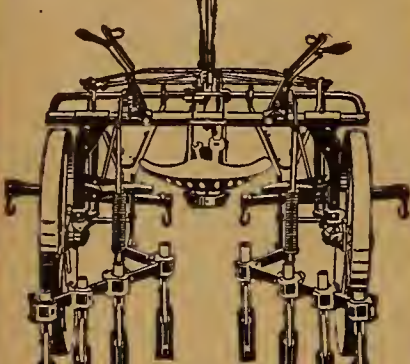


The highest type of Single Wheel Hoe made. Light, but strong, and can be used by man, woman or boy. Indestructible steel frame.

No. 9 Planet Jr Horse Hoe and Cultivator



Stronger, better made, and capable of a greater variety of work than any other cultivator made. Non-clogging steel wheel.



No. 76 Planet Jr Pivot-wheel Riding Cultivator

Gives bigger better results than any other one-row cultivator ever invented. Strongly constructed; easily handled. No wood used except for break pins.

72-page Catalog (168 illustrations) free

Describes in detail over 55 tools, including Seeders, Wheel Hoes, Horse Hoes, Harrows, Orchard- and Beet-Cultivators. Send postal for it now.

S L ALLEN & CO BOX 1107F PHILADELPHIA PA



Crops and Soils

Where Water Cress Grows

By E. I. Farrington

WHERE conditions are right, water cress may easily be grown and is a fairly profitable crop. It is more of a commercial product in Europe than in this country, and much water cress sold here comes from plants that grow wild. The common variety is really a native of Europe, and yet it is now found all over this continent.

Water cress likes shallow, slow-moving water and a sandy bottom, and yet will often thrive when these conditions are only approximated. Commercial growers usually prepare wide ditches or beds over which water may be flooded, but with the water under control by means of dams. The seeds may be started in the beds when they are not flooded, or sown on the banking at the edge of the beds and allowed to grow over them. New plants are often started from cuttings which will take root wherever they are dropped, the roots starting out from the joints. If there is danger of their being washed away the cuttings may be held in place by stones.

It is important that water cress be grown only where the water is pure, for the cress may easily be contaminated by sewage. If grown where the bottom of the stream is muddy the flavor of the leaves is greatly impaired. Also avoid locations where there is danger of a heavy rush of water.

There are two pests which damage water cress, and both are described in a bulletin issued by the U. S. D. A. One is called the sow bug, and the other is known as the water-cress leaf beetle. The sow bug is combated by drawing off the water. The pests follow it and are collected in a pool where a preparation is applied which kills them by wholesale. The beetle is disposed of by just the opposite method. The beds are flooded and the beetles washed away.

It is a simple matter to propagate water cress in brooks or shallow water on a small scale, and a few plants will provide enough for home use. Seed may be sown at any time in spring or summer, but if sown in the fall it will often remain without germinating until spring, when it will start into life. The pleasant, pungent, slightly bitter flavor of the water cress makes it highly desirable for a salad, and the attractive leaves recommend it for a garnish. In Europe this cress is often boiled and served as a vegetable.

Sweet Clover or Alfalfa?

WHICH would you rather have as a means of soil improvement—twenty-five tons of average quality stable manure applied to an acre, or a season's production from an acre of sweet clover or alfalfa plowed under as a green manure fertilizer?

A Wisconsin experiment in growing sweet clover produced 6.4 tons of dry matter from an acre of that crop, including growth of roots as well as the plants above ground. This crop of sweet clover (top and roots) contained 228 pounds of nitrogen, or as much as is contained in 25 tons of good quality stable manure.

This 228 pounds of nitrogen contained in the acre crop of sweet clover valued at 15 cents a pound would be worth \$34.20, or \$5.30 for each ton of dry matter produced by the sweet-clover crop.

An Illinois experiment produced 8.5 tons of dry matter (roots and top growth) from an acre of alfalfa. This growth contained 252 pounds of nitrogen, which reckoned at a value of 15 cents a pound would be worth \$37.80, or \$4.40 for each ton of dry matter produced by the alfalfa crop. And both these legumes will normally secure two thirds of their nitrogen from the air.

Expressed differently, the season's crop of alfalfa in Illinois contained \$3.60 more value in the total nitrogen contained, but each ton of dry matter of the sweet-clover crop grown in Wisconsin carried a value 90 cents greater per ton.

Of course, in green manuring

some use of the land is lost unless the green manure crop is grown during the fall and spring as a cover crop.

The stable manure has the advantage over the green manure in its other elements of fertility added to the soil. On the other hand, under ordinary farm conditions 25 tons of stable manure applied at one time per acre would be a big surprise to the land.

In considering this soil-improvement problem by use of green manures it must not be forgotten that sweet clover will "catch," grow, and flourish on barren, washed, and abused land on which alfalfa will utterly refuse to grow. Here is where the sweet clover has its innings as a renovator, preparing land for the possible production of other legumes and crops less able to withstand hardship.

EVEN if the sod-mulch system is followed in the orchard, it is well to make a little clear space close about the foot of the tree. Mulch, and even cover crop, furnishes a fine covert for mice and shrews.

Tennessee's Best Wheats

By C. A. Mooers

This is one of a number of expressions from various parts of the country on the question, "What is Your Best Wheat?" Other States will be represented by accounts yet to be printed

THE Tennessee Experiment Station has made very thorough trials of a great many varieties of wheat during the past fifteen years. While the status of every variety that could be mentioned is not settled, we have found that for average upland soils nothing among the



This is Poole. It is a close second in the quality of the grain

smooth-headed wheats is better than the Poole. Currell's Prolific and Fultz have also done well. Of the bearded sorts, Fulcaster has proven unsurpassed. The Miracle wheat widely heralded from Virginia is nothing more or less than Fulcaster.

For rich land, when the varieties mentioned are apt to lodge, we recommend Fultz-Mediterranean as unequaled by any variety tried by us. It has been grown for a number of years in some of the rich Central Basin counties of Tennessee under the name of Economist. This variety has a short compact head, and the straw is appreciably shorter and stronger than that of either Poole or Fulcaster.

As to quality of grain I would give first place to the large-grained Fulcaster, second place to Poole, and third to Fultz-Mediterranean; but all are good.



Sweet clover—it's a crop that will fight, and win

Headwork Shop



Swing When "So Boss" Kicks

MY BEST milk stool is a swing. I took three strands of No. 9 smooth wire and stretched them in the cow stable about 2½ feet over the cow's hips, the whole length of the stable. I anchored them well to a beam at each end and twisted the wires into a tight cable by means of an iron rod.

I put a large harness snap on the cable and suspended a swing with two small ropes so that the seat was the right distance from the floor. My milking stool is always clean and out of the way. I can walk from one cow to another, and the snap slides down the cable until I am ready to sit down to milk again. This swing makes it much easier for the milker to dodge the kick of an unruly cow, as he can easily push himself back without rising from the stooping position.

L. E. DuBois.

This Cat Catches Moths

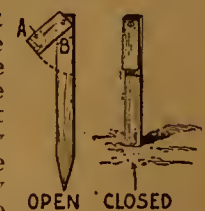
WE HAD something happen last summer that we thought peculiar. One of our cats began staying close to the verberna beds in the evenings. Soon we saw he was catching hawk moths. He did the work so well that although we had 140 tomato plants we had scarcely any worms. Generally it is quite a task to keep them off the vines.

We intended to kill that cat as we have two others and like them better, but his life is safe now.

MRS. S. C. DAVIS.

Peekaboo Garden Marker

A GARDEN MARKER that allows the name to become illegible is worthless. The one illustrated will protect the writing for many months, and can be looked at any time by simply pushing aside the little piece (A). It is easily made.



First secure a lath, or similar piece of wood, 16 inches long. Dress one side smooth, and then cut off a piece 4 inches long. Fasten together by a nail or screw (a screw is better, as you can regulate the tightness more easily). The small piece (A) should not turn too easily. Push it aside and write at B the name and date of seed planted; then turn A back so it covers the writing. Push the marker into the ground and you are through.

CLARENCE SCHWANEBECK.

Bind Loads With Wire Stretcher

MY TACKLE-BLOCK wire stretcher is the handiest tool on the ranch for raising weights or roping loads. It is particularly useful in roping a load of loose or baled hay. Fasten a short rope to back and front standards, and after the load is topped off fasten the wire stretcher first to one rope and then to the other. Give the stretcher a pull and the load is secure, for the stretcher is self-locking.

This is done without getting off the load or wrestling with a pole in the old way. If at any time the rope becomes a little slack the driver can tighten it without stopping or moving from his seat by simply giving the stretcher rope a pull.

To rope a load of posts, poles, boxes, or freight of any sort it is useful because it is no burden to carry, and it does the work well.

For a windlass with which to hang hogs at butchering time it has no equal. One man can change a wagon bed or hay rack by lifting one end at a time. These stretchers ordinarily cost 75 cents or \$1.

L. E. DuBois.

Try Fish for Rat Bait

WHEN the rats have become acquainted with all the traps and deadfalls you can think up for them, nail a small salt fish on the wall about a foot above a tub half full of water. Put two quarts of dry oats on the water and your trap is ready. The rats will go for the fish first, and when they want to come down they will jump into the oats, and you have them. This method has given splendid results.

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The Farmers' Lobby

Less "Bossing Around" in Washington Than Formerly

By Judson C. Welliver

THERE are more people in Washington, nowadays, who work their brains, and fewer who overwork their stomachs, than at any time in its history.

In proportion to the total population, I mean.

Washington plays less poker, gives fewer big dinners, goes to bed earlier, gets up more seasonably of the morning, takes fewer "little drinks," smokes cheaper cigars, does more work, regards its job more seriously, and in spirit and essence comes nearer to representing the real thought and purposes of the country.

Not because the country has gone Democratic, though. The change that has come over Washington isn't political. It's deeper than politics. It began and got a good start before the country went Democratic. It will continue even though the country goes Republican again.

You can come to Washington, put up at a first-class hotel, wear a tall hat and a tail coat, and be almost immune from the attentions of that interesting class of Washington gentry that a few years ago would have been promptly on deck to "show you around."

Assuming you wanted to "fix a little matter," they would have swarmed about to nose out what it was, and to assure you that they "controlled" enough House leaders, and knew "how to reach" enough Senators, to handle your little matter.

Shirt-Sleeve Lobbyists

The lobby has changed. It does its business chiefly in shirt sleeves nowadays. The lobby now baldly announces that it's a lobby, tells what it wants done and why, appears before the appropriate committees, and when it has stated its case leaves town again.

Perhaps it will be interesting, by the way, to know that there is no city of Washington.

You can buy a railroad ticket to it, and get put off at the right place; you can send mail to it and get it delivered; but you can't buy property in Washington.

You can fall on the ice, break a leg in Washington, but you can't sue Washington. The only law which knows such a place is that affecting the post-office appropriations.

The city of Washington has no revenues, owes no debts, and does not appear on a map of the District of Columbia. There are no laws governing such a place. It has been specifically abolished by law since 1878.

There was once a city of Washington, in the District of Columbia. Also a city of Georgetown, District of Columbia. Georgetown indeed was an ancient city before the District of Columbia was created. Washington and Georgetown for many years had municipal governments, mayors, councils, ordinances, debts, and politics. Outside the limits of both cities was a considerable unplatted area within the District, known as the county. It was governed by the "levee court," a sort of county board.

There's No Official Washington

But about a generation ago Congress abolished the then territorial government of the District, and set up the new municipal corporation of the District of Columbia. Georgetown, Washington, and the county were all taken into this jurisdiction, and a board of commissioners was provided to administer the laws which Congress should make for it.

Down to this time, deeds to property in Washington described it as "lot one, block one, city of Washington, District of Columbia;" or as "lot one, block one, city of Georgetown, District of Columbia." But, as if to make perfectly certain that there should not be left a shred of claim to a legal existence of the old cities, Congress then provided for a complete renumbering of the city blocks. The blocks in Washington were designated as "block one, District of Columbia," and so on up to 1,170, that being the number of blocks in the old city of Washington. Then came the old Georgetown area; and block one, Georgetown, was renumbered as block 1,171, District of Columbia; and so on up. The city has now expanded all over the District and slopped over outside, and there is absolutely no legal entity in it to be called by the name of Washington.

Congress never refers to Washington in passing laws for the capital; there is no official Washington; and but for the post-office and the national superstition about the seat of government being named after the Father of His Country the name would disappear.

This change has come gradually. Most people who live here don't know that it has happened. Washington knows something has happened to it, and it wonders; but it doesn't understand.

Especially official Washington doesn't understand. The local community has a better perception of what has been going on than has Congress or the official community.

Official Washington changes so fast and so much that before it has fairly "found itself" under one régime it is plunged into a new order; the new crowd of people doesn't know just how things were under

the former régime, and so the people who make the atmosphere and give the color to the place don't realize that they are producing different effects and putting on changed hues.

John Quincy Adams was one of the great Americans of the first generation of the Republic: diplomat, statesman, patriot, President, and, after he had been President, for many years a most efficient member of the House of Representatives.

But the best thing he did for his country was writing a diary in which, night by night, he set down in vast detail the happenings of the day—personal touches, the play of politics, intimate bits that indicate inner motives of men and parties.

Henry Clay, Card Player

This Adams diary tells us so much about the card-playing, race-going, convivial and bibulous habits of the Washington of his day, that we are able to realize that the town from its beginnings was a right lively place. When Henry Clay was speaker of the House he lost so much money at cards that he had to retire

way in that room, and last thirty hours. A man would sit in, play a while, and being called to the floor to look after something requiring his attention would cash in and give his place to somebody else, returning when his business was attended to. The crowd around the table might change several times during such a long session, but the game stayed right there."

There's no use going into details about those "good old days" of the convivial and money-spending official Washington. The name of the committee and the name of its hospitable chairman would do nobody any good. There were plenty of others substantially like it.

For my present purposes the point is to be made that that sort of thing is getting out of fashion. Things are vastly different. And one chief reason, as the old-timers analyze it, is that there are no "leaders" as there used to be.

Which really means bosses.

Committee chairmen used to be almost autocrats in the business of their respective committees. A small number of Senators who had been longest in service held the powerful chairmanships and occupied places on the most important committees. Thus they could run the machine, and they did it.

At that same period a speaker of the House referred in a speech to the group of men whom he had appointed chairmen of the house committees, as "My cabinet!"

In both houses that kind of rule has come to an end.

The lower house has changed its rules so that the speaker no longer appoints the committees. But the Senate has made no such sweeping change in its rules, yet it too has abandoned the oligarchic and set up a comparatively democratic dominion.

It isn't a matter of rules and traditions so much as of spirit. The leadership of the old-style leaders has been elbowed out of the way because the rank and file of members in both houses have more and more asserted themselves in recent times. There was insurgency against an attitude of mind as much as against a system; against the notion that a few men could do all the managing and all the thinking for the rest.

That \$25,000,000 Indemnity

More men are honestly studying issues, problems, economics, experience, I am very sure, than ever before; and more of them reach their conclusions by reason of their studies, fewer by reason of partisan or leadership dictation, than ever before. And this changed attitude has affected the members of one political party quite as much as those of another.

Far from having suffered by reason of this new serious-mindedness in the legislators, partisanship is doing very well, thank you. Everybody talks now about the 1916 outlook.

Republicans are hopeful, and a good many possible candidates are discussed.

It is very apparent, and nobody recognizes it more frankly than Democrats, that President Wilson is not ruling his party membership in Congress so effectively as he did earlier in his administration. There has been rank insurgency in the Senate against some of his political appointments. That body passed the Immigration Bill by a majority of 50 to 7, despite that it was known the President had threatened to veto it if it passed with the literacy test in it. It

also passed the House, last session, by almost a two-thirds vote, despite that the President was very well known to be opposed to this feature of it.

There have been many other evidences of growing hostility to the President inside his party. But thus far it is what might be called tentative hostility. The party will nominate him again if he asks the nomination; they all admit that; but there are a good many people in the party who would be glad to convince him that there is no overwhelming and vociferous call that he serve the party once more as a candidate. Then there is the fact that the Baltimore platform declared against a second term. The President has never said he intended to take that pledge seriously.

Nobody could listen to the reports which returning public men brought back from the country at the opening of the new session of Congress and doubt that the old Republican party is fast getting together again. The reasons for it are not within my theme; the fact of it I observe every day, and the fact gives increasing cheer to Republicans, as it gives new concern to Democrats. This is a chief reason why the President is very insistent on getting his complete legislative program through Congress at the present short session. There are some conservation measures, the bill for government purchase of merchant ships, the measure to pledge the Government to free the Philippines, and the treaties with Nicaragua and Colombia. This latter is the measure that proposes to pay Colombia \$25,000,000 as indemnity for the taking of the Canal Zone under the Roosevelt administration. Colonel Roosevelt has indicated that he is going to be mighty offensive if that legislation is pressed; and the President is determined that it shall be pressed, and if possible passed. At this time it seems doubtful whether all the pressure of the administration can possibly pass it.



Old times in the Congress. "My, dem was happy days!"

from public life for a time to earn money at law to recoup his fortunes. When he and John Quincy Adams were colleagues at Ghent in the diplomatic mission that made the peace ending the War of 1812, Mr. Adams wrote in his diary repeatedly, complaining that Mr. Clay and his cronies were wont to play cards and drink all night, while he would be sleeping; and he noted that when he would be rising in the morning he would hear them, in the adjoining room of the hotel, just breaking up their festive party and going to bed. That was in 1812.

Poker in the U. S. Capitol


A veteran Senator the other day said to me: "When I first knew the Senate, the suite of rooms assigned to each important committee was a sort of club headquarters for the members of that committee. The committee was a social organization. There were some exceptions of course. But I recall particularly one big committee, on which memberships were always in demand because of its social features. Its chairman was one of the richest men in a Senate in which every third man, I presume, was a millionaire—you may have noticed that there are mighty few rich men in the Senate nowadays."

"The chairman of this committee had a magnificent Washington house and constantly entertained. In addition, his committee room was famed for the magnificent variety and quality of liquors that he always provided. The colored messenger was an expert mixer, and the inside room, sacred to members, was the resort for lunches, for drinks, and for poker parties.

Being only a few steps away from the Senate chamber, members came and went all the time. "I've seen a poker game start in a rather casual

The Best Hog-Health Insurance

Continued from Page 11



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the state serum is furnished free of charge, except for expressage. Iowa and Nebraska have laws requiring state serum to be sold at cost. The managers of several private concerns complained of state competition because the state plants were underselling them. If any state serum plant is making money I think you will find the profit only reasonable, and also that any surplus is used for useful experimental work.

Undoubtedly the real reason for the apparent success of many hog remedies in the field and their failure under test conditions is due to the diagnosis. Worms and garbage-poisoning are very often confused with cholera. Garbage-poisoning is due to soaps, lye, and washing powders in kitchen refuse, and sometimes to spoiled food. The intestine of a hog that has died of garbage-poisoning is inflamed much the same as if the hog had died of cholera. This brings up the very important matter of careful feeding and putting a hog in such a condition that he can best resist all kinds of disease.

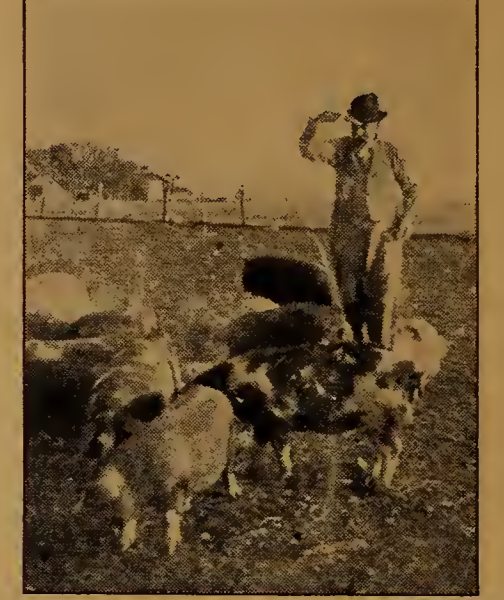
On this subject the experiences of Judge W. R. Schooler of Carthage, Missouri, are of unusual interest. He has been through the ups and downs of the hog business. Twenty years ago the cholera struck him hard, taking 200 hogs. He cleaned up and thoroughly disinfected the premises. Then he evolved a method which may save the readers of this page a good many hogs. As is customary with most other successful feeders, his hogs follow cattle. Flax and corn are his principal feeds.

He raises 120 acres of flax himself, and buys more from neighbors. He feeds it to his cattle unthreshed. That is, he simply cuts the bundles and mixes the flax stems well so the cattle will eat it all and not simply chew the bolls (the

heads containing the seeds) off and leave the rest.

However, the cattle always drop some which the hogs get. In finishing the hogs for market he has also made a practice of feeding ground flax at the rate of 100 pounds a day to each 300 hogs, also some wheat. Yes, flaxseed is expensive, costing around \$1.50 a bushel, but according to computations based on gains in weight he finds a bushel of it equivalent to about 2 1/2 bushels of corn, besides having the additional quality of increasing constitutional vigor.

The oil in the flax keeps the digestive system of the hog in excellent condition.



Judge Schooler and some of his "hog brutes." The haziness of the picture is due to the lime he is sprinkling on the hogs

Incidentally he has lost only two steers (a most unusual record) since he has fed flax as described. The flaxseed that he buys he grinds himself in his own mill, the same one used for wheat and corn. This is for the sake of economy and also to be sure of its purity. One year he ground 2,000 bushels of flaxseed.

Mr. Schooler's method of raising hogs is also noteworthy. He keeps no old brood sows, but raises all his pigs from gilts that run on pasture and have no enclosed shelter. He neither expects nor desires large litters. Two or three pigs from each sow is about right. In that way the young sows neither run down nor develop large milk glands. When the pigs are weaned the sows go into the feed lot, where they fatten readily and go on the market in as good condition, almost, as the barrows. The pigs also are bright and strong. In fact, the system reminds one of raising sheep and goats.

He Doesn't Claim Them to be Immune

Mr. Schooler also buys hogs from his neighbors, or anywhere else that he can get the kind he wants. Such hogs go into a quarantine pen for three weeks. Then if they show no signs of disease he turns them in with his other hogs.

"Build up their constitutional vigor" and "Don't keep hogs in a parlor" are his two slogans. If he suspects lice or notes any unthriftiness, he dusts his hogs with hydrated lime, sprinkling it on them from a shingle held high over their backs. The hogs sneeze a little and shake themselves, thus throwing the lime into the air again and helping to distribute it over other hogs. It kills external parasites which so often make heavy drains on the hogs' vitality. A 200-pound sack of lime, costing \$1.50, lasts an entire winter, and the expense of this treatment is less than a cent per hog.

His "hog brutes," as he calls them, are not given the usual privilege of wallowing in straw stacks or similar places where they can become heated and later take cold when exposed to the air. Neither are they given green corn soon after feeding on pasture. Every effort is made to keep them healthy and comfortable; that's all. The feeding sheds are not enclosed, but they have good roofs to keep the ground under them dry.

"I would rather walk around a hog or steer than make him get up," said Mr. Schooler. "Every time a hog brute is disturbed he loses a little flesh and is worried a little. I try to keep my stock perfectly contented. I aim to keep them on an even appetite, and have the hog brutes just hungry enough to squeal a little when they see me coming."

At the time of my visit the hogs, and steers too, were in excellent condition. All this may seem a pretty long prelude to the cholera part of the story, but you can see with what pains he feeds and cares for his stock so as to keep them healthy and thriving. Mr. Schooler understands the advantages of vaccina-

tion against cholera, but doesn't vaccinate any of his hogs, so great is his faith in their ability to resist cholera, and other diseases as well. However, he makes no claim of immunity for them, and admits that if a virulent cholera epidemic struck his farm he would probably lose some hogs and would promptly market the rest. "They would die so slowly I wouldn't lose many of them," he said.

The System Seems to Work—

But for actual results. He lost 200 head twenty years ago, and that was before he used the system of breeding and feeding I have described. Since then the cholera has been in his neighborhood many times. Two years ago his neighbor just across the road suffered heavy cholera losses, and allowed 15 dead hogs to lie on the ground for a month till the crows had picked them to pieces. Besides that there was direct infection from his neighbor's hogs that broke through the fence. But Mr. Schooler's hogs failed to contract the disease. He has successfully marketed about 4,000 hogs without any cholera losses during the last twenty years. Yet on an average, one Missouri hog in six has died of the disease in late years. I have known Mr. Schooler and his farm for eight years, and his word is as good as his bond, in fact better than some bonds. Veterinarians with whom I have discussed the question of constitutional resistance to cholera admit the oil in flax to have a healing action on any intestinal irritation.

A similar though not as successful a case is that of J. S. Arbutnot, formerly of Cuha, Kansas, now of Oklahoma. Mr. Arbutnot likewise had a system of his own when he lived in Kansas, and raised between 1,200 and 2,000 hogs every year. He had the reputation of being the largest hog raiser in Kansas, and his methods have been written up many times in the Western farm papers. Early in his experience, according to two excellent authorities, he discarded the slop bucket and fed only the purest natural feeds on a concrete feeding floor. He gave his hogs pure water and kept everything in spick-and-span order. The cholera was rampant around him, but he didn't vaccinate, so great was his confidence in the resistance of his hogs. He is said to have laughed at the state authorities, and made sport of vaccination and of those who used it. This went on eight years and his hogs stayed healthy.

—But Sometimes the Unexpected Happens

Then the cholera struck him, and before he could realize that his system had failed and that his hogs actually had the cholera, he lost 600 of them. Then he became a convert to vaccination. The point is this: Constitutional vigor is a great help but is not absolute insurance against cholera. Vaccination is insurance against cholera but does not protect against other diseases. If you keep your hogs in perfect condition and also vaccinate them with the double treatment, you have an irresistible combination.

You can go to bed at night knowing your hogs will all be squealing for their breakfast in the morning. You can count on spending your time profitably the next day, instead of hunting up a veterinarian or burning dead hogs. In other words, you have the ideal system for marketing all the porkers you start out to raise.

"You never can tell," says Dad Millslagle, "whether a county is dry or not without looking at the weather reports and the records of the cider mills and the patent medicine dealers."

A hog is property in Nebraska, and his owner is personally responsible for any damage he may do. What good reason is there why this should not be the rule everywhere? In Nebraska a dog which runs out upon the road may be shot by people annoyed by his barking. The useful, well-behaved dog will not be affected by such laws, and wise dog owners will agitate for such laws everywhere.

THERE is a trick to the job of burning the carcasses of dead hogs: and where they have died of cholera the trick should be learned. Dig two trenches crossing each other. Make them several inches deep. Pile the fuel at the crossing of the trenches. Lay a large iron wheel or strips of metal to hold up the carcass. Open the carcass completely, spread it open, and lay it belly down on the support over the fuel. Sprinkle kerosene liberally inside the hog before putting it in place. Light the fuel. The carcass will burn fiercely, especially if the hog was fat. The trenches and the metal supports are for draft, and the dimensions of these things depend on the size of the carcass. This system is recommended by the Nebraska Station.

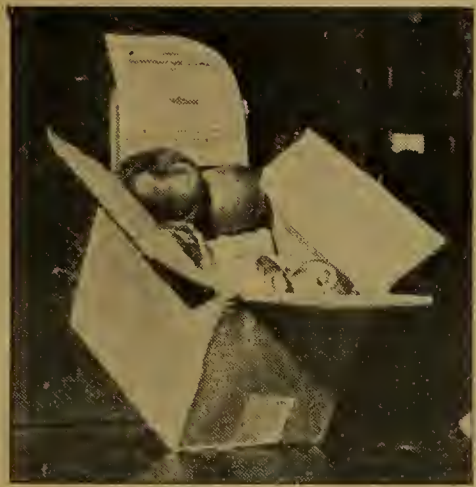


Garden and Orchard

Apples in Cartons to Consumers

THE half-peck cartons of apples here pictured were shipped by parcel post from the Ohio Experiment Station, Wooster, Ohio, to the FARM AND FIRESIDE office, Springfield, Ohio.

The apples were wrapped in tissue paper similar to that used for wrapping



Jonathans and Delicious made the trip in fine shape—

oranges. The cartons are made of the regular corrugated paper, which cost in this half-peck size 3½ cents each by the thousand.

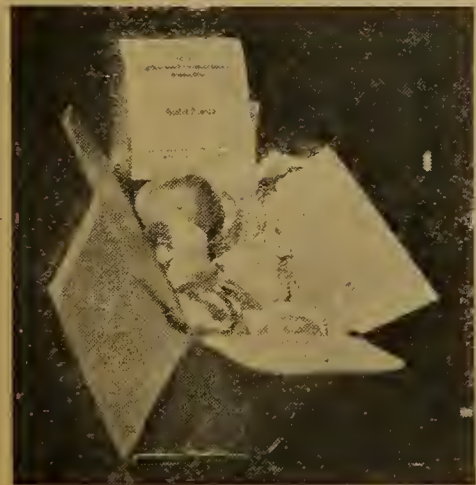
When shipped in this way by parcel post in the first and second zones, these cartons of choice apples, if sold for 25 cents each, will realize the producer from 85 to 90 cents per bushel for his apples, after cost of cartons and postage is deducted. Postage was 10 or 11 cents per carton on these shipments.

These cartons each hold from 15 to 19 apples. A few of the ripest were slightly bruised in transit, but nearly all were in excellent condition and advertised their good qualities by their enticing odor before the cartons were opened.

The consumer in this way can obtain fancy dessert apples for a cent and a half apiece, or at one half the cost of similar apples purchased from fruit stands.

The horticulturist, Mr. W. J. Green, to whom FARM AND FIRESIDE is indebted for this demonstration shipment, advises us that special attention was given to pruning, spraying, and thinning. All defective apples and those under 2½ inches in diameter were rejected when packing for shipment.

This shipment demonstrates that apples when marketed in corrugated paper cartons should be marketed before becoming "mellow."



So did the Winter Bananas

Even Maples Need Care

By Clarence M. Weed

IN THE multitude of duties on a farm large enough to boast of a sugar orchard, it is very easy to overlook the necessity of giving it the little care necessary to keep it in good condition. This is particularly true in Northern regions where spruce and other trees grow so rapidly in the shade of sugar maples that almost before one knows it they are robbing the latter of food and sunshine.

The sugar in the sap of the maple tree depends on the free activity of root and leaf the previous season.

If the roots are free to send up abundant sap materials from a soil kept rich

by the decay of falling leaves, and the leaves are free to expose the sap to abundant sunshine, the work of storing sugar material goes merrily on in these great natural laboratories on our hillsides.

But if the maple roots are fighting for space with the roots of birch and spruce, and the maple leaves are robbed of direct sunlight by the leaves of birch and spruce, then the work of the laboratories is checked and the supply of sap as well as of sugar in the sap will be reduced the following spring.

There are few parts of the farm that are more valuable to the attention required than the sugar orchard, and the prospects are that their values will increase rapidly in the future. The demand for hard-wood lumber and the spread of the gypsy and brown-tailed moths are causing the destruction of many of the older sugar orchards, and very few are coming on to take their places. So it seems certain that as time goes on the price of maple products will increase with the decreasing supply.

Some ten years ago I bought a hill farm in northern New England on which there was an old orchard of sugar maples and nearly a thousand young trees coming on. The old sap house with its brick arches had nearly fallen to pieces, and the old pans and wooden sap buckets were about done for. I started to clean up the undergrowth and build a new sap house. In the house I built a new arch for a large evaporator and a smaller one for a boiling pan. On the larger arch I placed an inexpensive evaporator of the type used in the West for making sorghum syrup, which cost a great deal less than the kinds offered in New England for making maple syrup. I discarded the wooden buckets and replaced them with galvanized pails which I bought from a neighbor for 10 cents each.

The yield of syrup and sugar has given a very satisfactory return for the investment, and the orchard has increased in value from year to year. Last summer the growth of spruces and birches had reached a point where they had to be cut out, and four days' work last fall so cleaned up the undergrowth that little more attention will be needed for years.

In cold weather when there is little snow on the ground is a good time to cut the spruces. They are then so brittle that a blow from an ax will cut off a good-sized tree close to the ground.



Live Stock and Dairy

Be Careful With Caustic

HORNS were useful to cattle when they had to fight for their existence, but domestic cattle do not need them. Like a man carrying a weapon, the creature with horns is likely to be uppish and contentious. Hence, dehorning should be the universal rule, unless the cattle are intended for show purposes. The time to operate is when the calf is young, and the thing to use is caustic potash. Moisten the end of a stick of the caustic and rub it on the "button" which has the intention of becoming a horn. Clip off the hair first. Care should be taken not to put on so much of the caustic as to cause it to flow off the button upon the skin. If used properly—and the operation requires no great skill—no horn will develop.

N. B.—Don't moisten the potash with the tongue!

Teach the Boy to Handle the Team

By W. D. Neale

SOME boys are nearly grown before they learn to handle the team. This is a mistake. If the team is gentle the boy may learn to use the lines when he is very young.

When the team is loose from the wagon and must be driven to the house or to another field, the boy who is six or seven years of age may be allowed to handle the lines and drive the team if the father is not too far away. There will be no danger of any trouble nine times out of ten.

How the boy will swell with pride and talk to his mother about what a big man he is getting to be! And he has a right to talk that way.

Later the boy may be allowed to stand in the wagon and drive a short distance down the road or across the field.

Some boys, ten to twelve years old, can handle a gentle team very nicely. They may not be able to catch, harness,

and hitch the team, but when the team is once hitched to wagon or plow the boys can drive and manage the horses as well as can their fathers.

A boy should be taught to be careful, never for one moment tying or wrapping the lines about his hands or other parts of his body. If allowed on the horse's



The boy can do it

back, the boy should be taught to keep his legs entirely free from entanglements with the harness.

GNAWING animals which damage fruit trees may be discouraged, and sometimes killed, by a wash made of Portland cement watered to the consistency of paint, mixed with Paris green. Apply with a brush.

Know What You Buy

Look through this issue of FARM AND FIRESIDE and see how many things are advertised which you need around the farm and in your home. You will doubtless buy several your next trip to town.

In the meantime write for the catalogues of these merchants. Look through them carefully and select just what best suits you, then when you go to town insist that the dealer show you these particular articles.

It makes shopping easier. Besides, you will be buying honest goods at reasonable prices. FARM AND FIRESIDE guarantees the honesty of its advertisers.

MORE POTASH COMING

American crops and soils are still as hungry for Potash as before the outbreak of the European War, which curtailed the Potash shipments.

Some of the Fertilizer Companies are trying to induce farmers to buy the one-sided low Potash or no Potash fertilizers of a generation ago. This means a fertilizer that is profitable to the manufacturer, but not the best for the farmer. When the Syndicate in 1910 started the direct sales of Potash to dealers and farmers at reasonable prices, Potash sales increased 65 per cent in one year, a clear proof that farmers know that Potash Pays. They know that Potash gives good yields, good quality and resistance to plant diseases.

Many of the Fertilizer Manufacturers are willing to meet the farmer's wishes and sell him what he thinks he needs. These manufacturers are now willing to furnish as much Potash as they can secure. They offer goods with 5 per cent and even in some cases 10 per cent Potash, if the farmers insist on it.

Shipping conditions are improving, more Potash is coming forward although the costs of production and transportation are higher. The higher price of fertilizers is not due wholly to the slightly higher cost of Potash. Much of the Potash that will be used in next spring's fertilizer had reached America before the war started.

There is no substitute for Potash.

We can no more return to the fertilizer of twenty years ago than we can return to the inefficient farm implements or unprofitable live stock of that period.

H. A. HUSTON.

Galloway's 1915 Strawberry Sensation
The famous Everbearing variety. Has long fruiting season and large, highly flavored berry. Had my friends try a few last season. Wonderful results. Want you to try some. Special price, also free offer whereby I give my new customers some of these plants free. Write for proposition and handsome colored catalog filled with new and standard varieties of garden and flower seeds, etc. Address, Galloway Bros. & Co., 392 Galloway Sta., Waterloo, Iowa

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When the Rain Fails Him

How a New Jersey Farmer Waters His Ten-Acre Garden

By Cora J. Sheppard



These people are gathered to watch this ten-acre farm get a good rainfall by the turn of a lever. The farm is located in New Jersey and is owned by Charles W. Skinner, whose irrigation system is described in this article

AFTER a man has planted a crop, a long drought is a cruel disaster.

Charles W. Skinner has been working on the subject of irrigation for seventeen years. He purchased thirty acres of raw New Jersey land, set up his pipe-line irrigation system on ten acres of it, and what those ten acres, well watered, have done in four years is an eye opener.

Two acres of low land, cleared up and drained, are now blossoming like a rose. What used to be a swamp, now takes more water than any other part.

Each acre takes 800 feet of sprinkling pipe, generally divided into three lines, but sometimes four. Each line starts with 1-inch pipe for 125 feet; then is reduced to $\frac{3}{4}$ -inch pipe to finish the line.

On the ten acres Mr. Skinner has thirty-one lines. The feed pipe in the center of the field starts out with 5-inch galvanized steel pipe, and is, after a way, reduced to 3 inches. Every 56 feet a sprinkling line is placed across the field. The pipes are supported by galvanized steel cables which in turn are suspended from 16-foot poles placed 125 feet apart.

This allows horse cultivation in either direction without any interference.

There is a special irrigation union at the beginning of each line. It was designed to allow the turning of the pipes and also to keep out dirt.

The irrigation nozzles are also especially con-

structed, and placed four feet apart. They are placed in perfect alignment on the pipe by means of a drilling machine designed especially for this work. One man can drill the holes for three acres of irrigation pipe in a day.

Because of the considerable distance between the lines, the nozzles are set so as to discharge the water in streams directed upward. This throws the water about 30 feet from the pipe line, but the exact distance for any position varies, depending on direction and strength of the wind.

After a strip is irrigated the line is turned slightly upward so the water falls just back of the strip already watered. It requires about six adjustments of the pipe line to thoroughly cover 56 feet of space. It is left in one setting about one hour; thus six hours are required to fully irrigate a field.

The nozzles are so spaced and the openings are of just sufficient capacity that the water is applied only as fast as the soil will absorb it. Water is not allowed to stand on the ground.

The water for irrigation is taken from a creek that runs through the place. For power a 12-horsepower gasoline engine is used. It operates a single-stage centrifugal pump. This pump supplies 400 gallons of water per minute under a pressure of 27 pounds to the square inch. The pump has enough power to spray the whole ten acres at once, and to me it was a marvel-

ous sight to see those acres getting all the water they wanted when they needed it most. Not far away there were farms on which the crops were covered with dust and drying up, indicating financial failure.

The irrigation plant can be run from 11 A. M. to 6 P. M. on eight gallons of gasoline. Thus the outfit (with gasoline selling for $9\frac{1}{2}$ cents a gallon) can be operated for about 10 cents an hour.

Eight hundred feet of pipe for an acre at the present price of pipe costs \$40. The cost of feed pipe averages \$20 per acre.

COST OF THE SYSTEM PER ACRE

800 feet of galvanized sprinkling pipe.....	\$40.00
90 feet of feed pipe.....	20.00
Nozzles per acre.....	10.00
Irrigation unions (3)	5.50
Valves and fittings.....	6.00
Cable	5.00
Poles	10.00
Guy rods, turnbuckles, etc.....	5.00
Roller-bearing pipe supports.....	7.50
Labor for installing	20.00
	<hr/>
	\$129.00

The pump, engine, and belt cost \$750.00.

With this pumping outfit twenty-five acres can be irrigated, and Mr. Skinner is getting ready to clear up more ground and add more piping as needed.



How the water is distributed over a large field. The nozzles are four feet apart, as in the overhead system. Gasoline supplies the power; the creek supplies the water; sun and soil do the rest

You Need Rest

This is How You May be Comfortable Eight Hours of the Day

By Mary Hamilton Talbott

IN FURNISHING a home the housewife should give most careful thought to the beds and their equipment. We spend at least a third of our lives in bed, and it is worth while to make that third pleasant and refreshing. The best mattresses and springs are none too good when one is storing up strength for more work. Besides, as is the case with most household purchases, the best are really the cheapest in the end.

As the question may not come up for consideration more than once or twice in a lifetime, the careful selection of a mattress for each bed in the house is of the utmost importance. The mattress family is a large one, ranging from the straw mattress at \$2.50 to the finest hair mattress costing \$70. The last-named themselves form a goodly sized branch of the family, for hair comes in ten different grades, and the cheapest hogs' bristles to the pure South American drawings all find a place in "hair" mattresses.

The Popular Mattress

The cost of a mattress of course will vary according to the kind of hair it contains, for they all weigh about the same—forty pounds. But one made of black drawings—that is, long hairs, very curly and full of vitality, drawn from the tails and manes of South American horses—will cost about \$40. The white drawings are more expensive than the black, but are merely bleached, and are no better. Pure South American hair, shorter than the drawings but very good, cost \$20; the soft mixed hairs, not advisable because they mat down so quickly, may be had as low as \$10.

Perhaps the most popular mattress of to-day is not the hair mattress but the cotton-layer mattress. It is not so expensive, and from its original price of \$10 or \$15 may be subtracted the cost of the renovations every three or four years that must be made to the mattress made of hair. It represents the acme of comfort, is perfectly even, and does not decline into a humpy state, a condition which overtakes even the best hair mattress; and it needs to lie in the sun only one day in order to recover all its first snap and spring. Of course these mattresses do not wear as long as those made of good hair, but they are infinitely better than the poor quality hair mattress.

Economy Should Not be Forgotten

For those who wish something less expensive than either of these, an excellent husk mattress with cotton top and bottom may be had for \$5, and without the cotton bottom for only \$4. Even cheaper than these is the straw mattress with a cotton layer on top. Such a mattress costs \$2.50. Between these three cheap mattresses and the more costly hair and cotton-layer kind there exists a compromise in the palm-fiber mattress. This is filled with palm leaves which,

after they have been stripped, attain something of the resiliency of hair. It may have either hair or cotton top, and makes a very comfortable mattress.

It is well to remember in buying any kind of a mattress that imperial edges and fancy ticks, although attractive, add no real value to the mattress and increase the price considerably. Divided mattresses for double beds cost 50 cents more than the single mattresses.

You Want Good Springs Too

In order, however, to realize the full luxury of a good mattress it is necessary to start with good springs. They may be either the woven wire or the box. The woven wire are much cheaper and extremely comfortable as well, but in buying them get the steel frame, and one that is made in such a way that the spring itself does not press down upon it when in use. The steel frame is more sanitary than the wooden, and easier to handle. The quality of the spring itself must be considered only in relation to the weight of the person who is to use it. The more expensive ones are needed only for very heavy weights. The best one for ordinary use costs about \$5. Box springs make both a softer and more even bed than the woven-wire springs. They cost several times as much, but are worth the difference in price.

It is not at all necessary, however, to have them upholstered and padded on top: it makes them more expensive without adding to the value or comfort in any way. When a good mattress is used,

a layer or two of hair or cotton on top of the spring is of no benefit; neither do the fancy edgings or tufting add any value. It is necessary to be on your guard against these supposed improvements, which mean nothing in actual worth but stand for greatly increased prices. The value of a box spring must lie in the springs themselves, which should be of the best quality in the number of springs used and in the way they are tied, so that one or more cannot possibly escape and spring up through the top. The apparent difference in the thickness of box springs is usually due to the amount of hair and cotton on top, for the springs themselves are generally the same height. A good box spring ranges in price from \$15 to \$20.

Blankets That Will Wear Well

It is false economy to buy a cheap blanket if you wish a blanket to wear well and to continue to look well; for this reason a blanket which is nearly all wool is always best. I say nearly all wool, for some of the most careful buyers for the shops advise a little cotton, as it prevents the blanket from shrinking when it is washed or cleaned, and makes it look better after the ministrations of the laundress. The percentage of cotton, however, should be very small. Cotton adds weight but not warmth; an all-cotton blanket has little warmth, although in the shop it may look almost as inviting as the all-wool.

Undoubtedly, price is one of the best guides in buying blankets for those who

have not made a study of testing them, although this will vary slightly in the different shops, a more fashionable store selling the same blanket for a little higher price than the one not as accessible nor as well located; but this variation is comparatively slight.

Many Like the Wool Quilt

The following have been supplied by a shop which is an authority on woolen blankets. The lowest price for all-wool blankets for a single bed is quoted at \$9.50 a pair; for a double bed, \$11 a pair. The single-bed blankets for \$5 per pair and those for double beds for \$6.50 per pair will have 80 per cent of wool in them, and 20 per cent of cotton. This per cent of cotton is not large.

As to the blanket's chief confederate, the quilt, popular choice has now fallen upon the wool quilt in preference to that made of down, which for many years dominated our fancy. Although the complaint of many people against this quilt is that the down is anything from rabbit's hair to goose down, and that the down will not stay in the cover, perhaps the principal reason for the success of the wool quilt is that it is more hygienic than the down. It does not overheat the body, and in consequence none of the chilling perspiration results which is often felt by those who use down quilts. Wool-filled quilts, with either sateen or satiu covers, are to be recommended. Cotton quilts, which sell from \$2 to \$5, are not warm enough for anything save mid-season use, and are therefore poor economy.

You Can Spend Much or Little

In the matter of outside coverings there is a wide range of materials to suit every type of bed and room furnishings. One may have the Marseilles spread, now made in New England, costing \$2.50, which fashion declares at present shall have scalloped edges and which adjusts itself to the corners of the bed. Less expensive than this spread is the honeycomb, which is usually sold for \$1.25 or \$1.50, but which can sometimes be bought for 50 cents. In this grade, however, it is not durable enough to be worth considering. Among the less expensive spreads the colored Mitcheline in blue, pink or yellow, costing \$2.75, are especially attractive and add to any bedroom a charming note of daintiness. It is interesting to note that valances have in the past few years lost favor. They always collected dust, and their place is now taken by the scalloped-edge spreads.

Sheets and pillowcases vary so much in price it is difficult to give even an average. Linen is of course the ideal material for both, but it is expensive, sheets costing from \$5 up to \$20 a pair. It is better to make cotton sheets at home, but bought ready-made they cost from 75 cents to \$1.50 each, of good quality. Cotton pillowcases cost from 15 cents up.

The Slumber Lady

By
May Moore Jackson

DOWN the way to Slumber Street
I hear her skirts a-trailing,
Stir the leaves and bend the grass.
Hush! Let the Slumber Lady pass
To kiss your eyes, O Dear-My-Sweet.

Down the way to Slumber Street
I hear a river rolling,
Elfin ships a-rocking there
Are filled with dreams; the Lady Fair
Will bear you to them, Dear-My-Sweet.

Down the way to Slumber Street
I hear strange music wooing,
In fairy bells' enchanted chimes
The Slumber Lady calls, betimes,
"Follow, follow me, My-Sweet."

Water on Tap for Everybody All the Time

By R. M. Stanley

HERE is a handy arrangement by which anyone having a good well and a pump near the house may provide running water in the house without interfering with the use of the pump for other purposes. The principal cost is that of the pipe, which will depend on the distance of the well from the house.

I used 3/4-inch galvanized pipe which cost me 6 cents per foot. The tank is set on a frame made of two-by-fours securely fastened to the house. My tank is a 60-gallon barrel which answers our purpose very well, but even though it should be smaller the housewife will appreciate an arrangement of this kind more than almost anything that can be done about the house.

Found Practical in a Year's Test

The milk box is also convenient for keeping milk and butter cool in summer. If fresh water is put into the box twice a day, milk and butter will keep perfectly.

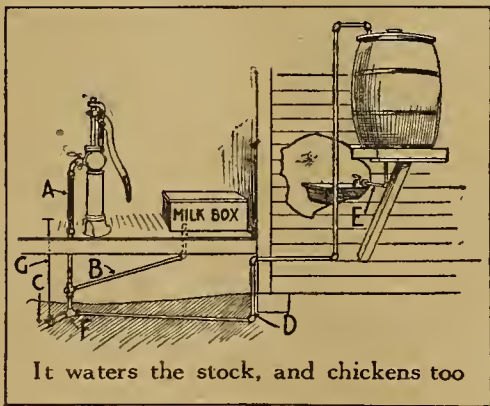
I have used the system illustrated in the sketch for a year, and have had no trouble whatever with it. A is a short piece of hose with a regular pump-hose attachment for making a water-tight connection to the pump. It is joined to the pipe below with a regular hose coupling, making the whole connection water-tight. When I wish to pump water into a bucket I disconnect the hose from the

pump. B is the pipe leading to the milk box. C is the drain pipe. D is the pipe from the pump, and E is the pipe from the tank to the sink. When I wish to force water into the tank I close the valve (G), which has a handle extending through the well platform, and I also plug the pipe in the milk box. A valve on the milk-box pipe would be better, but I have used a wooden plug with perfect success. As the water has nowhere else to go it is forced into the tank.

The pump must of course be a force pump.

If I wish to put water in the milk box I remove the plug, and the water runs in from the tank. When valve G is opened all pipes are drained. Pipe C (the drain pipe) empties about forty feet from the well, where I have a watering trough for stock. If I wish to pump water for stock I just leave valve G open.

All pipes are on an incline to prevent



It waters the stock, and chickens too

freezing in cold weather.

In freezing weather I empty tank at night by opening the faucet in the end of pipe E, and the tank is drained through the sink drain pipe, which empties about forty feet from the house, where I have a trough for watering the chickens.

Refilling the tank in the morning takes only a few minutes, and it will not freeze during the day unless the weather is extremely cold. But even in such cases, being without running water in the kitchen for a day or so is nothing compared with not having it at all. It saves the women thousands of steps.

Sick-Room Conveniences

By Maude E. S. Hymers

FOR the patient able to sit up in bed there is manufactured a special table having only one leg, but with a base heavy enough to support the table over the bedside. Lacking this, an ordinary

sewing table may be used by unfolding two legs and setting them on the floor beside the bed, leaving the other two legs tucked under. In this case the table must be supported across the patient's lap by resting it on a prop on the bed.

To Help Your Memory

When patients must be fanned a great deal it will be found a help to have large handles made for the palm leaf. These do not cramp the hand as do the regular fan handles. The hollow end of a window shade roller makes a convenient handle. Slip the stem of the fan into the opening and wedge it into position. Cut off a foot or two of the length of the roller and round the end smoothly.

When liquid medicines are to be given assist the memory with a miniature clock dial. Cut a circle of cardboard large enough to fit over the tumbler containing the medicine, marking the hours around the edge to represent the face of a clock. A narrow strip of cardboard should be fastened in the center with a pin so that it may be moved like a clock hand to the hour at which the next dose of medicine is due.

Where more than one kind of powder is to be given a written chart should be prepared in advance, setting forth the hour for each medicine. This is safer than to depend upon the memory, which in serious cases may be overworked.

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New Ideas About Why We Eat

Some Definite Suggestions and Recipes to Make Meal-Planning Easier

By Avis Gordon Vestal

WE ALL need certain kinds of materials to stoke our body machinery with fuel. Foods are these fuels, and they are of five kinds. All five should be represented in our day's ration, yet no one of the five should appear to excess.

A good menu for the day is one that is balanced—that is, the five foods necessary for health are all represented in proper proportion. If we know what these are and what foods belong to each class we shall have a basis for planning our meals. Here is the list, numbered for ready reference:

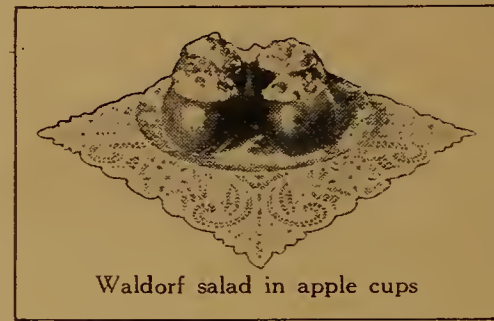
1. *Minerals*, obtained through our food, are indispensable for our bones and teeth, and are used also in our muscles and blood and in aiding body processes. Practically all foods contain a small amount of mineral matter which is shown as ash if they are burned. Our most important sources, however, are milk, eggs, meat, vegetables, and fruits. It is because of our need of certain minerals that in the spring we crave greens, young onions, and lettuce. When we have had a diet insufficient in minerals our family doctor prescribes a tonic containing iron and magnesium.

2. *Water* is our second "food." Though it does not supply energy it is essential to nutrition. It is needed to form about sixty to seventy per cent of our body weight. As a regulator of body processes it serves as a solvent and carrier of nutritive material and waste. It also keeps the blood and digestive fluids of proper concentration and helps to regulate the body's temperature. We should drink more water every day than most of us do, yet we require water in our foods, especially in summer. Water is most abundant in green vegetables, such as tomatoes and eggplant, and in fruits, like berries and melons. We also "eat" water that is added during the cooking process to cereals, meats, vegetables, and other more filling foods.

3. *Fats* are very concentrated foods, required to supply energy for our muscular

or a frozen sherbet would have been more acceptable than the pie, would it not? One may go to the other extreme. I know of a family of country women who had the following meal for a summer supper, after a light noon lunch and practically no breakfast: Green sweet corn, fresh, uncooked tomatoes, peaches, and muskmelon. A daughter, telling me what a big supper she had eaten, said she had had nine small ears of corn, three tomatoes, five peaches, and an entire small melon. There was bread on the table, but she ate none. There were fine eggs in the house that could have been cooked in three minutes, but she was "tired of eggs." There were starchy vegetables in her garden, and she had been to town and could have brought back a steak or any canned meats or vegetables easy to prepare. The fault with this meal was that it was almost entirely water. It did not "stick to the ribs." It had no energy producers, though these women had a great deal of work to do. As a result, they felt tired.

We talk about conserving forests and



Waldorf salad in apple cups

water-power rights and mineral wealth. Let us also learn to conserve Mother, who has most of the cooking to do. To economize on Mother it is well to cook enough of some foods at one time to serve both dinner and supper. Better yet, if you have a cool storage place cook enough to serve one meal on two successive days. A few foods are not good cold, nor warmed over, but most meats, vegetables, fruits, and cereals are as good at the second serving, and some are better. The form or the sauce can be varied, thus potatoes may reappear as salad, soup, scalloped, creamed, or as cakes.

Here are some sample menus planned for the working days of a winter week. Where some special form of bread is not mentioned, ordinary white bread, with its accessories, butter, jam, or other spreads, is to be used. Where coffee or tea is given as the drink for adults, milk should be given to the children. Cocoa is suitable for the entire family.

Recipes for the numbered foods are given below.

The best general plan for breakfasts is to have four items with their accessories: a hot drink; some form of bread; and two other foods chosen from the cereals, eggs, fruits, and, in winter, from the smoked and salted meats on hand in every farmhouse.

As Monday is washday in most homes, its meals were designed to leave most of the cooking until the evening meal is prepared.

MONDAY

Breakfast—Coffee; hot huttered toast; coddled eggs; oatmeal with cream.

Dinner—Thickened stew of meats and vegetables cooked in extra amount on Sunday; fruit; tea; cookies.

Supper—Cocoa; French rarebit (1); sweet potatoes baked with apples (2); biscuits.

TUESDAY

Breakfast—Coffee; reheated biscuits; omelet; fried corn-meal mush.

Dinner—Pot roast of beef; mashed potatoes; home-canned string beans; stewed winter pears; tea.

Supper—Buttermilk; salad of potatoes; eggs and onion; beet pickles; bacon gems (3); chocolate pudding with cream.

WEDNESDAY

Breakfast—Coffee; milk toast; crisp bacon; baked apples with cream.

Dinner—Cream soup from dried peas; scalloped beef and macaroni (4); cold slaw; lemon pie; tea.

Supper—Potatoes scalloped with cheese; cocoa; baked eggs; doughnuts.

THURSDAY

Breakfast—Shredded wheat biscuit with dried beef gravy; Graham bread; sliced bananas with cream; coffee.

Dinner—Roast chicken with bread dressing; creamed onions; baked potatoes; cucumber pickles; apple sauce.

Supper—Reheated bread dressing; baked beans; parsnips; lemon jelly garnished with nuts and served with cream.

FRIDAY

Breakfast—Hominy; ham; scrambled eggs; coffee.

Dinner—Cream of tomato soup; salmon salad (or baked salmon loaf); mashed sweet potatoes; Lima beans; canned peaches.

Supper—Cottage pie (5); Graham gems; stewed figs; cake.

SATURDAY

Breakfast—Cream of wheat with cream; sausage; apple sauce; coffee.

Dinner—Pie (round steak with biscuit crust); scalloped potatoes; creamed carrots; canned cherries; tea.

Supper—Fried potatoes; Waldorf salad (6); corn bread; custard; cocoa.

It is important to know what substitutions are possible without destroying the value of these meals. Suppose you do not like onions, or you cannot get celery, or you have a chance to get fish on a day for which beef is suggested? The following lists are of approximately the same value and are interchangeable:

One meat for another, or fish for meat; or you may substitute for meat a dish of bread or macaroni combined with cheese and milk or eggs; or dry beans or peas or nuts.

The following starchy vegetables may be substituted for one another: Potatoes, sweet potatoes, macaroni, tapioca, hominy, noodles, rice, bread, corn-meal mush, and so forth.

One root vegetable for another: Beets, carrots, rutabagas, turnips, salsify, parsnips, and so forth.

One green or watery vegetable for another: Celery, lettuce, tomatoes, onions, cabbage, cauliflower, eggplant, fresh peas, string beans, Brussels sprouts, greens, cucumbers, okra, and so forth.

Recipes for the Menus

1. **FRENCH RAREBIT**—This is a meat substitute. Fill a baking dish with alternate layers of buttered bread cut in cubes and grated cheese. Season with salt, paprika (red pepper), and mustard. Pour over it a sauce made in the propor-



Sweet-potato novelty

tion of one beaten egg to a cup of milk. Bake in a moderate oven until browned.

2. **SWEET-POTATO NOVELTY**—Into a greased shallow baking dish put a thick layer of thinly sliced apples, sprinkle with sugar, and add a small amount of hot water, barely enough to steam the apples. Cover with a layer of sliced boiled sweet potatoes. Season the potatoes with salt and sugar and dot generously with butter. Bake until apples are soft and potatoes browned.

3. **BACON GEMS**—Use one quart of flour sifted with four level or two heaping teaspoonfuls of baking powder, a scant teaspoonful of salt, and a tablespoonful of sugar. Add six level tablespoonfuls of shortening, two beaten eggs, four tablespoonfuls of bacon that has been cut into tiny cubes and fried crisp, and about one and a half cupfuls of milk or water. Bake in muffin pans.

4. **SCALLOPED MEAT** is very tasty. Into a buttered dish put alternate layers of minced cold meat and boiled macaroni, each previously seasoned. Pour over it a thickened sauce made of strained, stewed tomatoes flavored with butter, salt, pepper, grated onion, and sugar. Cover the surface with buttered bread crumbs. As all of the ingredients have been previously cooked, the baking is a short one. Any kind of meat is suitable.

5. **COTTAGE PIE** is meat and starchy vegetables combined. Cover the bottom of a baking dish with hot seasoned mashed potatoes, either fresh or reheated. Put on a thick layer of chopped cold meat. Pour on the thickened leftover gravy, cover with potatoes, dot with butter, bake until browned.

6. **WALDORF SALAD** or **SALAD IN APPLE CUPS** is made of equal parts of chopped apples and celery (or cabbage) and nuts. Season lightly with salt, generously with sugar. Mix with boiled salad dressing thinned with plain or whipped cream. It is delicious served in cups hollowed from red apples or upon lettuce in summer.

Maternity Clothes and a Baby's Layette



PATTERNS shown on this page may be obtained from either of the following pattern depots: Pattern Department, FARM AND FIRESIDE, 351 Fourth Avenue, New York City, or Pattern Department, FARM AND FIRESIDE, Springfield, Ohio. Be sure to give correct size, number of pattern, and address when ordering patterns.

No. 2678—Maternity Waist in Two Styles, with Bolero

34 to 46 bust. Material for 36-inch bust, three yards twenty-seven-inch, seven-eighths forty-two-inch for bolero, seven-eighths contrasting, and five-eighths net for guimpe. Pattern, ten cents

No. 2679—Maternity Skirt with full Tunic

24 to 36 waist. Material for 26-inch waist, six yards thirty-six-inch, with two yards lining for underskirt. Width at bottom in 26-inch waist, two and three-fourths yards. Pattern, ten cents

No. 2680—Flaring Belted Coat, with or without Cape

32 to 44 bust. Material required for 36-inch bust, five and one-half yards of thirty-six-inch, or four and one-eighth yards of fifty-four-inch material. The price of this pattern is ten cents

No. 2181—Empire Wrapper in Two Styles

32, 36, 40, 44 bust. Material for 36-inch, six and one-half yards of twenty-seven-inch, with three-fourths of a yard of forty-four-inch for yoke and sleeves. Price of this pattern is ten cents

No. 2159—Empire Maternity Gown with Guimpe

34 to 44 bust. Material for 36-inch bust, six and one-fourth yards thirty-six-inch, with one yard contrasting material, and three-fourths net for guimpe. Price of this pattern is ten cents

No. 2564—Set of Baby Patterns

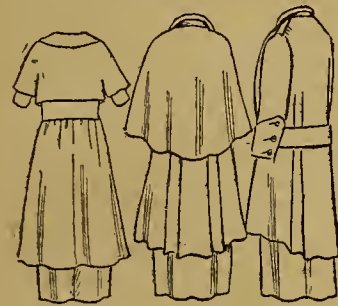
Cut in one size only. This set includes a coat, dress, petticoat, long kimono, perforated for short length also, and a night-dress. The price of this set of baby patterns is twenty cents



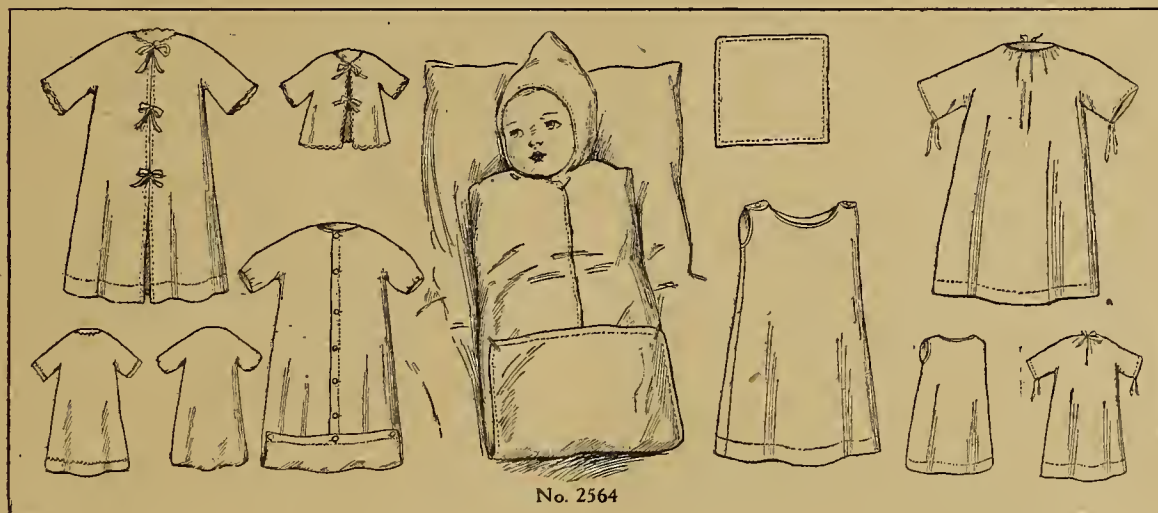
No. 2181

No. 2159

THE costume illustrated in Nos. 2678-2679 is an excellent dress for afternoons. Both the wide belt and circular cape may be omitted on coat if they are not fancied.

No. 2678
No. 2679

No. 2680



No. 2564

TWO comfortable, graceful designs for the house are shown in Nos. 2181 and 2159. They would make up well in a soft silk, light-weight wool, or summer cotton, with a contrasting material for trimming.



No. 2159

No. 2678
No. 2679

No. 2181

The Brown Mouse

Continued from Page 9

study?" queried Jim. "Is it anything more than an outline of the mental march the pupils are ordered to make? Take reading: Why does it give a child any greater mastery of the printed page to read about Casablanca on the burning deck than about the cause of the firing of corn in hot weather? And how can they be given better command of language than by writing about things they have found out in relation to some of the sciences which are at the very foundation of good farming? Everything they do runs into numbers, and we do more arithmetic than the course requires. There isn't any branch of study—not even poetry and art and music—that isn't touched by life. If there is we haven't time for it in the common schools. We work out from life to everything in the course of study."

"Do you mean to assert," queried Jennie, "that while you have been doing all this work which was never contemplated by those who made up the course of study you haven't neglected anything?"

"I mean," said Jim, "that I'm willing to stand or fall on an examination of these children in the very textbooks we are accused of neglecting."

Jennie looked steadily at Jim for a full minute, and at the clock. It was nearly time for adjournment.

"How many pupils of the Woodruff School are here?" she asked. "All rise!"

A mass of the audience, in the midst of which sat Jennie's father, rose at the request.

"Why," said Jennie, "I should say we had a quorum anyhow! How many will come back to-morrow morning at nine o'clock and bring their schoolbooks? Please lift hands!"

Nearly every hand went up. "And, Mr. Irwin," she went on, "will you have the school records here so we may be able to ascertain the proper standing of those pupils?"

"I will," said Jim.

"Then," said Jennie, "we'll adjourn until nine o'clock. I hope to see everyone here. We'll have school here tomorrow. And, Mr. Irwin, please remember that you state that you'll stand or fall on the mastery of these pupils of the textbooks they are supposed to have neglected."

"Not the mastery of the text," said Jim, "but their ability to do the work the text is supposed to fit them for."

"Well," said Jennie, "I don't know but that's fair."

"But," said Mrs. Haakon Peterson, "we don't want our children brought up to be just farmers. Suppose we move to town—where does the culture come in?"

XIX

Up Rose the Army of Acquittal

THE Chicago papers had a news item which covered the result of the examinations, but the great sensation of the Woodruff District lay in the Sunday feature carried by one of them.

It had a picture of Jim Irwin, and one of Jennie Woodruff—the latter authentic, and the former gleaned from the

morgue and apparently a sitting by a lumber-jack. There was also a very free treatment by the cartoonist of Mr. Simms's carrying a rifle with the intention of shooting up the school board in case the decision went against the schoolmaster.

"When it became known," said the news story, "that the schoolmaster had bet his job on the proficiency of his school in studies supposed and alleged to have been studiously neglected, the excitement rose to fever heat. Local sports bet freely on the result, the odds being eight to five on General Proficiency against the field. The field was Jim Irwin and his school. And the way those rural kids rose in their might and ate up the textbooks was simply scandalous. There was a great deal of nervousness on the part of some of the small starters, and some bursts of tears at excusable failures. But when the fight was over and the dead and wounded cared for, the school board and the county superintendent were forced to admit that they wished the average school could do as well under a similar test.

"The local Mr. Dooley is Cornelius Bonner, a member of the 'board.' When

asked for a statement of his views after the county superintendent had decided that her old sweetheart was to be allowed the priceless boon of earning thirty dollars a month during the remainder of his contract term, Mr. Bonner said: 'Aside from being licked we're all right. But we'll git this guy yit, don't fall down and fergit that!'

"The examinations tend to show," said Mr. Bonner when asked for his opinion on the result, "that in or-r-der to l'arn anything you shud sthudy something ilse. But we'll git this guy yit!"

"Jim," said Colonel Woodruff as they rode home together, "the next heat is the school election. We've got to control that board next year, and we've got to do it by electing one out of three."

"Is it possible?" asked Jim. "Aren't we sure to be defeated at last? Shouldn't I quit at the end of my contract? All I ever hoped for was to be allowed to fulfill that. And is it worth the fight?"

"It's not only possible," replied the Colonel, "but it's probable. As for being worth while—why, this thing is too big to drop. I'm just beginning to understand what you're driving at. And I like being a wild-eyed reformer more and more."

[CONTINUED IN NEXT ISSUE]

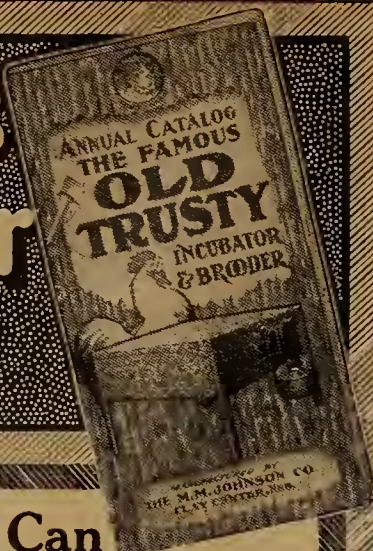
The Gentle Liar

THIS story, which will appear in the next issue, will be read with more than usual interest. It is different from the regular short story, for it does not attempt to tell about a number of people and how they were associated every day. It will tell about only one person, about the life—yes, the real life—of Uncle Ephraim. Everybody loved him. Everybody liked to have him tell them stories, especially the young school teacher who happened in at the time this story was written. He tells her an experience, and he does it in such a way that we have taken the privilege of calling him "The Gentle Liar." But we think none the less of him for that. Read this story next issue and see if you do not think this title fits him pretty well.

A GOOD HOME-MADE CEMENT—Boys, here is a good, easily made cement such as I often make for myself. It is quick-setting and will answer almost every requirement, such as uniting small pieces of iron, setting wooden handles into tools, and the like. It is made by dissolving orange shellac in enough alcohol to form a paste. This will keep indefinitely if tightly corked so the alcohol will not evaporate. When wanted for use, put as much of the paste as will be required into a small vessel and set it over the fire. The alcohol will soon burn out, and the cement should be used before it cools. This cement is very strong and is water-proof.

SWAYNE FOX.

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How Did Your Incubator Work?

Continued from Page 4

so long as he gets even a small proportion of early pullets.

The Last Word is—Germ Quality

My very best hatch in nine years was 91 per cent of all eggs put in. At another time I got a hatch of 95 per cent of all fertile eggs. I am certain that in these cases of more than average hatches I gave my machine no more careful attention than in many cases where poor hatches resulted. Of course a machine should be made and be run about right, but after that the quality of the germs tells the story.

I have known of good hatches after the blunder had been made of leaving the eggs out of the machine from morning till night, or of leaving the door of the machine open for a similar interval. A neighbor of mine who was taken ill in the closing days of a hatch, and was forced to do all sorts of things contrary to directions, got a splendid percentage of chicks. This is not related to encourage carelessness in running a machine, but rather to show what it means to have good eggs.

The few words "Don't fuss with your machine, fuss with your breeding stock" have proved of more value to me, I sometimes think, than everything else I have found in manufacturers' books of directions. It is much easier to learn how to run an incubator than how to handle yarded breeding stock to insure fertile eggs.

Plenty of fresh air should reach the machine when in operation. An immense volume of gas comes from a lamp burning continually, and if provision is not made for the escape of this gas it will have a disastrous effect upon the developing germs. For this reason there should always be ample ventilation. An experienced hatcher once told me that a brother breeder of his, who ran a single machine in his house cellar, invariably got better hatches than he did when running three machines in a similar space.

Turning the eggs in too cool an atmosphere in cold weather is a serious error. A thermometer is as necessary in the cellar as inside the machine. I bring the temperature of the cellar up to about 60 degrees by means of an oil heater before removing eggs from chamber. Immediately after returning the eggs, the freest possible ventilation is given to insure the escape of all poisonous gases. The amateur is almost sure to warm up the eggs too quickly.

Careless handling of trays and eggs, fussing with the regulator, tampering with the construction of the machine, and neglecting the lamp cause much loss to the beginners.

If there is any part that will bear fussing with it is the lamp. Many a hatch has been ruined by allowing it to get scant of oil or short of wick, or from being improperly trimmed. Regulating the blaze too soon after relighting causes lots of trouble. Allow the lamp to burn with a low blaze for a few minutes, then turn quite high and gradually lower to a little below the desired point, and it may then be left without danger of "running up."

I have used a standard make of machine for nine seasons, and am contented.

In selecting an incubator the important considerations are durability, consistency in regulating, and ability to hold up to the necessary temperature in the coldest of situations. Some machines after doing fine work the first season will spring apart in the joints soon after and be worthless. Others can be run for early hatches only in a room where artificial heat is provided night and day, while the regulators will be subject to freaky spells that will keep one constantly apprehensive. In fact, about the same relation between quality and price prevails with incubators as with all other articles of merchandise.

The Builder Knows Best

By Philip Marsh

I HAVE learned that the worst possible mistake a beginner can make in hatching chicks with an incubator is to fail to read carefully and to follow out in detail the directions for operating the machine. Oftentimes the directions are hastily read and cast aside, and some degree of disaster usually follows. The greatest care and study of each machine is necessary before the beginner may feel assured that he is not making some costly mistakes.

Claims for the absolutely best incubator—meaning the machine the mechanism of which is most nearly perfect—is a matter that few poultrymen can agree upon. Experiments carried on by the experiment stations show that the lead of any one of several of the best-known machines over its competitors is very slight. I would not hesitate to recommend any of the standard makes.

Often the price of the incubator becomes an important consideration, and in case a good standard incubator is sold at low cost I advise one with a slim pocketbook to buy it.

Ten Years of Hatching

By Oscar Nelson

IN MY ten years' experience with incubators I have tried out several makes. I have come to the conclusion that most of the machines now on the market will hatch a good percentage of chicks if operated according to directions. I am also of the opinion that some makes will hatch better in certain climates than others, owing chiefly to the manner of construction of the machines. Some very flimsy cardboard-lined machines will do the work when new quite satisfactorily, in certain localities.

Personally, I prefer the machines that are most substantially built, well ventilated, and have an improved thermostat or heating regulator.

The best result I have secured so far was from a 120-egg machine. I put in 114 hen eggs and 40 bantam eggs for a friend a few years ago. The bantam eggs were all sterile. I tested out 8 of the hen eggs and hatched 98 perfect chicks—no weaklings or cripples in the lot. I have heard of better hatches, but have never seen them, and have never seen 98 incubator chicks their equal as they came out of the machine without being sorted. The eggs were strong in fertility at the time, and that of course had much to do with the ultimate result.

The beginner is inclined to blame the machine, the thermometer, the eggs, or most anything else but himself if he is unable to get good results out of a machine. Good fertile eggs from free range stock will hatch in most any incubator if it is run properly.

One of the many errors the beginner will make is that of running the machine at too low a temperature. This is especially true early in the season. I prefer to run it a little higher for early hatches—from one half to 1 degree above what the directions instruct. A delayed hatch always results in weak chicks; and if the machine is run at too low a temperature early in the season, when the weather is cold, a delayed hatch and weak, stuck-in-the-shell chicks will result.

Some years ago I bought a cheap second-hand incubator, and after regulating it and breaking it in I set it. It ran very nicely for a few days. I had to leave for town one morning right after I had filled the lamp, and of course I locked up the machine. Imagine my surprise and chagrin when I returned home to find the lamp out, the thermometer broken, and the eggs cooked. The whole work was a total loss, but I count it as one of my most valuable incubator experiences from the fact that it taught me a lesson that I shall never forget.

I was fortunate indeed to escape with no greater loss. Several of my neighbors have had conflagrations from lamps just filled and left without careful adjusting. When you are absolutely certain that everything about the machine is O. K. and you are about to leave it for the day, just go back and take a second look at it.

There Are Dozens of Kinds

A POULTRYMAN who cannot these days find an incubator to suit his particular needs is hard to please. There are at least three dozen machines now on the market, varying in capacity from the two-hen size (25-egg) to the 1,000-egg and upward units. More than a dozen of these have been considered standard for years, which means the older makes have been in use so long that their reliability has been demonstrated. At least two dozen different machines are advertised by dependable farm and poultry papers which guarantee to make good any losses sustained by subscribers purchasing goods advertised in their columns.

The principal difference between the best so-called high-priced and low-priced machines is in most cases the greater durability of the former.

148 Chicks From 150 Eggs

I surely praise the Sure Hatch incubators. I have a 150 egg size. Osceola, Mo. I put in 152 eggs and broke two the first week which left only 150 at hatching time. I got 148 chicks and never tested the eggs. We surely have had fine luck with our machine the past two years. Would not sell it and be without it for any money. My neighbors have other incubators and I beat them all. NELLIE GARDNER



Frank Hammond
President

Women and children find it easy to succeed with the Sure Hatch Incubator

We can give you the names of tens of thousands who make a handsome, steady income with very little effort, and would not bother with hens or with any other incubator. The

Sure Hatch Is Automatic in Operation

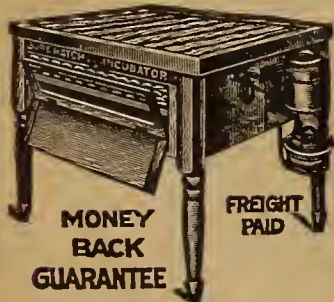
Any one can succeed with it, even if they have never seen an incubator before. It is a plain, simple, strong machine, so built that it can't go wrong. Will hatch in cold weather when others fail. We send with each machine complete instructions for operating that are very easily followed.

We guarantee it 10 years and send it to you freight paid, on 60 days trial. Satisfy yourself by actual test that it is a quality machine in every respect. Your money back promptly if it is not all we claim for it.

Poultry turns kitchen waste and other farm waste into ready money; and you can depend upon the Sure Hatch to bring you the chicks at the time of year you want to hatch them to get the best price for them.

Write for our Free Illustrated Catalog, giving full information on Sure Hatch Incubators and Brooders, with much valuable information about poultry.

SURE HATCH INCUBATOR CO., Box 66, Fremont, Neb.



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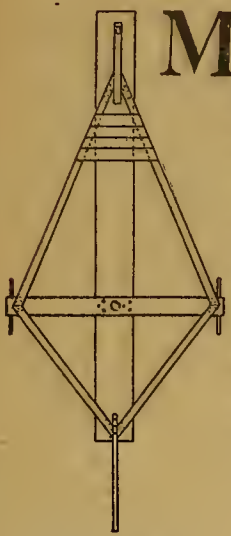
Our Uncle Sam Poultry Book will help you to succeed. It tells all about how to handle the business the best way. It is a compilation of official reports by U. S. Government experts. Tells what to do and what not to do. Many illustrations. Free with every Sure Hatch.

"To-morrow" is an unlucky word

Do You Want an Ice Yacht?

How to Have Fun Making It and Sailing It

By A. E. Swoyer



Center board, cross-piece, and connecting braces

MUCH may be done to secure safety in this amusement by observing a few simple precautions. A boy who does not understand sailing an ordinary boat, which is comparatively slow moving, should certainly not attempt to pilot an ice yacht of the narrow, racing type; neither should anyone, no matter how skillful he may be in the handling of his craft, sail it on ice rotten with seams and cracks, nor upon lakes crowded with skaters.

Then, too, it is possible to build a craft which is so wide in proportion to its length that it is not easily upset, so light that its momentum may be quickly checked, and with so small a spread of sail that there is slight danger of the speed becoming beyond control.

Such a boat is shown in the illustration. It is easily made.

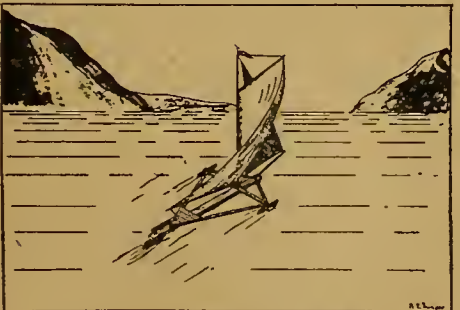
Find Your Old Skates

The main piece, or center board, of this yacht is a plank 2 inches thick, 1 foot wide and 6 feet long. The cross-piece is of the same thickness, but only 6 inches wide and 3 feet long. It is to be firmly bolted or screwed to the center board at a point about halfway between the middle and one end of the latter. The whole is made more strong by the addition of the connecting braces shown, which are simply strips of wood 1 inch thick and 2 inches wide nailed to the connected parts. The bowsprit is formed by firmly securing a stick about 1 foot long to the prow of the boat, and the seat is provided by nailing light boards across the rear end of the diamond frame. This seat may be fitted with a cushion of stuffed sacking or burlap, and a hand rail may be added if desired.

The runners of the yacht, as well as the rudder, consist of old skates, of which three will be needed. They must be mounted securely and in such a manner that the boat rests upon an even keel, as a mariner would say; that is, the bottoms of the skates when attached should all be at the same level. The preparation for mounting varies with the type of skate; the old strap models, those with wooden tops screwing directly to the soles of the shoe, and similar styles may simply have all projections above the foot plate cut off and holes drilled for the reception of the fastening bolts. The newer clamp type must have the clamping arrangement removed, which may be managed by the judicious use of a cold chisel, and the bolt holes drilled as just described. Two mounting blocks should then be made, each 6 inches long and 4 inches square. One of these is fastened near each extremity of the cross-piece, and a skate bolted on each by means of 6-inch bolts running clear through. It is a good plan to have the nuts screwed on at the top where they are in plain sight and cannot work loose without being noticed.

Materials and Dimensions

The third skate serves as a runner, and is mounted upon a block but 2 inches thick. Before mounting, a 6-inch bolt should be run through the block, the skate being then fixed firmly in position



Its proportions are safe

with large screws. A hole the same diameter as the bolt should next be bored near the rear end of the center board, the bolt slipped up through it and fitted to the tiller—a stick 2 inches square, 1 foot long, and rounded at one end to fit the hand. A nut is now to be screwed tightly upon the bolt, and if a number of washers were slipped on before the tiller is placed, so that they are between it and the center board, the nut will hold

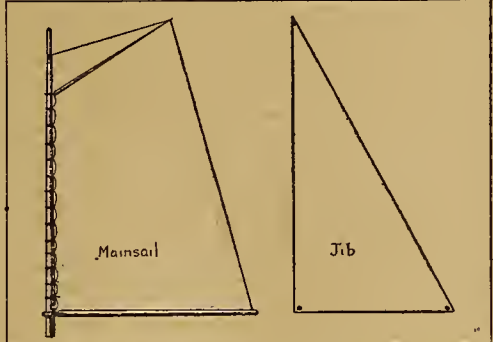
the rudder and tiller in a line while permitting them to move together.

The mast of the yacht is made from a piece of clear-grained wood, as Norway pine or spruce, 2 inches square and 6 feet long. The corners are to be rounded off and the whole tapered evenly so that when completed it is about one half an inch in diameter at the smaller end or top. The boom and gaff, which support and extend the mainsail, are made in the same manner, the former being 3 feet long and the latter 2 feet 6 inches. These spars should be lighter than the mast, the boom being cut from 1½-inch stuff and the gaff from 1-inch material.

The Way to Rig It

To set the mast, fix a heavy block under the intersection of center, board and crosspiece and bore a hole through both of a diameter a trifle less than that of the butt of the mast. The latter may then be seated firmly by driving it into place, although if the winds in your locality are unusually heavy it may be necessary to further secure it by means of guy wires running from the peak to the corners of the frame. The spars are made to slide up and down upon the mast by means of iron rings of proper diameter fixed to their larger ends, control being secured by the use of a cord attached to the gaff and running over a pulley fastened to the mast.

The next and final step in the building of the ice yacht is the making of the sails. These are preferably of light canvas, although if the prevalent winds are not too strong heavy muslin or sheeting will serve. This should be bound with tape on all edges, and the inner edge of the mainsail should have iron rings or rope loops sewn in so that it may slide up and down the mast. The upper and lower edges are then tacked or bound to the gaff and boom, respectively. The jib is a triangular piece of cloth bound as



The sails are preferably of light canvas

just described and with a ring or gasket sewn into each corner. It is held in place by three ropes, one attached to the peak of the mast, another to the bowsprit, and the third to the base of the mast. This sail serves to steady the boat and under certain conditions makes it more easy to manage. It may be dispensed with, however, and in that case the bowsprit will not be needed. The mainsail is 5 feet long, 2 feet 6 inches wide at the top, and 3 feet at the bottom. The jib is a right-angled triangle 6 feet long and with a base of 2 feet.

To complete the rigging of the yacht, secure heavy manila cord or fine rope; attach one end to the gaff at the small end, and run the other end of the rope through the pulley fixed to the mast, making it fast with a hitch taken about a cleat nailed to the base of the latter. This will allow the inner end of the gaff to sag. Attach a cord to this end, pull the gaff up until the sail is taut, and tie the cord to the main rope outside of the pulley. Another cord, 4 or 5 feet long, is fastened to the end of the boom. This may be held in the hand of the steersman or fastened to a cleat on the frame of the yacht.

Then for the Sport!

Such a boat is sailed exactly as a similar water craft would be. Handling the sail by means of the rope attached to the boom you can tack against the wind or run before it. To stop, throw the boat up into the wind by a turn of the tiller. If the wind becomes too strong, or if you wish to make a landing, release the cord which holds up the mainsail,—cut it, in an emergency,—the sail will come down with a run and the yacht soon lose way and stop.

The yacht described is designed for but a single person. Larger craft may of course be built by increasing the dimensions and keeping their proportions. The "little fellow," though, is safer and more easily managed. If you are within walking distance of a stretch of ice of any reasonable size it is emphatically well worth the making.



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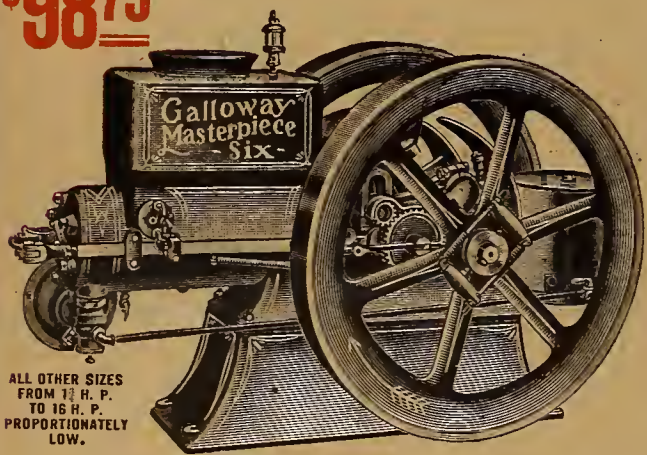
Wm. Galloway

This announcement tells you how on the basis of true co-operation we are striving to still further reduce the prices quoted below on our New Galloway Masterpiece Big 6 H. P. Gasoline Engines and New Galloway Sanitary Perfect Skimming Cream Separators. Every Farm and Fireside reader knows that in the past I have saved money for the farmers of this country and given them as square treatment as any other manufacturer. That's why I have been able to build up a mammoth business in so short a time. Quality is our watchword; Volume is our motto!

In 1915 with this new sliding scale, price reducing schedule that I want every one of you to know about, we will try to further reduce our prices on standardized, high quality cream separators and gasoline engines. Before you buy a Gasoline Engine or Cream Separator of any make or at any price, you should know about this great 1915 announcement. It means a big money saving to you. My big 1915 catalog is just ready to mail. 170 pages devoted to all kinds of farm, shop and household supplies and necessities, to say nothing of the four-colored cover and 72 pages of specially prepared, newly illustrated descriptions of the great Galloway line of Gasoline Engines, Cream Separators, Manure Spreaders which we manufacture in our own chain of factories right here in Waterloo, Iowa. The coupon gets this great catalog absolutely free. Fill it out and mail today.

More Horse Power — Less Money!

6 H. P.
\$98⁷⁵



ALL OTHER SIZES FROM 1 1/2 H. P. TO 16 H. P. PROPORTIONATELY LOW.

The New Galloway Masterpiece Big 6 H. P. gasoline engine at our new low price is the power sensation of 1915. It is positively the most engine for the money ever offered by anybody at any price, anywhere at any time, and my 1915 sliding scale, price reducing schedule still further reduces the above price according to the number sold. Positively A No. 1 in high quality of material, finish, design and workmanship. Absolutely supreme in power and simplicity. Not overrated nor high speeded nor light weight.

LARGE BORE AND LONG STROKE

Plenty of weight, low speed, built for long, hard, continuous service. Made in our own great factories by the thousands on automatic machinery. All parts standardized and alike and sold to you direct from the factory for less money than middlemen can buy engines no better at wholesale and in many cases not so good in carload lots for spot cash.

DON'T GET FOOLED

on the high speeded, short lived, cheap engines nor buy high priced engines with no legitimate excuse for their high prices. Check this New Galloway Masterpiece Big 6 H. P. Engine (or any other Galloway engine) point for point with them all, measure the bore and stroke, put them on the scales for weight, size them all up for simplicity, then test them out side by side and we leave it entirely to you to be the judge. Sold on 30 days free trial. Every sale backed by a \$25,000 bank bond. Fill in the coupon below if you are at all interested in getting a new or stronger engine and we will mail you this big catalog at once.

THE BEST OF ALL

I have used the engine to saw 30 cords of wood and it works fine. I am well pleased with it. There are quite a number of other engines in town, but this is far the best of all.

CHRISTIE SAUERS, Granville, Mass.

GALLOWAY SIX DOING 8-HORSE WORK

There is no danger of my sending my engine back. I like it too well. It is just what I want. So many thought a 6 h. p. would be too light to run my cider mill, but I have plenty of power and some to spare. I have seen a great many gasoline engines this summer, but the Galloway suits me the best of any I have seen. I would not want anything better.

E. M. LANTZ, Helena, Ohio.

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Used right now and through the winter is the biggest paying investment of winter farm work; means bigger crops next year. You know this yourself. Manure spreading time is all the time. Well manured fields resist drought. Make bigger \$Cash Money\$ Profits. This new No. 8 Low Down Galloway Manure Spreader is without doubt Galloway's greatest spreader and the best spreader on earth.

NOTE THESE NEW NO. 8 LOW DOWN FEATURES

Double chain drive, endless apron, force feed; front wheels cut under the load; close coupled, close hitch; lightest draft of any low down machine manufactured. Capacity 60 to 70 bushels. All steel gear complete with doubletires and neckyoke. Flexible rake, high speed beater pulverizes and spreads finely and evenly any barn yard material. Steel wheels; gear coupled with heavy channel steel, trussed like a steel bridge. Box rests on rear trucks; only 42 inches high at the center. Superior in every respect to new fangled freaks of heavy draft that eat you up for repairs.

K. K. FOUST of Ashley, Ohio, says: "I am more than pleased with the spreader. It has proven all you claimed it to be and more. By buying from your Company I saved \$21.80 and got just what I was looking for."

SEND FOR MY GREAT SPREADER BOOK "A STREAK OF GOLD" FREE.

Tells all about spreading manure to make the greatest profits. Do not buy a spreader of any make at any price until you have filled in the coupon below and mailed it to me for my big special spreader proposition and four-color catalog which tells the truth about the spreader business.

No. 8 SPREADER **\$82⁵⁰**



HERE'S WHAT THEY SAY!

DEAR SIR:—I have given your Spreader a thorough test and find it is all right. I like it fine. Every farmer should have one.

Yours truly, J. E. SNYDER, Somerset, Iowa.

GENTLEMEN:—The No. 8 Spreader which I received from you a short time ago, is satisfactory in every way. It works well in all kinds of manure, and has given no trouble of any kind. I like it better than any spreader I ever saw: First, because I think it stronger than others and not liable to break, as it has no cog wheels, and can be used in the winter as well as summer. Second, it is light in draft. Third, it is neat in appearance and well painted, and costs about \$50.00 less than many others.

Yours truly, ZENAS SPICER, Monmouth, Ill.

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This New Galloway Sanitary, perfect skimming, cream separator is made so good in our own factories that I will send it anywhere in the United States without an expert to set it up, to any inexperienced user for a 90 day free trial to test against any make or kind that even sells for twice as much and will let the user be the judge. It's the most modern, the most sanitary, the most scientific, the cleanest skimmer, the most beautiful in design of any cream separator made today and I have seen them all. Travel 20,000 miles, look over every factory in the United States and all the foreign countries and you won't find its superior at any price. Made in our own great factories from the finest materials, on the best automatic machinery, by skilled workmen, in tremendous quantities, all parts standardized and interchangeable, and sold to you for less money than dealers and jobbers can buy machines not as good in carload lots for spot cash.



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10 YEAR GUARANTEE

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Just fill in the Catalog Coupon below and my big Free Book telling all about this Cream Separator will be mailed you immediately.

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SAVED \$42.50 ON HIS SEPARATOR

I got the separator in first-class shape and like it fine. It is easy to operate and was easy to put up. The day I put it up, there was a — agent here with his machine. He wanted to set it up against my Galloway, but I said, "I guess not." I asked him how much he wanted for his machine. He said only \$85.00, so I saved \$42.50 and have as good a separator as sold for \$85.00.

ANDREW YOST, West Liberty, Ill.

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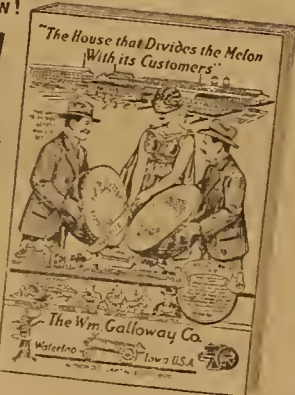
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Use postal or letter if you want to, but the coupon is handiest. This is positively the biggest, finest book Galloway ever offered. I will tell you how you can actually get a Galloway engine, spreader or separator either partly or entirely without a cent of cost to yourself, a clean liberal co-operative offer. Simply fill in the coupon. The saving that can be made in purchasing from this catalog may mean hundreds of dollars to you this year alone. Send the coupon today and I will send both the catalog and my special 1915 sliding scale, price reducing proposition at once. DO IT NOW!

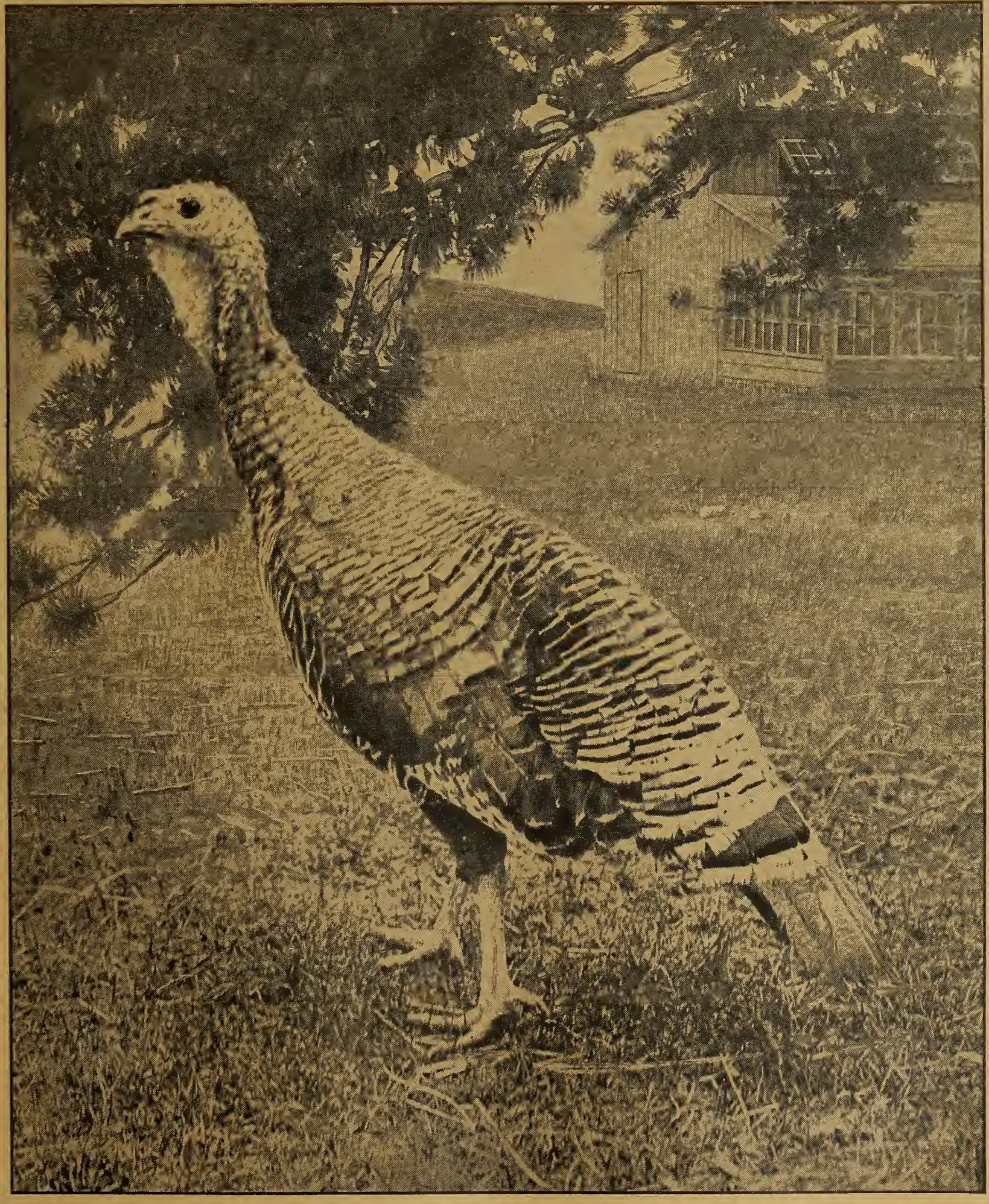
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WITH THE EDITOR

At COOLFONT FARM
January 30, 1915

I HOPE my readers will feel the interest I expect them to feel in a conference some twenty of us had in Washington late in November on the matter of rural credits.

Senator Clapp, Senator Norris, Representative Bulkley, and Senator Fletcher told us in the frankest and most candid way their views as to what sort of a farm-loan law will work best.

And here I wish to testify that the Senators and Representatives who are working on this great subject are on the level. A great many of us have been snake-bit and are distinctly from Missouri, but I think we may dismiss from our minds any suspicion as to the motives of these men.

I am convinced that they are all desirous of doing something for the farmer instead of to him. There is no lobby at work, so far as I can see, trying to put over any legislation which will favor any private interest in rural finance. Senator Fletcher spoke for the Fletcher-Moss bill because he honestly believes it will give the farmers what they need. He has in mind the lack of loanable capital in the South—whence he comes—and he favors his bill, which authorizes capital-stock banks run by lenders as well as co-operative banks organized by borrowers.

Senator Norris honestly believes in having the Government borrow money and re-loan it on mortgage. Representative Bulkley is quite sure that the Hollis-Bulkley bill, which provides that the land-mortgage association shall represent the borrowers only, and be run by them, will do us the most good, and that the Government should purchase our securities to the extent of fifty millions a year—if the market needs support. Senator Hollis is quite as sincere, and I am sure that the same is true of Mr. Keating and Representative Bathrick, who have government-loan bills.

Not that this proves that we are likely to get a good rural-credit law. Even with the best intentions, and admitting the great abilities of the men who are likely to shape the legislation,—if we get any legislation,—the task of framing a mortgage law, or a personal-credit law, which will be accepted by the people and at the same time amount



LATER: *President Wilson has seemingly taken a stand against rural-credit legislation at the present session. He feels that no satisfactory bill has yet been worked out. I disagree with this so far as it concerns land-mortgage credit. That is, I believe the matter has been so far worked out that a good land-mortgage bill might easily be passed before the present Congress ends. I think that the President is right as to short-time personal-credit legislation. This subject is still full of darkness. There should be a commission appointed now to conduct hearings on it, and get ready for legislation in the next Congress. Write your Congressmen and Senators your views on this matter.*

to anything is a hard one. The lawmakers naturally want to enact a law which will work. To work, it must make itself acceptable to the people. To be acceptable to the people—according to those who claim to know—it must not contain a lot of things which have been found necessary in Europe. And unless all these strict, inquisitorial, carefully guarded things—to which, again according to those who claim to know, the

American farmer will never consent—are embodied in the system the loans in the regions which most need them will not be attractive to investors. And unless they are attractive to investors the system will not amount to anything—and there you are.

Well, to return to our conference: There were these hard-working, hard-thinking lawmakers, all trying their very best to pass laws which will do us all good, and some twenty of us trying to tell them the sort of laws we thought will do. There were Grange masters from as far west as Oregon, Washington, and Idaho, one Farmers' Union man from South Carolina, and several experts. Captain W. S. A. Smith of Iowa is one of the men well known to FARM AND FIRESIDE readers who attended the conference, which lasted three days.

A committee on resolutions, after two days of conference, drew up a set of resolves which were adopted. You may not like them, but they seemed to commend themselves to the minds of those present. About the only dissent was from those who favored loans on farms from the Government direct to the farmers.

Brother S. H. Hobbs of North Carolina, a Farmers' Union man, brought in a minority report favoring direct government loans. The majority report was signed by Western Starr of Maryland, J. D. Ream of Nebraska, Herbert Harland of Idaho, John A. McSparran of Pennsylvania, and Herbert Quick of West Virginia, chairman.

The report urged on Congress the necessity of some system of land-mortgage credits as necessary to place agriculture on a level with other industries. We didn't believe in special privileges, but we did believe that in view of the fact that the Government is charged with a duty in the matter of financial systems, and has gone to a good deal of trouble to reform our system so as to put other business on a better basis, agriculture, having need of a different system, should have it provided.

Being opposed to special privileges, we went on record against direct government loans—Brother Hobbs bringing in a minority report which was not adopted.

We expressed the view that United States laws for a land-mortgage system are desirable—largely, so far as I am concerned, because some of the [CONTINUED ON PAGE 35]

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Fences That Laugh at Father Time

How to Tell in Advance What Materials Will Last the Longest and Cost the Least

By D. S. Burch

THE money put into farm fences in the United States every year exceeds fifty million dollars. Some of this we can save if we look carefully into where money is wasted. Our woven wire for 1913 would go around the world thirteen times, and we paid thirty-three million dollars for it. You may think we'll soon get through fencing; but no. The bill is increasing a million dollars a year.

Reduce your fencing bill in one of two ways. First buy the kind that's best for your purpose instead of something a dealer thinks you ought to buy. Second make stone, hedge or other natural fences, costing just labor, whenever such fencing answers your purpose.

It looks now as if the posts of the future will be either of preserved wood, rust-proof metal, or reinforced concrete. The fencing will be mostly metal protected against corrosion. We are pretty close to ideal fencing right now, but the good news hasn't got around. Here is some of it of practical value.

What wood gives best service in posts? The table below shows. No preservatives had been used on any of those posts. Ohio experts examined over 30,000 posts to get you these facts. The woods are arranged in order of their keeping qualities.

Notice that Osage orange made the best showing, with locust posts second. But all of the posts gave a service far above the average.

THE BEST COMMON WOODS FOR POSTS

Kind of Wood	Average Years in Use	Per Cent of Posts Sound
1. Osage orange	33.2	99.0
2. Locust	25.4	82.3
3. Cedar (red)	33.2	65.2
4. Mulberry	23.8	74.1
5. Chestnut	12.3	71.8
6. Cedar (white)	18.4	68.0
7. Oak (mostly white oak)	11.8	65.2
8. Catalpa	17.5	61.8

Elm, white walnut, honey locust, and sassafras failed to give good service. Sometimes durability is overestimated because a few posts have survived long years of service. But three or four lasting forty years mean little when all the others in the fence rotted after just a few years. Other practical things taught by the 30,000 posts are:

Put the end that is in the best condition in the ground. If you can't tell, put in the large end. Soils that are alternately wet and dry make posts decay quickly. Slow-growing timber lasts longer than the same kind grown more rapidly. Post timber should not be cut in the spring; cut in the fall or winter. Heartwood rots faster than that just inside the sapwood.

It pays to take care of wood fence posts. Three good rules are:

1. Stones, gravel, or ashes around the base keep down weeds and grass, and keep posts drier.
2. Season the posts. Green ones decay as a rule the most rapidly.
3. Treat them with

a preservative, such as tar, petroleum, or creosote. When wood posts rot it isn't from exposure to the weather so much as being eaten to pieces by the tiny plants and insects in the soil.

A good preservative must be put on in a way that makes it penetrate at least a quarter of an inch. Creosote is the basis for nearly all the wood-preserving liquids now sold. In putting them on follow the manufacturer's directions.

One of the best treatments is to soak the ends of well-seasoned posts in hot creosote for several hours

and then transfer them to a tank of cold creosote and let them cool. Some of the hot creosote is forced into the post, more will be absorbed in the cold creosote. Two tanks are needed to do the work best. The creosote should extend six inches above the ground when the post is set. When creosote costs 20 cents a gallon this treatment comes to about 8 cents to a post, not counting labor.

A post good for ten years may be made to last twenty years by this treatment.

In a Wyoming experiment they dipped the lower end of pitch-pine posts in crude petroleum and then burned off the oil. This drove the oil into the wood and charred the surface. At

the end of sixteen years these posts were in perfect condition and, in the words of the post specialist, "they would apparently last indefinitely."

Some posts set in salty ground along the Great Salt Lake were practically as good as new after many years. This suggests the possibility of pickling posts in strong brine, and dipping the ends in creosote or crude oil to keep moisture from dissolving the salt. We shall have more to say on this when it has been more fully tested.

The ends of white cedar posts were soaked in kerosene at the Wisconsin Experiment Station and lasted fifteen years.

Railroad Ties Saved a Big Post Bill

Getting creosoted posts free of charge is not very common, but this is the way a homeseeker in Texas managed it. He noticed that discarded railroad ties were burned to get them out of the way, so he had his friend, the section boss, save them for him. In two years' time he had fenced his 640 acres, including several cross-fences, using the old railroad ties for posts. He cut away the rot, but nearly always got a strong

post, for the ties had been creosoted. Some ties that seemed soft and weak from soaking in mud dried quickly and made perfectly good posts. So much for wood posts. Two other kinds are worth serious consideration—galvanized metal and concrete.

As between metal and concrete the choice depends on the cost. Both are fire-proof. Steel is lighter and the more easily handled of the two.

P. C. Grose, an Ohio farmer, has tried steel fence posts. "During the last two years," says he, "we have used steel posts and find them quite satisfactory. Their greatest fault is their tendency to yield when stock crowd against the fence, especially when the ground is soft. But the strain of the wire tends to swing it

back, so this fault is not as objectionable as it otherwise would be. In one fence we partly cured this trouble by using wooden posts alternately with the steel. Where a dip in the ground calls for an anchor we generally use a wooden post. The steel post can be anchored, however, by burying a 'dead man' (a large stone or piece of wood) and wiring it from the top of the post.

"We have used the large steel anchor posts too. We bury a 'dead man' close to the bottom, back of the post. From this we run double wires to the top and twist tight.

Against the front of the post we bury another 'dead man.' The post is then given a rigid cross-brace to a brace post. In this way the anchor post is not only held down, but is kept from being strained forward.

"The best feature of steel posts is the ease with which they are set. One man on the ground sets a post taken from a wagon, and the man in the wagon drives the post with a sledge. We were surprised at the speed we made.

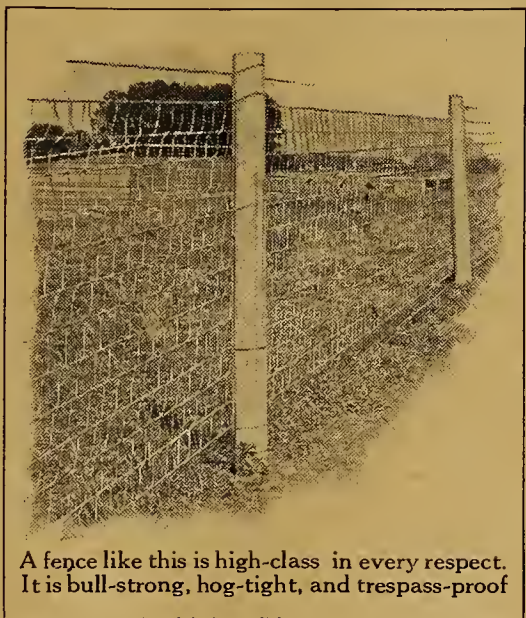
"We like the steel posts to replace wood posts rotted off. No auger is necessary. If a wooden post has rotted off, a steel post may be driven down beside it, making the fence rigid again."

Steel fence posts cost from 19 to 40 cents apiece. They have attractive ornamental tops for use about the house. Concrete posts are more durable, probably, than any other kind. Exact figures as to their service are not to be had because they are a thing of this generation and none have ever decayed. If well made they should last for centuries—making an absolutely permanent fence—unless they are broken off.

With Portland cement at \$2 per barrel, sand and gravel \$1 a cubic yard, and reinforcing steel 2 1/2 cents a pound, the materials in a standard-size post will cost about 25 cents.

Strength depends on the quality of the ingredients. The water used should be pure enough to drink. Dirty, unscreened sand and gravel positively will not do. Concrete well made is actual stone and the best of building material. Poorly made it is worthless. The standard mixture for concrete posts is: 1 cubic foot (1 sack) of cement; 2 cubic feet of clean sand; 3 cubic feet of clean gravel or crushed hard stone.

This is known as 1:2:3 mixture. Ob-



A fence like this is high-class in every respect. It is bull-strong, hog-tight, and trespass-proof



You can drive staples into this concrete post and they hold as well as in an oak post



Don't let weeds grow around your fences like this. They make the posts decay

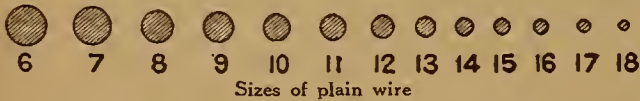
serve that ingredients are measured, not weighed. Make the mixture thin enough to flatten out by its own weight, but not wet enough to run. Let the posts harden in the molds forty-eight hours; then keep them thirty days in a damp place for curing. You can use them any time after that.

The square post is the easiest made. The standard dimensions for a line post are 4x5 inches at bottom, 3x4 inches at top, and 7 feet long. Round, half-round, and triangular forms are used. All need reinforcement unless very large, but the big post is not economical because reinforcement is cheaper than concrete. Quarter-inch rods bent to make a hook at the ends and embedded three fourths of an inch from each corner make good reinforcement. Always put the reinforcement at the corners or near the outside of the post. To put a pipe down the center is useless. Metal forms are handier to work with and easier to clean, but wood forms make just as good posts. The one serious objection to concrete posts is the difficulty of fastening the wire. One of the best fastenings is the Western Union twist illustrated in the sketch. This takes time, but is very strong. Wires, loops, or holes in the posts for fastenings have been found impractical, as the wires and loops break off and holes are seldom at the right height when you come to fasten the wire.

Heavy Galvanizing is What Counts

A patented three-cornered post now on the market has a composition along one face into which staples can be driven as into wood. These sell for 30 cents apiece in large quantities, and are well spoken of by users we have interviewed. The left-hand side of the double picture shows one of these, and at the right-hand a man is pulling at the fence to show how tightly the staples hold.

But posts are only half the fence: the fencing itself is equally important. Most wire-fence troubles come from light-gauge wire. Tuck that into a handy place in your memory. Small wire cannot be heavily galvanized. Consequently, though the small wire seems strong enough when new, the galvanized coating soon wears off and the wire rusts and breaks. A heavy wire takes a heavy coating and is better protected. The greater size of the wire is really not so important as the thicker galvanized coating you get with it. Twelve



and fourteen gauge wires sometimes rust badly within three years. There are other troubles too. The Department of Agriculture has gone into this rather deeply, and this is the substance of what its experts say:

No. 9 is the best practical size of wire. No. 10 is the smallest gage that any fence ought to contain. A mild steel resists rust better than a spring steel. All woven wires should be of the same quality of metal, otherwise the action of the atmosphere on two kinds of metal will generate a weak electric current that will cause the wires to corrode at the junctures.

When the zinc coating is rough at the bends you may conclude that the galvanizing is heavy and the wire will give a good service if the gauge is No. 9 or larger. A perfectly smooth coating, especially at the bends, indicates thin galvanizing.

Poultry wire galvanized after weaving is the only kind to purchase if you expect good service. This cannot be untwisted. Any kind that will readily untwist has been galvanized before weaving.

You've heard what the government experts have had to say about wire fencing. Now we'll let some farmers give their experiences with different kinds of fences.

"Drat the wire fences, I say," says John Pickering

Ross of Illinois. "I am old-fashioned enough to regret the departure of the blackthorn, osage, or other live fence from the face of the land. A whole lot could be said by the nature lover in their favor; even the champion of utility must admit that if properly cared for they make a perfect fence for all domestic animals, an admirable windbreak, a nesting place for birds the destruction of which we are just learning to deplore through the ravages of the insect pests."

Then, in a more liberal mood, Mr. Ross adds: "Nevertheless the demands of up-to-date farming have almost entirely banished the hedge and rail, and about all that remains for the fence builder is wire. Of the wire fences for sheep pasture nothing better has appeared than a 4-foot fence of from No. 7 to 10 coiled wire with stays 8 or 9 inches apart. Above this set three good heavy barbed wires 9 inches apart. The cost of this fence is high, but it is necessary only around sheep pastures."

Mr. Harold Whittemore, a lifelong farmer and dairyman, with experience in Wisconsin, Missouri, Kansas, and Idaho, says of the ideal farm fence:

"The most economical fence is the one that will give the longest service at the least cost. Fences are fixed capital and should be made indestructible as far as possible, so that the cost of upkeep may be reduced to the lowest point.

"Concrete posts are certainly in order. The most economical plan of fencing calls for the fewest fields that will accommodate your system of crop rotation. The style of fence must be based upon the kind of stock kept. My experience has been largely with cows and hogs. For them my best fence has been a heavy woven wire, 26 inches high, of seven strands with cross-stays about 6 inches apart. To this I add four strands of galvanized barbed wire. I place the first barbed wire 1 inch above the ground and 2 inches below the woven wire. The second barbed wire is put 2 inches above the woven wire, the third 8 inches above the second, and the last one 10 inches above the third. This makes a fence 49 inches high.

Stock-Proof and Will Last for 20 Years

"My first experience with this type of fence lacked the barbed wire at the bottom. A 400-pound sow by tugging and straining for an hour went under, hence the ground barbed wire. A "snoopy" cow found the space above the woven wire and spoiled some of it by pressing down on it. By narrowing this space to 2 inches no further trouble was had with either kind of stock.

"For corners I use three posts, each 10 inches or more in diameter. The corner post is braced by four-by-fours 12 feet long, cross-fitted in with heavy annealed wire run from the top of the corner post to the ground surface of the supporting post. All three posts are set 3½ feet in the ground, and are well anchored and tamped. Corners, put in as described, cost me about \$3 each for labor and material. The body of the fence cost about 75 cents per rod.

"Such a fence, with well-seasoned, charred, cedar posts set 16 feet apart, will last with very little repair for twenty years."

In the newer sections of the country, where a home-seeker must make his money go a long way, the experience of B. S. Candee of Washington State may help.

"The popular fence here," says Mr. Candee, "is still the old barbed-wire fence, and I believe it will be for a long time. The barbed-wire fence is the only low-priced fence that will hold cattle. Split posts for the ordinary fencing average 10 to 12 cents here, labor is \$2.25 to \$2.50 per day, and the wire costs about the same as in other places.

"Orchard districts have made a special feature of fencing to promote the appearance of the tracts. The most common style is a low 4-wire fence with 4x6-inch posts painted. The posts are set about 12 feet apart. This makes a neat-appearing fence which will turn

stock straying along the road. Straight, smooth wire is chiefly used, but some fences are made with a wire having a wavy appearance. This is a harder process with a spring coil resistance and makes a neat appearance when kept tight."

Mr. Edward R. Minns of New York State sums up his wire-fence experiences in three short statements as follows:

"For our rolling land, where we have to fence up hill and down, we find it best to use a pattern of woven-wire fencing that will allow stretching over uneven ground. During the last three years we have made fence of all No. 9 galvanized steel wire. It is more economical to buy the ready-woven wire fence instead of the kind that has to be set up on the ground."

Following is the fence experience of Roy Coleman, an Illinois farmer:



Showing the Western Union twist

"I was driving across the country a short time ago and came across some men who were constructing a fence. They set good strong cedar posts one rod apart and well down in the ground. Woven wire 40 inches wide was then stretched along the posts and a heavy barbed wire put on top. This fence was stretched very tight and every horizontal wire was stapled to every post.

"I have several fields of my farm fenced in this way, have turned all kinds of stock against it, and never have had a breach. In fact, I consider such a fence ideal when the woven wire is good and heavy and well galvanized.

"I asked this farmer whether he considered such fencing profitable. He replied quickly that he did, and that he had gone without good fencing long enough. He claimed to have lost enough money the year before from damage to

his corn to have paid one half the construction cost. His pasture had also dried up, and by not having other fields fenced he was forced to feed his cattle when they might have been on pasture if his farm had been well fenced.

"Neighbor reader, did you ever get up early in the morning, in the late fall, and go out to gather some corn and find a bunch of shotes in the field? I have had just such experiences, and the only effective way is to fence them out. Once you awake to these facts you will be a fence builder also."

Prices for fencing fluctuate more than one would expect for a class of goods so similar in appearance. Unfortunately the quality is hard to test without actual use, and a good policy is to deal only with responsible firms. Sheep and hog fencing made up of woven wire, with barbed wire above (making a total height of 4 feet), comes to a total of from 20 to 75 cents a rod, not counting posts. General farm fence of all-woven wire 5 feet high costs from 33 cents to \$1.25 a rod. Roughly speaking, medium-grade fencing costs about 50 cents a rod, including posts; and high-grade fencing, \$1 a rod.

The Way to Stop Lightning Damage

Poultry wire, 2-inch mesh, costs from 3¼ to 8 cents a square yard, and the 1-inch mesh is about twice as expensive. Barbed wire costs from 2 to 5 cents a rod.

Remember to "ground" fence wires to keep lightning bolts from ruining your fences and killing live stock. Simply take a piece of galvanized wire, staple it to every fifth post so that it touches every horizontal strand of wire, and extend it into the ground to moist soil. Three feet deep is usually enough.

On woven-wire fences the lightning conductors need be only pieces of heavy galvanized wire attached to the bottom of the fence, and extending into moist ground. Fences having metal posts do not need to be wired in this way, as they themselves are conductors.

South Carolina Again Secedes

Palmetto State Withdraws from Union of States Over Which King Cotton Rules

By Allan Nicholson

SOUTH CAROLINA has again seceded from the Union. But this time it is from the Union of the Southern States over which King Cotton has had such despotic rule.

A new "ordinance of secession" was passed by the General Assembly of South Carolina sitting in extraordinary session at Columbia, the state capital, in October, 1914, and in signing it so that it would become law Governor Coleman Livingston Blease added as a footnote, as if in answer to certain mild arguments that had been used in opposing it:

"Constitution or not, we will try it.—Cole."

South Carolina's action in taking a definite stand to reduce cotton production makes it occupy a unique and prominent position in the eyes of the world, for no other State has dared to do likewise.

Only One Third of Crops Can be Cotton

Under the act passed by the South Carolina legislature it is forbidden for anyone to plant more than one third of his land to cotton, the remaining two thirds to be sown in grain and other crops, such as corn, hay, and vegetables. This act was passed for the twofold purpose of very materially reducing the production of cotton during 1915 (because of the very large crop in 1914 and because of the effects of the European war in depressing business, thereby causing great reduction in price of the fleecy staple, which fell from 14 cents the latter part of July to 6½ cents per pound within three months thereafter) and of requiring the people of the State to make provision for raising all supplies needed for use at home, instead of buying them from merchants who have been getting them from other States.

Coincident with the introduction and passage of this cotton-acreage reduction law there was begun an

enthusiastic state-wide campaign under the direction of the state commissioner of agriculture and the State Farm Extension Work, the slogan being, "Raise Supplies and Live at Home."

This is the Law

During the past three or four years South Carolina has made remarkable strides in the sowing of winter cover crops. In 1910 it was estimated that there were only about 50,000 acres in the entire State thus sown to prevent the lands from washing, to be turned under as green manure or to be used as forage. In 1913 half a million acres were thus sown, and it is stated on authority that before the end of 1914 there will be over one million acres so handled.

What have already proved great factors in turning the attention of farmers from growing cotton exclusively to the diversification of crops are the boys' corn clubs and the girls' tomato clubs, the latter organizations particularly being a source of pride in South Carolina. The first club of the kind was organized at Aiken, South Carolina, from which the movement has spread rapidly over the whole country.

Because of the almost universal interest in South Carolina's action in seceding from the Union of King Cotton's rule, the law as enacted by the Palmetto State, and approved by Governor Blease on October 30, 1914, is given below in full.

SECTION 1. Be it enacted by the General Assembly of the State of South Carolina: That it shall be unlawful for any person, by himself, his agents, or employees, to plant or cultivate in this State in any year a greater number of acres of land in cotton than one third of the total acreage of land planted and cultivated in all crops by such persons in said year, including grain and fall-sown crops planted the preceding fall or winter.

SEC. 2. That any person violating the provisions of this act shall forfeit as a penalty a sum of not less than \$25 nor more than \$100 for each and every acre planted or cultivated in excess of the number herein allowed, to be recovered in any court of competent jurisdiction in an action or proceeding brought in the name of the State; and said penalty, when recovered, shall be paid over to the county treasurer for the use of the county in which the offense was committed. Said penalty and the cost of the proceeding in which the same is recovered shall be in lien upon all the cotton crop of the person adjudged to pay the same, subject only to liens existing prior to the passage of this act and lien for taxes.

Plenty of Prosecutors Provided

Provided, That the judgment for said penalty and cost be entered and enrolled in the office of the clerk of court of general sessions and common pleas as other judgments are now allowed to be entered or enrolled where the recovery is had in such court, and when so entered shall constitute a lien on all the property of the person adjudged to pay the same; and *provided further,* That where the recovery is had in the magistrate court the judgment be entered and enrolled with the same effect in the office of the clerk of general sessions and common pleas as judgments of magistrates' courts are now allowed to be entered and enrolled in said office.

SEC. 3. That the sheriffs, sheriffs' deputies, magistrates, constables, and rural policemen shall be charged with the duty of inspection, the production of evidence, and the prosecution of violations of this act, and the solicitors are especially charged with the enforcement hereof.

SEC. 4. The word "person" used in this act shall be held to include partnerships, voluntary associations, and corporations.

SEC. 5. This act shall go into effect immediately upon its approval.

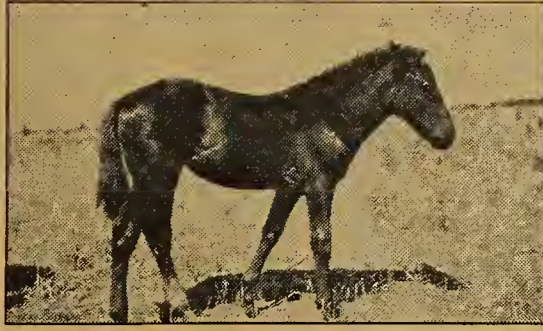
The Happy Adventures of Man

Life—and Death

And Some Unhappy Ones Too

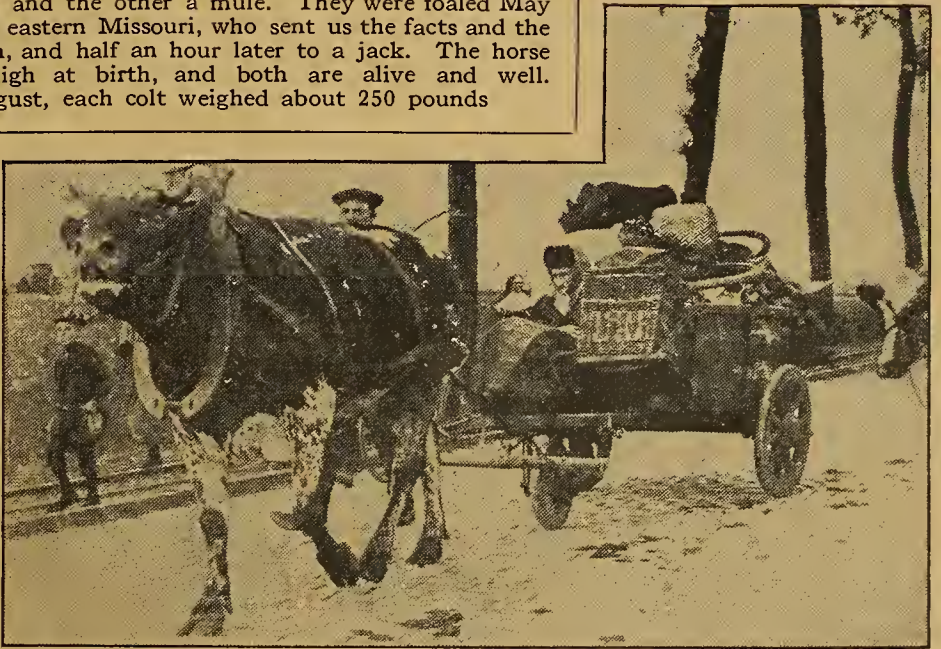


THIS wheat, now ready for shipment, was grown in the semi-arid region of South Australia, where dry farming was carried on successfully before it was generally recognized as a science in America. One man has done wonders for Australia—adding more to the productiveness of the soil than any other—William Lowrie, present director of agriculture, who went out to Australia from Scotland in 1895. Under his leadership the soil has been analyzed and treated scientifically, machinery specially adapted to the peculiar difficulties has been introduced, and the Government has taken a practical interest in the farmers' problems. The result has been an increase of millions of bushels in the wheat crop. Some of these methods will be given in more detail later.



THE gardener in this picture is Miss Christina Gordon, pioneer, who has farmed and run a trading post for thirteen years. This produce is from her vegetable garden, which is near Fort McMurray, Alberta, 600 miles north of the northern boundary of Montana. Miss Gordon speaks three Indian dialects, as well as French, English, and Gaelic. During all her life at this far northern point she has never turned away a white man or an Indian hungry. She is a person of great influence in the district. Among the garden products here displayed are parsnips, cabbage, cauliflower, and other vegetables common in more southern climes. This picture was taken late in October. Earlier in the season, radishes and lettuce might have been shown.

HERE is a mare and her twin colts—one a horse and the other a mule. They were foaled May 13, 1914, and are owned by Ernest Ogden of eastern Missouri, who sent us the facts and the photographs. Mr. Ogden bred the mare to a stallion, and half an hour later to a jack. The horse colt was born first. Both measured 32 inches high at birth, and both are alive and well. When these pictures were taken in early August, each colt weighed about 250 pounds



Horses and men in hand-to-hand combat in the war. Here are the bodies of several Zouaves and Germans and their mounts photographed on the field of action after a fierce engagement on the Bary Road in France

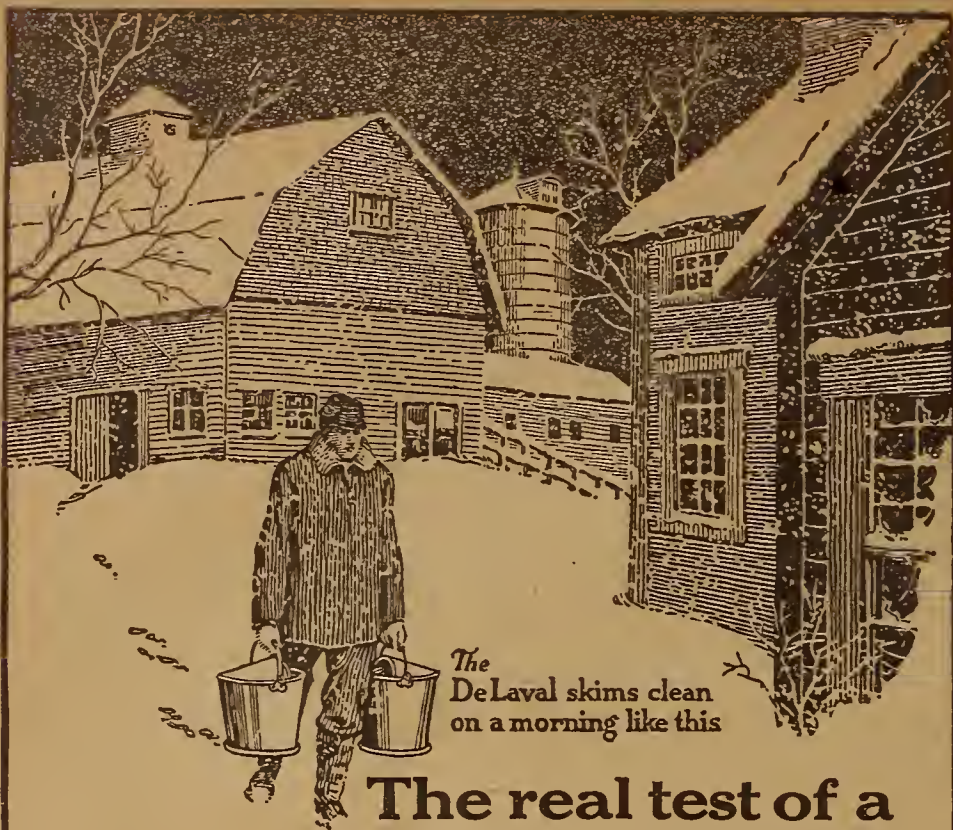
This photograph was taken in Belgium, the saddest country in the world. It shows refugees fleeing from Alost in an ox-drawn cart. These poor people have taken to the road, with no special destination in view



British troops in the trenches, showing how hard and dirty modern warfare is

A bomb-proof shelter used by the Belgians showing how men fight each other without even seeing each other. Individual soldiers say that there is very little thrill or pleasure in modern warfare

A crippled Belgian soldier. Injured men are like emptied cartridges to the armies



The DeLaval skims clean on a morning like this

The real test of a cream separator

SKIMMING cold milk, or milk from stripper cows, or both, is the real test of a cream separator. If your separator is small, necessitating a long run, it's still harder to skim clean in cold weather.

The De Laval is the only cream separator that can be depended upon to do good work under such conditions.

That is largely because of the exclusive patented "split wing" feeding device in the De Laval bowl.

This delivers the incoming milk into the separating bowl between the discs beyond the cream wall so that there is no remixing of the cream

with whole milk, as in the bowls of all other separators.

For this reason the De Laval will skim clean under the very hardest conditions, whereas other machines which may do fairly good skimming under favorable summer conditions are the worst kind of "cream thieves" in winter.

A De Laval catalog, to be had for the asking, will explain fully why the De Laval can be relied upon to do good work under any or all conditions, or the local De Laval agent will be glad to explain to you this and other reasons for De Laval superiority.

The De Laval Separator Co., 165 Broadway, New York
29 E. Madison St., Chicago
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

The Deadly Sheep Parasite

Simple Remedies Will Check the All-too-Frequent Ravages

When the "worm" is on the fodder, There is danger for the flock.

NEXT to dogs the sheep keeper dreads more than anything else the parasite that destroys the thrift of his flock, even though death does not claim any of his sheep. The dog he can sometimes shoot, trap, or bar out, but the insidious internal parasite must be attacked by subtler means.

To the experienced sheep owner the gasoline and turpentine remedies are not new. Probably these simple treatments for internal parasites in sheep are now used more than at any time in the past.

The experience of Mr. G. A. Randall, Michigan owner of a small flock, is here given, however, for the value his experience may be to others:

For two seasons on our new-land farm we experienced the loss of a number of nice ewes each spring. Their feed was varied, of liberal quantity, and dry, protected quarters were afforded. Finally a veterinary had to be called from a distance, and after a thorough diagnosis he pronounced it parasite of the bowels. A certain remedy he left was strong with gasoline. This medicine proved effectual, and the sheep treated were soon all right again.

Last season seven ewes with lamb again had similar symptoms early in the spring, but during the meantime this veterinarian had moved away and the medicine he left had been used. As no other veterinarian was near I took the chances as a last resort and gave each sick ewe one ounce of gasoline to which we added a teaspoonful of turpentine. This was given as a drench in warm milk from a drench bottle. Full doses were given morning and night and continued two days, at the expiration of which time every sick ewe had recovered.

Since then two different neighbors having sick sheep similar to my own have cured their sheep by this method. So far as I know it has proved infallible.

We began to wonder, as soon as Mr. Randall's letter came, if the cure was really an "infallible" one. At once we wrote to several other experienced sheepmen. Of course we asked Mr. J. P. Ross for his experience. This is what he said:

Turpentine has long been used for stomach worms, and if used early enough has often proved effective. Gasoline is a more modern treatment, and much more to be relied on; but it must be administered slowly and carefully, as many a sheep has been choked by its too rapid administration.

I have never known of both of them being given together, though I can see no harm in such practice.

The warm milk suggestion given by Mr. Randall is a good one.

I should hardly feel safe, however, in applying the term "infallible" to it, or in fact to any remedy in cases where intestinal worms have become well established. Still I consider Mr. Randall's experience valuable. Great care should be used in administering these remedies. I believe a full ounce is rather a large dose for even an adult sheep.

Mr. Paul Brown of South Dakota has had wide experience with sheep, and so we were interested in seeing what he had to say:

I feel pretty sure Mr. Randall's flock was infected with stomach worms, *Haemonchus contortus*, and not "parasite of the bowels." I suppose he means the nodular disease known to the butcher as "knotty guts," caused by the small worm about an inch long.

His doses of gasoline were rather larger than are usually given, but as no bad results were obtained I suppose it would be all right. The dose which is most generally prescribed is one-half ounce of gasoline for mature sheep, one-fourth ounce for lambs, mixed in either milk or raw linseed oil, never in water. Each dose is mixed separately for each sheep.

The evening before the flock is to be treated they should be confined in a pen without feed or water and held there till about ten the next morning, then drenched and left in pen till about one o'clock; allowed feed and water till evening, and the treatment repeated the same on second and third days, making three treatments twenty-four hours apart, each one on a comparatively empty stomach instead of the four treatments on a full stomach.

But as Mr. Randall got the results he wished without fatality, possibly his treatment is as good and just as practical as the one most in vogue.

The disease may be held in check by this treatment, but no flock can be entirely and certainly rid of this parasitic trouble in this way. However, a flock can be effectually and permanently rid of these two parasitic troubles by proper management of ewes, lambs, and pastures for a period of two years.

Of course the matter of getting permanent results is important, but probably Mr. Randall was anxious for immediate results even if not permanent. The following statement comes from Frank Kleinheinz of Wisconsin. Mr. Kleinheinz has had much experience in fitting sheep for show purposes as well as in feeding and caring for the regular farm flock.

I know from actual practical experience during many years that gasoline and turpentine are both very effective in destroying parasites in sheep, but I have never before heard of using the two combined.

I would say this much, that if Mr. Randall had not been careful in drenching the sheep with this mixture, and some of it had gone in the wrong direction and got into the sheep's lungs, it would have killed them instantly, as the two together would have been too strong.

I have tried the two remedies, gasoline and turpentine separately, and at this time I recommend gasoline.

When a full dose of turpentine, as much as we use of gasoline, is given to sheep or lambs, some of them act very funny and almost scare a man shortly after the dose is given. They jump up in the air and stagger about like a drunken man, which is not the case at all when gasoline is used.

The dose which I have been successfully giving for many years is as follows: Five ounces of whole milk; for an old sheep one and one-half tablespoonfuls of gasoline (for a lamb only one tablespoonful of gasoline), and one tablespoonful of raw linseed oil. This well shaken together and given to the sheep as a drench, as above stated, three mornings in succession on an empty stomach, and then one more dose after eight or ten days, has cured for me every sheep that was infested with internal parasites.

I am saying all this even though it is still a question in my mind whether or not Mr. Randall's sheep were really infested with internal parasites.

BOOK ON
DOG DISEASES
And How to Feed
Mailed free to any address by
the Author
H. CLAY GLOVER, V. S.
118 West 31st Street, New York

America's
Pioneer
Dog Remedies

THE NAIL YOU NEED
to hold your horse shoes is "The Capewell."
Safe—being free from all tendency to split or crimp in driving and thus injure the horse.
Economical—holding shoes until worn out, or the growth of the hoof necessitates reshoeing. These are two points of advantage—there are many others. It pays to insist upon the use of "Capewell" nails.

Best in the world at a fair price—not cheapest regardless of quality.

This Checked Head our Trade Mark

Horses & Mules
increase in value
when
Clipped

Not only in selling price but in working value. You don't go at the spring work with your winter clothes on—then why expect the horse to do so—he feels the warm weather just as much as you do. Clip off his heavy coat that holds the wet sweat and dirt. It will give him new life and energy. He'll rest better, feel better, work better and repay you many times for the little it requires to clip him. Pays also to clip the udders and flanks of your cows—prevents dirt from dropping into the milk. The best and most generally used clipper is the

Stewart Ball Clipping Machine

Insist on having the Stewart, the machine that turns easier, clips faster and closer and stays sharp longer than any other. Gears are all cut from solid steel bar. They are enclosed, protected and run in oil, little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head. Highest grade. Price only \$750. Get one from your dealer or send \$2.00 and we'll ship C. O. D. for balance. Money and transportation charges back if not satisfied.

CHICAGO FLEXIBLE SHAFT CO., 134 N. LaSalle Street, Chicago, Ill.
Write for complete new catalog of horse clipping and sheep shearing machines. Mailed free.

PRICE \$750

This Machine Will Clip Horses, Mules or Cows

EASY ACTION—HIGH SPEED

Don't Ruin A Good Horse To Save A Few Cents

Look at the sore on that horse's shoulder! How can you expect the horse to do a full day's work? A few cents will cure him or prevent these sores. You need

HORSE COLLAR PADS
TAPATCO
REGISTERED BRAND TRADE MARK

Keep Your Horses At Highest Working Power
Made from start to finish right in our own immense factory. Filled with our own Special Composite Stuffing. Light, soft, springy and very absorbent. No dirt, no trash, no short cheap limy hair with hide attached to attract rats and mice. Put TAPATCO Pads on your horses when you take them out in the Spring and you'll have no trouble from galled shoulders or necks.

Ask Your Dealer **PADS FOR HORSES** Ask Your Dealer
The American Pad & Textile Co., Greenfield, Ohio

Fits Any Collar

How to Make Use of the Mule

IF YOU have never owned a mule, or if you have never worked one for a reasonable length of time, you do not know how good a friend he may be to you.

A mule has experiences like a man. One bad trait blinds the eyes of his associates to the good he does every day.

That, perhaps, explains why we hear

so much evil about mules and so little good.

But the mule isn't to blame.

In the next issue will appear an article of experiences which will tell why—it will tell more than that, it will tell us how to raise the best market mules, and also how to use the mules on our farms.

Old Sows vs. Young Ones—By G. B. Hill

SOME farmers dispose of their sows after the first or second breeding, but I believe it is a better practice to keep them, once you get good ones, until they are too old to produce at all.

Consider how rarely an animal is found that is first-class for breeding in every respect. She must, first of all, be capable of regularly producing large litters of live and healthy pigs. She must not only be prolific, but be a good mother, with all her teats well developed and a good flow of milk, interested in her pigs, and capable of looking after them. There is not much use of a large litter if the sow loses half of them by poor nourishment, chill, or her own clumsiness in crowding them or stepping on them.

Lastly, she should be of good disposition, placid and tractable, for the fretful, restless, or surly sow is not only twice the trouble to look after, but her pigs

are much more likely to be injured by her.

When you have an animal that answers to all those specifications you have one that is worth keeping. If in addition she comes of good stock, so much the more reason for retaining her. And still another point—the mature sow, as a rule, produces her pigs with much less difficulty and risk than the one having her first litter.

While aged sows are almost unsalable, I believe the advantage of having dependable breeders more than offsets the loss of the greater sum they would have brought if sold younger.

A pointer for the man who raises both fall and spring pigs: after the third litter it is a good plan to let the sow go a whole year before the next breeding, as few can produce strong litters every time, under the strain of continuous production.



Maxwell

Every Road is a Maxwell Road

The \$695, "1915" Maxwell is a year-round car. Maxwell owners do not put their cars in dead storage during the winter months. Snow, slush, or mud never close roads against the powerful light-weight Maxwell "Wonder Car." It is an all-weather car.

The Maxwell is one of the greatest hill climbing cars in the world. Its wonderfully flexible motor, which may be throttled down to 4 miles an hour on high gear, and quickly picked up to 50 miles an hour, makes it the ideal car for use on rough roads or in traffic.

Holds the Road at 50 Miles an Hour

Although the price of the "1915" Maxwell has been reduced to \$695, seventeen new features have been added.

Especially notable is the adjustable front seat, which may be moved forward or backward three inches to suit the leg length of the driver. This is an improvement not found in any other automobile irrespective of price. It is typical of the advanced design of the Maxwell car.

The double shell radiator of the Maxwell is equipped with a shock-absorbing device. This relieves it of jolts and jars, and makes the Maxwell famous for its freedom from radiator leaks.

The other fifteen new features show that the Maxwell is a thoroughly up-to-date car, containing the highest-grade improvements.

The Maxwell Dealer nearest you will show you the "1915" Maxwell

Maxwell Five-Passenger Touring Car,	\$695.	In Canada,	\$ 925.
Maxwell Roadster	- - - -	670.	In Canada, 900.
Maxwell Cabriolet	- - - -	840.	In Canada, 1,105.

Any model equipped with electric self-starter, \$55 extra. In Canada, \$70 extra.

Write for beautiful 1915 Maxwell Catalogue. Address Dept. AG

MAXWELL MOTOR COMPANY, Inc., Detroit, Michigan

The Maxwell will be exhibited at the Panama-Pacific Exposition



The Lowest Priced High-Grade Car in the World

Lowest Prices Ever Made On World's Best Roofing

Lightning-Proof, Fire-Proof, Rust-Proof—Lasts as long as Building Stands

Your roofing expense will cease when once you have laid Edwards Tightcote Galvanized Steel Roofing. Cost per square lowest ever made. No upkeep cost. Always beautiful in appearance. Reduces cost of fire insurance.

EDWARDS Exclusive Tightcote Process

Makes Edwards Metal Shingle, Metal Spanish Tile, Edwards Reo Steel Shingle, Grip-Lock Roofing, Pressed Standing Seam, or Roll Roofing, Ceiling, Siding, etc., absolutely rust-proof. Not space of a pin-point exposed to weather.

HOW TO TEST GALVANIZING

Take any other galvanized steel, bend it back and forth several times, hammer it down each time. You will be able to flake off great scales of galvanizing with your fingernail. Apply this test to Edwards Tightcote Galvanized Steel Roofing—you'll find no flaking.

Interlocking Device

Prevents Warping, Buckling or Breaking. Protects Nail Holes through under layer not exposed to weather. No special tools or experience needed to lay—anyone can do the work—lay over old shingles if you wish.

GARAGE \$69.50

Lowest price ever made on Ready-Made Fire-Proof Steel Garages. Set up in any place. Postal brings 64-page free catalog. Size: 10 feet wide, 14 feet long.

Reo Steel Shingles

Outwear 3 Ordinary Roofs. No matter what kind of a building you have in mind there is a style EDWARDS Tightcote Galvanized Steel Roofing exactly suited to your needs.

Freight Prepaid

Lowest Factory Prices. Greatest roofing proposition ever made. We sell direct to you and save you all in-between dealers' profits. We cannot quote prices here but if you will send for our

FREE Roofing Book

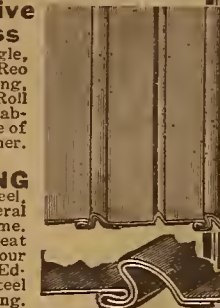
It will prove to you that our prices are lowest ever made for World's Best Roofing. Postal brings Free Samples, Prices and Roofing Book No. 258.

The Edwards Manufacturing Co.,

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We Are the Largest Makers of Sheet Metal Products in the World

Reo Steel Cluster Shingles



Edwards Patent "Grip-Lock" nails are driven

Garage \$69.50



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How We Paid for Our Auto

The Story of a South Dakota Boy of Nineteen

By M. L. Merry

I AM a boy of nineteen, living with my parents on a ranch in South Dakota, and have one sister, who is twenty-three and a school teacher.

The whole family, and I in particular, have been wishing for a car, but some way each fall, after the bills were paid and the necessary purchases made, the surplus left for the car was several times too small.

We milked twelve cows and sold our cream, but that money was needed to keep up the expenses. Mother had 200 hens, and the egg money went for "eats," and Mother needed the money from the young chicks and turkeys for clothing.

Sis taught a rural school, and did as well as most teachers usually do: bought her clothes, paid monthly on the piano which she had bought on the instalment plan, and took her annual trip to summer school.

After these bills were all paid the amount left was small, although since the automobile had stung her she had managed to save \$180.

The Auto Fever Went Up by Degrees

I worked on the farm, Father buying my clothes and giving me what spending money he thought I needed. On Sunday I drove a pair of broncos hitched to a covered buggy with a crippled wheel.

A year ago last winter the fever in the family went up several degrees, and we had many discussions as to ways and means for raising the desired amount. After much talk it was decided that pure-bred swine were the quickest money-crop.

Father said he was very sure he could furnish feed for all the pedigreed stuff we could buy. I knew I could do the work. Sister agreed to furnish the capital, and Mother, in order to have her finger in the pie, said she'd keep the books.

Early in April Sis drew out one hundred and fifty of her dollars, and father drove to a noted hog farm in an adjoin-

ing county and purchased ten registered Duroc sows, six weeks old, paying \$10 apiece. A few weeks later he bought a two-months-old boar for \$50. We named him Tom.

They were a pretty bunch of little red pigs, and we were justly proud of them. Even Sis would saunter down on an average of twice a day to look at them.

We fed them ground feed in the form of a swill until the oats we planted for pasture were large enough, and then swill only once a day. Later on we had an alfalfa pasture which lasted until the corn was ready, and that we let them harvest themselves. Our greatest trouble was that we had to watch them lest they grow too fat.

They Were Good Pigs Too

Tom, the pride of the pen, was a grandson of one of South Dakota's heavy-weights, and from a litter of thirteen, thus having both quantity and size, and was, we learned, well worth the money paid, which seemed exorbitant at the time. He took first money at two county fairs for two successive years, and we made quite a little off him from outside work. But all these extra dollars were needed to buy netting, fix the hoghouse, and the like.

We raised all the hogs but one. She got caught in the fence while escaping into a neighbor's garden and died before we found her.

The next spring all of the sows became mothers. One farrowed, and raised ten perfect pigs; another only two, and the other seven varied from three to seven. At weaning time we had 54 young pigs.

The neighbors came to see them, and seldom left without leaving an order for from one to three. We decided on a uniform price: \$10 at weaning time and \$1 for each additional week we kept them; also, our sales were to be for cash.

Our Sales Increased at Threshing Time

At first the pigs went slowly enough to be discouraging, but as threshing came on and the farmers got money they went fast, especially on rainy days when the ranchers couldn't thresh.

By September 15th we had sold 39, and while Tom was on exhibition at a county fair we were offered \$100 for him, which we accepted.

The total was at this time a little short of the required amount, but one Saturday morning two men came and took away five.

It was a happy day in our family. Father and I drove to town immediately after dinner, and I ran out the long-wished-for machine. We all took a holiday for a week and enjoyed it.

We have our nine original sows, eight sows of the spring farrow and their October litters. We shall keep them, as we realize that the purchase of a car is only the first cost.

I have told our story simply, without exaggeration, hoping that some boy may profit by it.

DR. HARVEY W. WILEY of pure-food fame has joined the Holstein-Friesian Association. He has 30 high-grade Holsteins on his Virginia farm, and milks them by machine.

Gas Engine Honesty

By James A. King

In the January 16th issue of Farm and Fireside, Mr. King gave some answers to the question, "What kind of a gasoline engine shall I buy?" Here he takes up other questions which come naturally to anyone planning to use power economically on the farm.

AFTER one has decided what sized engine to buy he naturally asks himself the question: "What particular engine shall I buy?" He wonders whether it should be a gasoline or a kerosene engine, air-cooled or water-cooled, horizontally or perpendicularly mounted: what make it shall be or by whom manufactured.

In the natural-gas fields, of course the thing to buy is a gas engine if one has free or exceedingly cheap gas. But this condition so seldom exists, when one considers the great bulk of farm engines used, that the question in this discussion naturally simmers itself down to a comparison of gasoline and kerosene.

Personally I favor a good make of kerosene engine. That favoritism is based on these few simple facts: When working constantly at about one half its maximum capacity, or more, a well-designed kerosene engine should do its work on little if any more fuel than would be required by an equally good gasoline engine. Some of them even will successfully carry any load from no load to full load on kerosene alone, under any

weather conditions, after having been started and warmed up on gasoline. Practically everywhere kerosene is cheaper than gasoline. If one's engine is working on a constantly and widely varying load and refuses to burn kerosene satisfactorily, where an operator cannot be in constant attendance, it will burn gasoline almost as economically as will the one-fuel gasoline engine. But an ordinary gasoline engine will not burn kerosene anywhere near as successfully, or under so wide a range of weather and load conditions, as will a genuine kerosene engine. This opinion I am basing upon several years of experience. I recognize that there are arguments on the other side. Every man should study both sides of the question carefully. [Have you had experience? What do you say?—EDITOR.]

In general I prefer a water- or an oil-cooled engine to one that is air-cooled. I know that certain manufacturers claim that their air-cooled engines will cool just as successfully under all conditions as will any water- or oil-cooled engines. I know that one manufacturer of air-cooled automobiles lays great stress on a hundred-mile run made on low gear; but those runs were not made in July or August.

There are certain conditions which make perpendicularly mounted engines preferable to those horizontally mounted. They require shorter trucks and less floor space for an engine of a certain size and speed. Since the power stroke is down instead of horizontal there is less oscillation when the engine is running. A more mechanically correct base can be used and, all other things being equal, lighter weight construction can be used and still give the required strength and durability.

Reliable Engines Come From Reliable Firms

A discussion of what particular make of engine to buy is a good deal like arguing whether or not a Poland China is a better hog than a Berkshire. And yet there are certain fundamental factors which should be considered seriously.

In the first place, get one that is made by a firm that is reliable—a firm which has the reputation of using good, honest materials and putting competent and skilled workmanship into the things which they manufacture. Get an engine that is built by companies and sold by dealers that are square and honorable in their dealings with their customers and who are in a condition to render quick and effective service when repairs or help are needed. Get an engine that has proven its quality by several years of good service and durability; let some other fellow do the experimenting. Do not buy any engine which both the maker and the seller will not back up to the last ditch with a broad, generous guarantee, plain and explicit in its statements.

If you buy anything less you are pretty sure to have bought a gold brick and to be sick of your bargain sooner or later. While it is all too true that some makes of most everything cost more than they are worth, yet it is even more true in general that those things which cost the least in the first place are generally the most expensive of all in the long run. These same general principles apply to practically everything we buy.

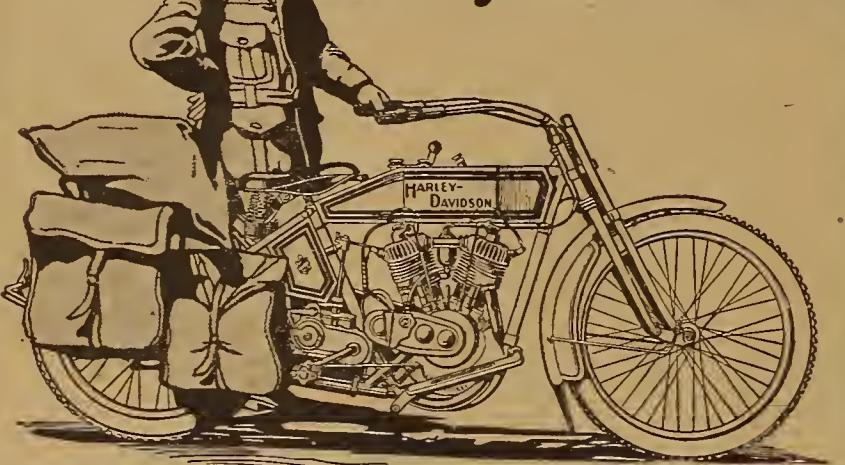
Do You Play Checkers?

WE'RE going to give everyone a chance to get into a checker game. Perhaps you've never played checkers by mail and with a stranger. We have, and know the sport in it.

Each player has a board numbered in the same way. You give your moves by number and send them by an ordinary post card. Your opponent does the same. It takes about 40 moves on a side for two good players to finish a game of checkers. By mail, this takes nearly four months.

To get into this checker competition, send your name to the Contest Editor of FARM AND FIRESIDE, who will give you an opponent. A checker championship series will be arranged and suitable prizes offered if enough are interested. FARM AND FIRESIDE will act as referee. Players will be required to furnish their own checker men, boards, and post cards. Otherwise it is all free and open to everyone. Contestants will receive full particulars and instructions for playing.

Uncle Sam Uses 5000 Harley-Davidsons



THERE are today over 5000 Harley-Davidson motorcycles in the service of Uncle Sam making good delivering mail daily on his RFD routes. There could scarcely be a more thorough test of reliability. They must travel over country roads, through mud, sand and sleet on schedule time practically all the year round.

That the Harley-Davidson has made good in this test is proven by the fact that now each year nearly one thousand new Harley-Davidsons are being added to those already in the service.

The gear ratio of the three speeds is just right to cover all kinds of going, without overheating. A unique locking device absolutely prevents clashing or stripping of gears. The

brakes are sufficiently large and powerful to handle the motorcycle and sidecar even if both are overloaded.

The 98 improvements and refinements as well as Double Clutch Control, Full-Floteing Seat and many other features of the 1915 Harley-Davidson are fully described in our 1915 catalog which can be obtained of any Harley-Davidson dealer or sent on request.

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“La Vision” This striped Crepe Ratine blouse will be shown only in our February advertisement! Long sleeves, with embroidered Organdy cuffs. Organdy collar with a plaited frill. Vestee of embroidered Organdy. Front closing with crocheted buttons. White, striped in light blue and black, or white, striped in pink and black. Sizes 32 to 46 inches bust. State color and size. No. 24A5314 85c Waist, Prepaid 49c

The Sand Blouse Sand color is being used more and more. This waist is of Sand colored Voile with two rows of Filet lace insertion at sides and embroidered vestee, edged with a ruffle of lace. Three-quarter length sleeves with cuffs of Organdy. Roll collar of embroidered Organdy. Front closing with fancy buttons. Sand color, also all white. Sizes, 32 to 44 in. bust. State color and size. No. 24A5317 \$2.00 Waist, Prepaid 93c

The Tommy Atkins Military hat of Silk Braid with feather of curled Ostrich, surmounted by hair aigrette. Two hands of plaited silk at left side, which do not show in illustration. Colors: Black with white pompon; Army Blue, Brown or Sand color, with pompon to match, or All Black. State color. No. 16A5318 Prepaid \$1.48

The Pierrette Decidedly new Collar and Cuff set of white Organdy, hemstitched in black. Both collar and cuffs are plaited. White only. Fits any size neck. No. 21A5319. 35c Value, Prepaid 21c

The Dresden This Figured Silk Dress is our “February Special.” The waist is designed with shoulder yoke and shirred at waistline over a broad girde of Messaline Silk in contrasting color. Dainty vestee, boned collar and ruffles on elbow length sleeves of sheer hemstitched white Organdy. New shirred skirt finished with deep tuck, simulating fold. Copenhagen blue with Rose girde; Navy Blue with American Beauty girde; Putty with Copenhagen girde. Sizes: Misses, 14, 16, 18 and 20 years. State color and size. No. 24A5313. \$7.00 Dress, Prepaid \$3.98

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When the Hatching Egg Travels

By B. F. W. Thorpe

THE hatching egg is a notoriously poor traveler. The ups and downs, jolts and jars, of a journey makes life a burden to the all-important germ cells of hatching eggs. With half a chance, "germ spots" are good swimmers and will keep right side up in their nature-provided home—the yolk of the egg. But when hatching eggs get into the hands of those near relations of the baggage smasher—the express thrower and parcel-post pitcher—the poor "germ spots" have a sorry time of it.

What can we do about it? Our problem is to pack hatching eggs for shipping so as to overcome the shock and vibration incident to rough handling and long-continued journeys. Many expedients are employed to insure safe carriage, but the majority of experienced shippers of hatching eggs are a unit in favor of the old-fashioned splint basket and plenty of excelsior as a shock absorber.

The springiness of the splints eases off shock wonderfully in themselves. Then for packing and filling material a good quality of excelsior comes first and planer shavings second.

Each egg should be the center of a ball of excelsior so that when in position in the basket it has a complete wrapper of excelsior about it the size of a medium-sized teacup.

The splint basket is first lined—bottom, sides, and ends—with a layer of the excelsior, then the balls of excelsior-covered eggs are placed in the lined basket snugly, so that there will be no movement.

If the balls of excelsior containing the eggs are correctly made there will be no need for layers of packing material be-

Another reason why you may look for the next issue with eagerness! Mr. B. F. W. Thorpe, Farm and Fireside's poultry expert, has put together his ideas on raising chickens, under the heading: "Safety First for This Year's Chicks." It is a story of his experience and training which can be of definite value to any poultryman anywhere in this big country of ours. It will be printed in the National Farm Paper next issue.

tween the successive courses of eggs, but unless the excelsior egg covers are made right it is the part of safety to put layers of excelsior between courses.

When full the basket is topped with a generous layer of excelsior heaped up a couple of inches above the rim of the basket. A cover of burlap is then firmly sewed over the contents by working the needle (a long darning needle is best) back and forth through the holes between the rim splints. As the sewing proceeds, the burlap is drawn down snug and taut. When completed the basket is much the same as a rubber ball for springiness.

When the work has been done just right it is extremely difficult to break eggs thus packed, with any ordinary or even quite rough handling, and the liability of disturbing the germ spots and mingling the contents of the eggs will be greatly lessened.

The Bails Protect the Shipment

When larger shipments are to be sent, inexpensive splint bushel baskets are about as satisfactory as the splint vegetable basket, and will contain three or four settings if packed with excelsior as above recommended.

It is not difficult to fasten splint bail handles to bushel baskets before the eggs are packed, by means of small wrought nails that can be clinched, or with wires. Then, after packing the bails can be firmly tied together above the basket, whether bushel baskets or vegetable baskets are used. These bails when fastened above the basket prevent other packages being piled on the eggs during shipment.

For 100-egg shipments, or larger quantities, a barrel packed as described, but using even more of the excelsior and a burlap cover fastened over the top, answers better than boxes. The barrel will be handled more carefully by rolling and sliding, and will be kept right side up as a result of the burlap cover and conspicuous danger tag sewed onto the top.

The danger-tag signal like that shown in one of the photographs I find to be a great help in catching the eye of the egg handlers. The lettering on the placard ought to be about two inches tall and very black, so as to hit the eye hard before the package is thrown.

Personally I prefer to ship not over 50 or 60 eggs in one container, using splint baskets of proper size for the purpose.

There are new and very ingenious types of paper containers that have become quite popular with some egg shippers. There are scores of these of different kind to select from, but the principle is a good deal the same in most of them. A considerable number of these are safe so far as breakage is concerned, but the paper does not absorb shock like the basket and excelsior, since it lacks the springy quality.

These corrugated paper containers have the advantage of quicker packing, lightness, and are less bulky. It is only right to say, however, that the hatching-egg shippers of long experience are not yet weaned from their preference for the splint basket.

Hen on Eggs Travels 3,500 Miles

The plan of shipping the sitting hen and her eggs in the same container has been tried with a good degree of success in a few instances that have come to my attention. One of these was a shipment from Europe. A poultryman not wishing to assume the long-range risk of sending his exceptionally valuable eggs on a two weeks' ocean and rail journey unattended decided to get a dependable broody hen well settled down to work in a crate and ship the entire hatching outfit by express. This brooding-hen shipment reached New York with biddy snug on the job. The crate was transferred to an express car, and in a little less than two weeks reached its destination without an egg broken. Some days later a good hatch of vigorous chicks was the outcome of this experiment after a voyage of about 3,500 miles by land and water.

This plan, I believe, is a coming one for eggs of near-gold value. A crate with a hen in and on is a danger signal that counts.

Here, too, is an incident that elaborates the same idea worked out by Mrs. C. K. Turner of Kausas:

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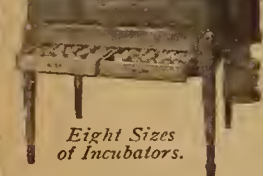
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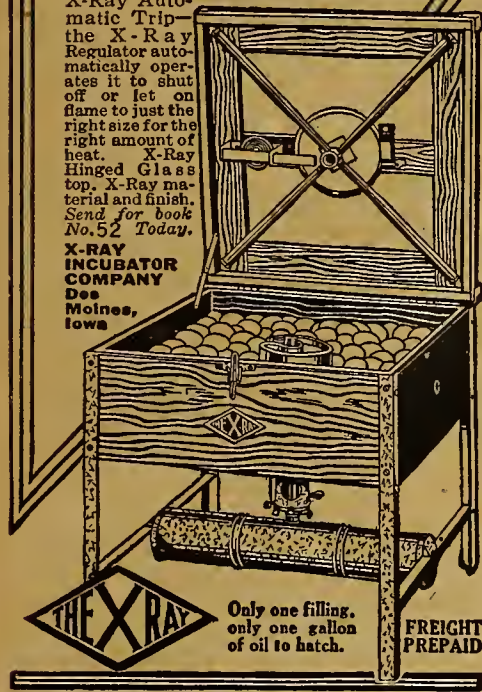
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already the 1st of March. Biddy wanted to set, and I was eager for early fries. So I decided to run the risk. She would likely hatch before moving day arrived, anyway. But husband returned from his quest sooner than I expected. A car was ordered and we were soon packing up.

"What are you going to do with that old sitting hen? Better give her to the Blakes, eggs and all," suggested the practical one. "No, I won't," said I. "What's to hinder her going right along in the car just as she is, box and all?"

That settled it. She was ensconced in one corner of the freight car where she would be safe from unnecessary jolts and disturbances. Feed and water were provided, and she was sent on her journey.

After a car ride of two days' duration and a four-mile trip to the country in a lumber wagon, Biddy reached her new home safe and sound, where she was allowed to rest in peace. This was on Thursday, and the following Monday she brought off a brood of fourteen strong, downy chicks, no worse for their varied moves. One egg had become cracked in transit.

So much for a trial experiment. Who says it interferes with the process of incubation to move and roll the eggs about?

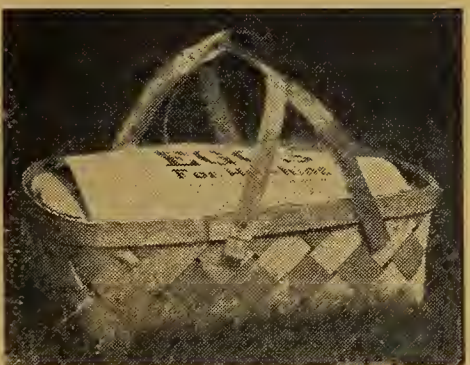
But safe traveling is not the only requirement for good hatches. The egg must be right when laid, and kept fit till the chick breaks out of it. The eggs



Excelsior should line the basket, and each egg should be separately wrapped

should not be over a week old when shipped. They should be laid in clean nests so that the shells will need no cleaning. Washing or scouring closes the shell pores and endangers the future existence of the chicks. If the natural germicidal coating over the shell of the egg is removed, there is a good chance of dangerous bacterial diseases gaining entrance.

During the period that eggs are held before shipment or before incubating, it is important that the eggs be kept cool and at a uniform temperature. Between 40 and 50 degrees Fahrenheit in a rather moist atmosphere will secure better and more vigorous chicks than a higher or lower temperature while the eggs are being held. It has also been found that if eggs are held for any length of time it is an advantage to bring them daily into a temperature of 70 to 80 degrees



See that the handles are tied together and the danger placard made very plain

Fahrenheit for a couple of hours. This takes the place of the daily warming up that the eggs receive under natural conditions when the hen stays for a time on the nest to lay.

It is important that the person handling hatching eggs should make sure his hands are free from grease or dirt, since even if there is no danger from disease germs from this source the pores of the eggs will be obstructed and the chick will suffer from lack of air supply before it is ready to leave the shell.

My Hen "Came Back"

By B. F. W. Thorpe

IT PAYS to doctor a hen—sometimes. Last June a Barred Rock hen of specially good breeding for eggs at from a can of kitchen garbage and soon developed a bad case of ptomaine-poisoning. The can was found to contain decaying meat, which without doubt caused the trouble.

This pullet up to that day had been in the pink of laying condition and had laid 172 eggs since beginning the previous November—but little over seven months.

The effect of the poison was immediately to reduce the hen to a nervous wreck so that she could only barely crawl around. All she was interested in was drink, drink, drink constantly.

The usual physic remedies used for digestive troubles, such as olive oil, castor oil, and Epsom salts, brought no relief.



The United States Rubber Co.'s New Vulcanizing Process Makes Rubber Footwear Give 50% More Wear

The average rubber boot has thirty-four pieces. Where the pieces join are the weak places in any boot. No matter how high the quality of the fabric and rubber compound from which a boot is made, it will not give really long wear unless the joints unite with strength.

The United States Rubber Company now owns a patented vulcanizing process. It consists of vulcanizing in an air-tight compartment. Into this compartment carbon dioxide gas is forced. Then a uniform heat and pressure are maintained for a certain length of time. The result is marvelous. The rubber compound is greatly toughened. Every place where pieces join is made as strong as though the boot was made of one piece.

Nearly all reliable dealers sell "U. S." Patent Pressure Process Heavy Service Rubber Footwear. If your dealer has none, write us, telling what kind of boots you wear, and we will see that you are supplied. Look for the seal—insist upon it.

United States Rubber Co., N. Y. City



Look for this Seal



on heavy Rubber Footwear



We Lived On a Poultry Income

Let Us Tell You How We Did It

THAT was before Old Trusty sales began to grow. Our success with chickens was our main argument in encouraging others to hatch chickens for profit. In our farming experience we proved by actual demonstration that the chickens can give you an income big enough to pay all your living expenses and more. We tell about it in the Old Trusty book. Let us send you this book and show you how you, too, can live on a poultry income and save the profits you make in other lines. Write for it today.

Old Trusty

Still Less Than \$10.00. Has 580,000 Users

Wednesday that you never heard of any other incubator with one-third as many users. We build Old Trusty so that you can get good big hatches in it any time, even in coldest winter—we give greatest value per dollar in price not only because of the good, reliable construction invented by M. M. Johnson, but because of the big factory output which lets us quote a price several dollars less than any other factory would have to ask. We send it on 30 to 90 days' trial and a 10 year guarantee.

Write Today for the Old Trusty Book

We'll not bound you for an order. That's not our style. All we ask is that you let us show you the way you can make more money out of your chickens than you ever have before. Then if you feel interested enough, you will use your own reason. Drop us a postal today for the book and see if we don't agree on the same idea.

M. M. Johnson Co., Clay Center, Nebr.

SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1915 has over 200 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 962 Freeport, Ill.

57 Varieties Chickens, Ducks, Geese and Turkeys. Hardy, northern raised. Fowls, eggs and incubators; low prices. Most successful farm; 18th year. Large fine catalog free. Larkin & Herzberg, Box 66, Mankato, Minn.

57 BREEDS Fine pure bred chickens, ducks, geese and turkeys. Northern raised, hardy and very beautiful. Fowls, eggs and incubators at low prices. America's greatest poultry farm. Send 4c for fine 100-page 21st Annual Poultry Book. R. F. NEUBERT CO., Box 829, MANKATO, MINN.

I'll Start You and keep You Going Right in the POULTRY Business

My World-famous high-quality incubators and brooders, and my 20 Free Poultry Lessons make success easy and sure for you! Lessons given FREE to every purchaser of a

SUCCESSFUL Incubator or Brooder

With the free advice and lessons I give my customers, no one can possibly fail to make biggest hatches of strongest chicks. Write me. A postal brings all facts, book, prices and proposition. "Proper Care and Feeding of Chicks, Ducks and Turkeys"—sent for 10 cents. Successful Grain Sprouters furnish green food, make hens lay in winter. Ask about my high grade poultry—all leading varieties.

J. S. Gilcrest, Pres. DES MOINES INCUBATOR CO. 61 Second St., Des Moines, Ia.

\$675 and up

\$7.25 Mankato Incubator

Only 7

You couldn't buy better at two or three times the price. California Redwood case, triple walls, asbestos lined, pure copper tank, silent automatic regulator, safety lamp, everything.

Free Book of Incubator Facts Free trial—strong money back guarantee. 120 chick brooder \$2.50; 240 chick brooder \$4.00—and up. Write for free book today. Mankato Incubator Co., Box 722, Mankato, Minn. only \$10.25

Comes set up—ready to use. 260 Egg

RADIO ROUND

Saves 80% Incubator Expense

Hatches on one filling, or one gallon oil, usually with oil to spare. Saves 80% over old style machines that use five gallons. Radio-Round needs less oil because it wastes no heat; needs less heat because it is round like a hen's nest—no cold corners. Center heater, lamp beneath, complete circuit radiators, automatically controlled flame.

SAVES TIME, DRUDGERY AND WORRY

Only three minutes care a day. Fill tank just once for hatch. Turn eggs without removing tray—no lifting. Eggs and thermometer always visible through double glass panels in cover. Strong but light—a 12-year-old can handle it. Will last a lifetime. Handsome, clean, fit for a parlor. New VAPORIZING MOISTURE ATTACHMENT means bigger hatches and stronger chicks—fewer chicks dead in shell. Write today for Free Book No. 7 Radio-Round Incubator Co. Wayne, Nebraska Drawer C HENS' NEST

For a month she ate nothing, and was steadily going down-hill, and had become a mere feathered skeleton.

I then tried a remedy I found recommended for cases of poisoning; namely, 5 grains sulpho-carbolated zinc dissolved in 4 ounces (1/2 teacupful) water. This medicated water was the only drink allowed the hen for six days. The result was a gradual improvement, and the hen soon showed signs of hunger, but would eat nothing for several days but cheese with a sharp bite to it.

From that time she gained rapidly, was soon singing, and began laying about the middle of August.

From that date to the last of October she laid 60 more eggs, making a total record to her credit for her pullet year of 232 eggs.

The weight of this hen's eggs is 2 1/4 ounces each, making a total weight of 32 1/2 pounds of eggs for the year.

Her production by months follows:

November18 eggs	May27 eggs
December22	June11
January19	July0
February23	August16
March27	September17
April25	October27

This hen was not broody throughout the year, and is now as vigorous and hearty as one could wish.

LITTLE wonder that first-class maple sugar and syrup are scarce. Only one tree is tapped for every five people in our population. Counting both sugar and syrup, New York is the leading State for the values of its maple products, Ohio is second and Vermont third. But Vermont is far in the lead for maple sugar alone. The maple products of the country are worth over five million dollars a year.

How I Did Caponize

By Ethel Kinkel

IN ONE of the issues of FARM AND FIRESIDE I read an article by Leon H. Virgil, entitled "How I Didn't Caponize." I didn't buy my chickens, I raised them; so I am ahead of Mr. Virgil there.

I selected ten for my first efforts at caponizing. They were April hatched and weighed about 1 1/2 pounds.

I shut them up and kept feed and water from them for thirty-six hours. I used a barrel, which is just the right height to work on, and I worked out in the open sunshine.

Anywhere from ten o'clock to two o'clock is a good time, for the sun shines right down on to the bird and you can see plainly the organs you are to remove.

I killed one of the first ten. I was a little nervous, and the knife slipped and cut the artery that runs along the backbone.

I selected fifteen the next time; I killed two of them. Something happened to two more after they were turned loose; anyway they disappeared. But as November closed I had a bunch of twenty fine capons. Some were pure-bred Barred Rocks, some Reds, and one White Rock. I think I had two or three slips, but they grew and seemed as large as the capons.

I intend to ship most of them in February or March. Am going to keep a few to experiment with as mothers for incubator chicks in the spring, then ship them the following holiday season. They will be over a year old, and ought to weigh 15 pounds.

Next summer my aim is to produce 100 capons. It is not much of a trick to operate if one once gets started.

The most important thing is to select the bird in just the right stage of development, and that is just before it reaches sexual maturity, when the comb and wattles are just beginning to show red and are a little prominent. The organs to be removed should be about the shape and color of a bright, fat grain of soft winter wheat.

I am much interested in this work, and think it would be fine if every male bird, except those wanted for breeders, could be caponized.

Broody-Hen News

"IF A HEN were the judge, I'm sure I would win first prize."

That's the way one of the contributors ended his letter in the contest for the best ways of breaking up broody hens.

"Perhaps he is right," remarked one of the judges, "but if hens really were the judges, in my opinion they'd censor the whole contest. Look at these 1,400 letters. Every one tells of a clever scheme. The worst 'broody' that ever lived won't have a chance when the best of all these are published."

The editors want to thank all who made this highly practical feature possible, also to announce that a full page of the best broody-breaking methods will appear just as soon as we can get them all arranged and the necessary drawings made to go with them.

Our Photo Contest

ONE hundred dollars for farm photographs. We want these photos to use as covers and illustrations for FARM AND FIRESIDE. Perhaps you did not notice what we said in our November 7th issue:

For the best picture.....	\$25
For the second best.....	15
For the third best.....	10
For the five next best, each.....	5
For the twenty-five next best, each....	1
Total.....	\$100

This contest closes July 1, 1915. Make your pictures taller than they are wide—About the proportions of the cover of this issue. Send your work to Photo Contest Editor, FARM AND FIRESIDE, Springfield, Ohio.

Vigor Talk Gone to Seed

A POPULAR slogan is, "Free Range for Vigor." It's good poultry gospel if the stock is vigorous to begin with and the birds do not become half-starved on the range.

On the other hand, there is nothing to prevent having breeding stock just as full of vigor when confined in relatively small pens and yards. All that is required is a ration well balanced and at the same time compel the birds to scratch, scratch, scratch for all their grain in deep, clean, dry litter. Chickens that are compelled to scratch and dig deep half their waking hours get more muscular exercise and development than do those that are running on range.

WHEN we are dealing with men we are really dealing with God. Since we cannot deceive God, neither can we deceive men. We may fool them for a while, but in the end they will find us out, just as God knew us all the time.

Why the Hens Didn't Lay

A Story in Five Parts

Part III

She Was Hungry, Perhaps



MY CROP has been empty a week. My gizzard and egg works don't speak.

No water, no grain, Just a great hollow pain. Can you blame me for gnashing my beak?

(Part IV will appear next issue)

Others Think This Way Too

I HAVE received many helps from FARM AND FIRESIDE. The most important was the sour-milk feeding for fowls. I hatched 55 chicks out of 60 eggs (White Leghorns) and raised 51.

In a previous hatch I lost heavily from white diarrhea.

Then came FARM AND FIRESIDE, and I learned of the sour-milk feeding. This saved my flock of Leghorns.

I fed it twice daily until the chicks were six weeks old, and after that all they could drink. I used the dry-feed method with success.

I shall try raising turkeys and Indian Runner ducks this year.

I am very much interested in the story of that "Brown Mouse," and from what I can learn its practical lessons will not be lost on the rural-school boards and teachers.

Having taught in the public schools, and now being a farmer's wife, I can readily and heartily stand for "Mr. Irwin's" method of teaching the rural schools. Mrs. M. B. FELLOWS.

Lost People

MRS. WILLIAM POOL was last heard from five years ago at Solomon, Kansas. Her sister is anxious to learn of her whereabouts.

JOHN T. WALKER, blacksmith by trade and last heard from in Ohio in the spring of 1914, is a lost uncle to W. M. Walker of Virginia. Any information concerning him will be greatly appreciated.

If you have information concerning these people, address your letters in care of Farm and Fireside, Springfield, Ohio.

Get the Whole Wonderful Story

Write for Free Book "Hatching Facts"

Winners of 21 World's Championships with Belle City Hatching Outfits tell the story of their success in their own words in my great new Free Book, "Hatching Facts." Send for the book today. A postal brings it. Gives full information, facts, proofs and particulars. Among Belle City Championship Prize Winners are some who never operated any incubator before. Thirteen more Belle City Championships added last season—all with 100% hatches. These, added to eight world's championships formerly won, make

Belle City Incubator Now

Times

World's Champion

Jim Rohan, Pres.

Free book also gives stories of multitudes of men and women scoring big hatches with the Belle City. 327,000 World's Champion Belle City Outfits are now in use. The book tells how Belle City Hatching Outfits are made—shows them in actual colors—photographs of prize winning hatches—gives my ten-year money-back guarantee—my low price and 1-, 2-, 3-months' Home Test—freight prepaid—full particulars of

My \$800.00 Cash Gold Offers

Greatest chance you ever had to make money with a hatching outfit. You don't have to have any experience whatever. Don't let any one get the start of you. Free Book tells you everything you want to know. Write today. No one else can give you so much Hatching Value for so little money. Jim Rohan, Pres.

Belle City Incubator Company Box 100 Racine, Wis.

Get My Low Price 1-, 2-, 3-Months' Home Test Offer—Freight Prepaid

I Ship Quick from Kansas City, Buffalo, Minneapolis and Racine



**10 Years
Guarantee**

Uncle Sam Poultry Book FREE
With Machine

**Freight
Paid**

Prompt Shipment

Catalog FREE

Start Right

with a

Sure Hatch

and you will

Make Money in the Poultry Business



FRANK HAMMOND
President

There was never a time when the chances for profits in poultry were better than now. Never a time when a small investment in a good incubator offered so great an opportunity for big and quick returns.

Poultry raising is a pleasure and profit, and not a mere fad. It is a great, big, important business. No other business pays such large profits on the amount invested and the labor required. It pays better than wheat or corn. There is always a ready market for poultry products at good prices. You can sell them any day.

A cheaply built incubator is sure to kill profits. You cannot afford to waste your time, money and eggs on a machine that will not maintain the proper hatching conditions under all circumstances. You must have a high quality incubator to start with—one that will keep the right hatching conditions without being watched all the time, and that is cheap to operate.

We Make You This Extraordinary Offer on The High Class Sure Hatch Incubator

We will send you this machine, any size you select from our catalog, on the day we receive your order, freight paid, on 60 days trial, under our strong 10-year guarantee.

You will have an opportunity to make two hatches with the machine, test it thoroughly in every way, and prove to your own satisfaction that it is, and will do, all that we claim for it, before you decide to keep it.

We could not afford to make you this unusual offer if we did not know the Sure Hatch to be a first-class hatching machine in every respect, and that a fair test would prove it so to your entire satisfaction.

A Proven Cold-Weather Hatcher Automatic Regulation—Easy to Operate

The Sure Hatch Incubator has stood the severest tests for over 17 years, on thousands of farms and city lots, in the severest northern winter season. Strongly and carefully built of dry California Redwood; double walls, perfectly insulated top, copper hot-water heating system, automatic regulation of heat, moisture and ventilation. It will hatch strong, healthy chicks even in a room so cold that water freezes in the drip-cut on the side of the machine.

Yet the Sure Hatch sells at so low a price that you will be surprised when you see it and have tried it. Having a modern factory—one of the largest incubator factories in the world, with a capacity of 100,000 machines a year—we give you the highest class machine at the lowest possible price.

Don't think that just because we talk quality our prices are high. They are not. They are low. They are so low, in fact, that you really cannot afford to buy any other machine but the Sure Hatch. We'll prove this to you when you get our free catalog.

With the Sure Hatch You Can Hatch Chicks in Winter

—get early laying pullets, and have friers or broilers ready for market when prices are highest. Even if eggs sell at 50c a dozen, it will pay you much better to put your good eggs into a Sure Hatch Incubator, and in a few weeks have from 100 to 200 chicks worth 40c apiece.

Many women who are Sure Hatch users wonder why they ever bother with hens. They find that they can get more chicks with one Sure Hatch than with 20 setting hens—in less time, because it is always ready; with less bother, because it requires less attention; cleaner, healthier, stronger chicks because the Sure Hatch does not harbor vermin to start diseases that are hard on the little fellows.

We will help you to start right and to succeed. We send you not only full directions for operating the Sure Hatch, but we will send you with the machine, our Uncle Sam Poultry Book, which tells how to handle the business the best way, from selecting the eggs to marketing the chickens. It is a compilation of official reports of U. S. Government experts—tells what to do and what not to do. Many illustrations. The book is free with every Sure Hatch.

Get An Early Start

our free catalog which will be sent by return mail. You will not have to wait for your machine. We ship the day order is received—freight paid; 60 days' trial; 10-year guarantee. Your money refunded if machine does not prove to be all we claim.

Sure Hatch Incubator Co.

Box 66

Fremont, Nebr.



Mrs. Emma Campbell, of Edinburg, Ill., one of thousands of women Sure Hatch users, writes as follows: "I have used a Sure Hatch Incubator for five or six years and have had splendid hatches. It is very simple to operate and never gives any trouble, such as smoking, or pipes stopping up with soot, like hot air machines do. I hatch a larger per cent of the fertile eggs than other people around here do with their high priced hot air machines."

Women Prefer the Sure Hatch

"There are many other kinds of incubators here but I would not give my Sure Hatch for all of them."—Mrs. M. J. Nolan, Columbus, Ohio.

"I have a Sure Hatch Incubator, bought second hand, and I would not give it today for all the other incubators I ever saw."—Mrs. Dorcy Foster, Duke, Ohio.

"I set my Sure Hatch and hatched all but two eggs."—Mrs. Walter Rodgers, Council, Idaho.

"I have used the Sure Hatch Incubator 10 years and have never missed having a good hatch."—Mrs. Chas. J. Campbell, North Vernon, Ind.

"I have tried three kinds of incubators, but they were none as good as the Sure Hatch."—Mrs. Clara Miller Tratter, White Eagle, Okla.



Get This Book Free

This free book tells you all about how the Sure Hatch is made. Tells you just what you want to know about a thing before you buy it. Our descriptions of parts and pictures are so plain that after you have read it over you will know as much about the Sure Hatch as if you saw an actual machine. There is much general information on poultry raising, and hundreds of letters from Sure Hatch users. Write for this book today.

The Sure Hatch Brooder

Takes Better Care of Chicks Than the Hen

The hen is not a good mother as a rule. She loses from 25 to 50 per cent of her brood, before they get to the age when they can care for themselves—from rats, cats, dogs, hogs, vermin, and disease caused by being chilled.

The Sure Hatch Brooder protects the tender young chicks from all these dangers. It is automatically ventilated, maintains the proper temperature all the time. It is strongly built, durable, and costs so little that you cannot afford to do without it.

EDITORIAL COMMENT

FARM AND FIRESIDE The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in FARM AND FIRESIDE that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - - Editor

February 13, 1915

Danger!

THE powdery scab will get the potato growers if they don't watch out.

Otherwise the Department of Agriculture would not have sent out its warning to purchasers of seed potatoes in the Atlantic and Southern States, advising them to look out for seed not properly tagged by federal inspectors.

There is a government potato inspection service which looks out for the matter and puts a white label on bags of seed potatoes which have been inspected and found free from powdery scab. Table potatoes are shipped from Maine in bulk in cars bearing a blue certification tag, and dealers sometimes sell potatoes from such shipments for seed. They have the right to do this, but persons planting them may plant potatoes which have been exposed to infection, and possibly find themselves in the predicament of having not only produced infected potatoes but of being placed under federal quarantine.

Powdery scab is the foot-and-mouth disease of potatoes, in that it is found in some of the neighboring countries, and is always a danger to us.

Maine tubers are under especial scrutiny. There are plenty of inspected seed potatoes to be had from Maine, however, and if the white label is looked for placed on the bag or other container, and not on the ear, the planter may feel safe.

Selling by Mail

SELLING by mail can never take the place of the present system, but it may affect it to some extent. The great agencies for this kind of selling are the parcel post and the express company. The man who makes a success of mail-order selling must do so by finding honest and reliable customers, and giving his customers honest and reliable goods.

The first requires salesmanship.

The second ought to be easy for any man, but unfortunately it is not.

The Golden Rule must be packed in every shipment. Some businesses may be successful without scrupulous honesty, but mail-order selling can never be. Every shipment must be put up a little better than the shipper would be satisfied with if he were the customer. Such a man will get customers, and keep them. None other will.

Horse Atrocities in Europe

THE automobile tends to make horses scarcer, better, and dearer. A few more years in the development of the gas engine and electricity, and the horse will become a pet. None but the best will be reared, and they will be bred from the best breeds and strains. Still there will

remain certain sorts of work in the performance of which nothing can replace him, and people tired of traveling by machine power will revert to the uncertainties and charms of man's old friend, the horse.

There's poetry in the horse, and about him has gathered myth, legend, and story.

He is in the blood of humanity, and will not depart from it.

At the same time the great age of the horse is past. It is hard lines, however, for this noblest of animals to have the twilight of his history made darkest night by the slaughter of almost universal war.

He is pushed to his very death in carrying men to their positions in battles.

He is hurled against storm of iron.

He is ridden into wire entanglements.

He is left to die in agony on a hundred stricken fields.

Poor old Dobbin! He has carried civilization over the world, broken the sod for the making of farms, fed, clothed, and housed mankind—and now, when he should have been given the grassy paddock which is the due of the good and faithful equine servant, to be so vilely treated falls almost to the level of "human justice."

Is Your Dog a Nuisance?

AMONG the means to be adopted to prevent the spread of hog cholera, the Iowa "Homestead" mentions the limitation of the activities of the dog. "Intruders in the form of dogs should be absolutely forbidden the premises."

Excellent advice, but the "Homestead" forgets the fact that in most of our States the dog has more rights than hogs, more rights than sheep, more rights than human beings. One may say to a neighbor in a kindly manner that human visitors are not allowed at the pens as a quarantine regulation, but let him ask the same neighbor to keep his dog confined and relations are quite likely to become strained at once.

Queer thing, human nature!

"The County Farm Hand"

IN SOME localities he is called the "county agent," elsewhere he is the "county demonstrator." Everywhere he seems to be a useful man, working hard for our best interests, and making us familiar with matters we always knew about but hadn't just exactly seen, and occasionally telling us things we never even heard of.

But his name varies in different localities.

Why not call him "The County Farm Hand?" It sounds more homey, and "sort o' helves our thought"—as Hosea Biglow said—better than long-tailed language.

Would he object to being called "The County Farm Hand?"

Not many of him would, and in most cases the objector would be more serviceable in some other business.

Most of these county agents of the farmers are of the farm-hand sort—hard as nails, weathered as to skin, and ready for any sort of grip with the soil, or the animals it nourishes. These fellows, with all their experiment-station knowledge, would be rather proud to be called "county farm hands."

How Bankers Are Made

THOSE who advise the farmers to ask for laws permitting farmers' co-operative banks to receive deposits are in error. As soon as such organizations take on the business of receiving deposits, they assume the expenses of running commercial banks. They must have salaried officers and loan committees, and must learn the banking business. They must learn it, too, by experimenting with their own money.

Bankers are not so made.

They spend years of their lives in subordinate positions before they can be assumed to have

that sort of second sight without which no banker can succeed.

Co-operative farmers' banks have succeeded only where they have been organizations of borrowers, whose sole function has been to standardize and certify loans for the safeguarding of lenders. They must not be obliged to maintain a bank office, or a safe, or a salaried force. They must be officered by men who receive no salaries, save for the small amount of bookkeeping necessary for their business.

Small co-operative farmers' deposit banks would embarrass the co-operative movement and yield profits to safe blowers only.

What This Teacher Didn't Know

A COUNTY AGENT in Ohio was called upon by a teacher in a town school for agricultural aid. "I have a lot of trees here," said the professor, "some apples, some peaches, some pears, and some plums. I wish you would tell me which is which." That city teacher is training the future teachers for the rural schools in his vicinity. By such a system the rural schools have been made, and are still maintained in the condition of poor copies of bad city schools.

We need specially trained teachers for rural work, to the end that the rural schools may be ruralized. The rural teacher's job must be made more important. To this end the schools must do work which pays the district and educates both the young and the old. Here and there this new kind of rural school is developing.

The Carrier

HE COMES with all the inevitability of death and taxes, but unlike them he is always a welcome caller. To be sure, he is oftentimes charged with messages of bereavement, and notices of liabilities and of unperformed duties, but for all that he is welcome.

It is not his fault that he is not always a bearer of messages of good cheer.

He would rather bring good news, but so long as he is the nexus between us and the outside world, which is an affair of both good and evil, the fault is with the world and not with the rural mail carrier if the evil sometimes predominates.

He rises while it is still dark, and whatever may be the weather or the roads, he brings the world to our doors.

He is the very type of faithfulness.

Should this nation fall, as nations are doing in other and less-favored climes, our first noticeable loss would be his daily visits. The rattle of his buggy down the road says to us all, "God lives and the Government at Washington still exists." Other functionaries of the Government are burdens on our shoulders, but the mail carrier bears our burdens.

He, more than steam, electricity, or the telephone, annihilates distance for us.

By his labors we join daily in the thought of the world.

He enables us to become a really united people, reading and thinking the same things at the same times.

He even brings to us the criticisms of the very Government which sends him to our doors with such unfailing regularity—and when the word goes out through the press that he, the mail carrier himself, is a heavy load on the Government, he delivers to us the indictment with a smile.

He is the guaranty of the nation against the division of the land into a peasantry and a plutocracy, for he serves Thought—and Thought alone can make and keep a free people.

Here's to his health and his family; may he live long—and prosper!

Good Results From Vaccination

How to Get Them—Also Stories of Failures and the Reasons Why

By D. S. Burch, Associate Editor

THE two principal causes of bad results from vaccination are (1) incompetence of the man who does the work; (2) bad care of hogs afterward. Just a few instances to show what foolish things—yes, criminally wrong things—a poor veterinarian will do.

One veterinarian went out to vaccinate a bunch of hogs. He should have used four quarts of serum to give them the right protection. Instead he took only a pint with him and had a third of that left when he was through. Of course the hogs did not receive enough serum to make them immune, and the job was worse than worthless.

Another "vet" who was new at the work did this: He first treated all the large hogs of a herd, using the double treatment, and did a good job, presumably because he followed directions as far as he went. But when he got around to treat the small hogs—thirty of them—he found that he had run out of serum.

"Well," he concluded, "I'll just give the little tilters the blood" (the virus), which he did, and of course killed them all. The virus given alone will always kill a hog that isn't already immune.

Another veterinarian vaccinated a bunch of hogs with the serum, which simply gives temporary immunity. But he led the owner to believe the hogs would always be immune. Some time later when the immunity had run out, all the hogs, 45 head of them, averaging 125 pounds, took the cholera. The owner got only a cent a pound for them, the grease price.

What the "Trouble" Man Found

This case was apparently like many others where veterinarians are afraid to give virus or enough of it for fear they will lose some of the hogs. Consequently the immunity runs out. Still another veterinarian thought he would hurry the work along, so he mixed the virus and serum in one dish and injected the mixture into a bunch of hogs, losing all of them.

For examples of negligence after the vaccination, listen to these:

A man near Plainview, Kansas, wanted to have his hogs vaccinated. The veterinarian noticed that some of the mudholes in the hog lot were covered with green scum, and cautioned the owner of the hogs to provide a good clean place for them. On assurance that the hogs would be put in an upland alfalfa pasture, the veterinarian went ahead with the work. But the next day, when he happened to go past the farm, the vaccinated hogs were wallowing in the green scum. The owner admitted he had promised to put the hogs in the upland pasture only to get his hogs vaccinated without a lot of argument, and said he didn't have much faith in vaccination or in germs and such things.

None of those vaccinated hogs died of cholera, but 75 per cent died of blood-poisoning. Infection arising from such sources is believed by nine experts out of ten to be the cause of abscesses in hams and shoulders or wherever the injection is made.

Overfeeding is another cause of bad results. For two days before vaccination cut down the ration one half. And for two weeks afterward feed very lightly. Especially avoid corn or anything heating. A thin water-and-middlings slop is good.

"A man can easily kill 50 per cent of his newly vaccinated hogs by heavy grain-feeding," says Pres. H. C. Moore of the Pitman-Moore Company.

The Missouri Valley Serum Company has found 80 per cent of the poor results due to overfeeding right after vaccination, or failure to provide the hogs with plenty of pure cool drinking water.

The reaction that follows vaccination by the double method is a mild form of cholera, and cholera corresponds closely to typhoid fever in humans. Anyone who understands typhoid knows you have to feed very lightly during the course of the fever.

Before these things about cholera were known the serum got the blame for bad results. The State Veterinary Department of Kansas has a "trouble man" who goes into the cholera-smitten districts, investigat-

ing the results following vaccination. You may be surprised to hear that thus far he has not found a single case of bad results where he could blame the serum or virus. Still that does not prove that no bad serum has ever been sent out. "There is no question about bad serum several years ago," said a state official in the Central West, "it was too easy money." Even the private serum manufacturers admit the sale of unreliable serum. "Two years ago," said one manufacturer, "we didn't make any eight-pig test, but just vaccinated some pigs with the double treatment, and if they lived we called the serum all right. If the pigs had happened to be immune, that would have been no test at all. Now, of course, we always have control pigs that must die so as to be sure that all are susceptible as well as knowing that the serum is potent."

I liked this man's frankness, and in justice to serum manufacturers shall say that not one refused me admittance to any part of his establishment, nor hedged about any question asked him. If he couldn't

amounted to \$900,000 last year. But the expenses of serum plants are heavy. Strict government requirements, high salaries paid for skilled help, expense of equipment and supplies, condemned batches of serum, and danger of loss of business through quarantine—all these things help to make the net returns lower than the outsider might suspect.

In the endeavor to ascertain why the license of one serum plant had been canceled by the Government, I learned that it was due to nothing more serious than a change of management, and that none of the requirements had been violated. I learned that the first owner had formerly run a pool hall but considered the serum business a quicker way to get rich. He found after he started to build that he would have to spend about three times as much as he had expected to invest, and though he kept a stiff upper lip for a while he finally sold out his brand-new plant at a heavy loss (\$19,000 according to one report).

The manager of one of the state-owned serum plants had a tale of woe to tell about the way he was "held up" for test pigs. He said that when the farmers in the surrounding country found that the serum plant had to have test pigs of a certain size they made him pay prices for them all out of reason. These instances simply show some of the thorns among the roses.

The anti-hog-cholera serum used in this country is made in about 125 different establishments. Of these Kansas City has 26, Omaha 9, and there is hardly an important live-stock market but has at least one serum plant. About three fourths of all the establishments are under government license, and are permitted to sell their products anywhere. The others cannot do business outside of the State where the plant is located.

If You Spill Virus

The capacity of the various serum plants ranges from about a quarter of a million to twenty million cubic centimeters a month. The average serum plant, when running at full capacity, can turn out enough serum to treat over 50,000 hogs a month.

The total output of all the establishments in the country is something tremendous, yet the demand continues to keep up with the supply, and at times there have been serum famines in some parts of the country. On the books of one company I noticed a \$6,000 contract for serum to be supplied one veterinarian.

He made the contract the first of the year to be sure of getting all the serum he needed. These facts alone are a splendid proof of the value of the treatment. The public wouldn't use so much serum and pay good money for it unless it actually proved its worth.

Another matter which is variously asserted and denied is whether hogs freshly vaccinated by the double treatment can distribute cholera germs. Experiments show and experts agree that they may for a period of about three weeks—that is, while the hogs are going through the process of becoming immune. This makes two things urgent. The first is, if you vaccinate at all, vaccinate all the hogs on your place. The second is to disinfect your hog lot a month after your hogs have been vaccinated.

Among the best disinfectants are: Cresol (1 pint of cresol to 4 gallons of water); or, carbolic-acid solution (1 pound of carbolic-acid crystals to 4 gallons of water); or, lime (in any of its powdered forms).

You can reduce the amount of disinfectant needed by confining the treated hogs in a small lot. Also board up burrows and nests under sheds and barns so those places will not become infected. They are hard to disinfect thoroughly. If you should spill even a drop of virus, pour disinfectant over it. One of the serum companies puts out its virus in a bottle provided with a rubber cork that is not easily extracted. To get the virus out of the bottle you put the needle of the virus syringe through the rubber cork and draw the virus into the syringe. Then when you take the needle out, the hole in the cork closes up so you cannot possibly spill any virus.



This is a good example of where a bird house ought not to be. Pigeons are among the worst offenders as cholera carriers

answer it himself he always found someone who could.

For a year past the Government has required the eight-pig test, and all the state plants too, I believe, have adopted it or an equivalent test. This insures the quality of the serum as far as its potency for resisting cholera goes. Batches are sometimes below the required strength, but these cannot be sent out. There is no excuse whatever for any bad serum being sent out.

The freedom of the serum from disease germs and general contamination is another question. All the best plants make a thorough post-mortem of hogs killed for virus and serum, and that examination is supposed to reveal any disease that may be present. But even the best serums contain a small number of foreign bacteria.

Serum-Making No Job for Amateurs

The reported discovery of foot-and-mouth infection in the products of carefully managed establishments under U. S. inspection shows how uncertain the purity of serum or virus may be. During November an order was issued to increase the strength of the carbolic-acid preservative from one-half per cent to one per cent. Like the purity of milk, the absolute purity of serum is a matter for further study and experiment. But we would be as foolish to stop the general use of serum in the meantime as to stop drinking milk because it isn't all perfectly sterile.

An impression exists in some minds that serum factories are making lots of money. They certainly are taking it in. One company admitted its business

To Help the Reader

AS ALREADY explained in this series, hog cholera can be absolutely prevented by vaccination.

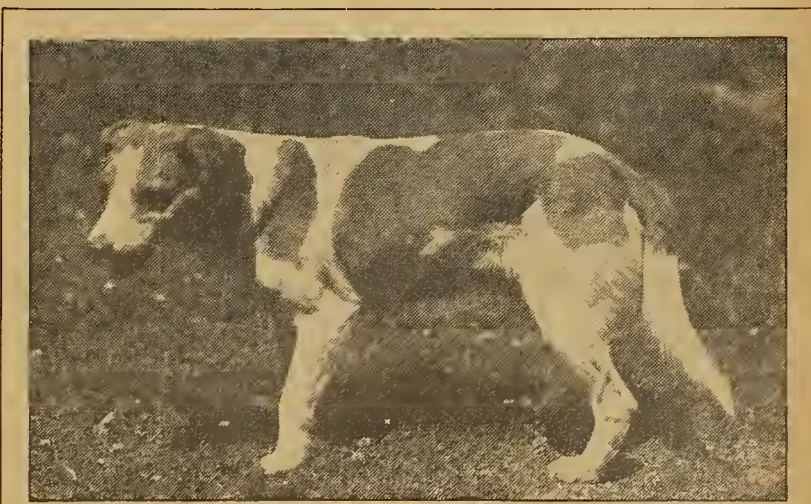
For best results a skilled and experienced man must do the work. The cost is somewhat less than a cent per pound of hog.

Serum used alone makes the hog resistant to cholera for a few months. When virus (cholera blood) is used with the serum, a mild form of the disease is created and then cured, making the hog immune for life.

The metric unit of measure is used in determining the doses. This is the cubic centimeter (abbreviated c.c.) and is equal to a small thimbleful.



When cholera is in your township don't drive through your hog lots. The infection can be distributed by horses' feet and wagon tires



The roving dog may carry cholera germs, as may also rabbits, farm live stock, and even dust blown by the wind

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To have a really first-class quarantine pen or lot, roof it over with inch-mesh wire netting to keep out the birds. Then to complete your disinfecting job you will need to dip your hogs.

Philip Ritter of the National Serum Company, Kansas City, says the easiest way is to let the hogs dip themselves. To make them do this he simply puts a dipping tank under the fence between the feed lot and any other lot used by the hogs. The top of the dipping tank is level with the ground. Close all gates so the hogs must go through the dip to get to their feed. Such a tank is best made of concrete. Have it about 10 feet long, 2 feet wide, 2 feet deep, with both ends sloping, and keep about 15 inches of dip in it.

A stockman who built one of these at a cost of \$8 says it has been worth \$800 to him. He uses it constantly when the weather permits.

Before the Veterinarian Comes

Much of the work and expense connected with the vaccination of hogs may be avoided by a little foresight, such as keeping the hogs in a clean dry pen the day before and arranging a couple of partitions so you can catch them quickly. With three or four good assistants an experienced man can vaccinate 200 or more hogs a day.

For the details of vaccination write to the Department of Agriculture at Washington for the circular entitled "How to Use Anti-Hog-Cholera Serum," but a still better way is to attend a practical demonstration.

The knack of doing the work cannot very well be learned by reading. I mention, however, just a few matters that need watching. The first is the weight of the pigs. The amount of serum given an animal depends on the weight and on the condition it is in. If you have a large herd it will take too long a time to weigh every one. Just sort them into uniform bunches, weigh each bunch, and then divide the total weight by the number in each bunch. That will give almost the exact weight of each hog. Don't have your hogs vaccinated in very hot weather if you can help it. The fever which follows the double method of treatment goes down quickest if the weather is cool.

Give a fat or a highly bred hog more serum than is customary for a hog of the same weight but of more rugged constitution.

The only objection to using too much serum is the cost of it. As far as the hog is concerned, you can give ten times the usual amount without injury. However, don't put more than 20 cubic centimeters in any one place. To be really scientific, always put the serum on one side and the virus on the other. Then if you have any trouble with swelling or sores you can easily trace it. But absolute cleanliness all through the work will prevent such trouble.

Quarantine All Hogs That Don't Eat

This does not mean just soap-and-water cleanliness, but surgical cleanliness, including disinfection. You must first wash the place where the needle of the syringe is to go. Then disinfect it with tincture of iodine or something equally strong and effective. Then pull the skin to one side as far as you can, and push the needle in nearly its full length, but don't let it touch the bone.

When you have injected the serum and pulled the needle out, the skin will slip back to its original position and the hole

in the skin will be as much as two inches from the hole made in the flesh. The most careful operators change the needle of the syringe after every hog, and allow the used needle to lie in a disinfectant, after which it is re-used while another is being disinfected.

During fly time a little pine tar put on the puncture will keep insects away from it. The puncture ordinarily takes four days to heal.

To add safety to safety, you can use the combination method of treatment. To do this, vaccinate with serum alone, giving three fourths the regular dosage; then ten days later follow with the double treatment. This first dosage prepares the hogs' systems for the reaction. Field results show this method is slightly (but only slightly) more successful than the simultaneous treatment. This method is claimed by its advocates to be the most satisfactory for exposed herds, very fat or highly bred hogs, and those not in prime condition.

The chief objection to it is the extra work and the extra amount of serum needed. Doctor Hadley of Wisconsin claims that you save enough more hogs in exposed herds to pay for the additional cost. This depends somewhat on the cost of the serum; the state-made serum in Wisconsin costs only a cent a cubic centimeter.

Skill in detecting cholera at the very start of an outbreak will greatly reduce the losses in an unvaccinated herd. If a hog misses two feeds in succession, put him in a separate pen at once and disinfect the places he has been. Also divide the herd into several bunches and separate each bunch. The farther apart they are the slower the disease will spread. Hog cholera affects no other animals but swine.

A Man Who Wasn't Ruled by His Neighbors

A good way to burn dead ones is to dig a small trench, put an iron wheel flat across the trench, put the hog on it, make a fire underneath, slit the hog's hide, and then let him burn to ashes.

If cholera is in the neighborhood, establish a strict quarantine and keep people out of your hog lots. In one section in Kansas the cholera was admitted by unanimous consent to have been spread by hog buyers. In a Missouri community a cholera-sick hog staggered into a creek and drowned. Before long a wail of cholera woe came from the farms downstream. The dead hog had been washed ashore on the first farm below that of the owner, and the loss there was the heaviest of all.

I visited some of those farms a few weeks ago and found hog-raising decidedly unpopular. None of them had tried vaccination, though a few were talking about it.

Doctor Hadley of the state serum plant at Madison, Wisconsin, tells this story: A Wisconsin hog raiser had been having some losses through cholera, and twice had almost decided to go to Madison and get some serum, but was dissuaded by neighbors who told him "there was nothing in it."

Finally when he got tired of losing his hogs he braved local opinion to the extent of going to Madison, but when he reached the veterinary department his nerve temporarily failed him. He talked with Doctor Hadley a while, but couldn't quite make up his mind what to do. He was on the point of going away empty-handed when all at once his courage returned. "Give me that serum," he decided, "the Lord hates a coward."

The Spring Sowing of Cyclamen
By John T. Timmons

IF YOU want to grow cyclamen from seed secure a shallow box, say about five inches in depth, and place in the bottom a layer of pebbles and charcoal for drainage, and then about three inches of good rich light earth, which is best if mixed with leaf mold and very rotten manure.

To insure success it is well to bake the earth in the oven, in a pan or crock, to kill any weed seeds or insect life, and then sift it thoroughly.

When the soil is cooled off, place it in the box and level with a piece of lath or other straight edge, and make shallow drills in the surface. These drills must be just deep enough to make a mark where the seed should be placed in the earth.

In sowing the seeds place them very sparingly, as it is best not to have them planted too thickly. Cover them with just enough earth to bury them about four times the thickness of the seeds.

Water thoroughly, but be very careful not to flood the soil so as to make a mortar or wash the seeds from the light earth.

The best way to distribute water on the surface of such a seed bed is to squeeze the moisture gently from a sponge.

The moisture should be retained by laying a pane of glass over the top of the box. It is best to put short sticks across the corners, allowing the glass to be raised just enough to permit a circulation of air and still keep the moisture in.

This will assist greatly in producing an even temperature. The box should not be placed in direct sunlight, and the accumulation of moisture on the under surface of the glass should be removed once or twice a day.

When the seeds germinate, and the small plants appear, which will possibly vary from one to several weeks, it is best to raise the glass more, and if the light is strong it should be removed in daylight.

When the plants show three or four leaves they should be transplanted into another box containing similar earth, or into very small pots where they will have more opportunity to grow. They require tender care during their early life.

Seed sown in early spring should make plants that will bloom the next winter. When warm weather comes they should be set in open ground in a bed of rich light earth, carefully weeded until September, then potted in four-inch pots, shaded for a while, and placed indoors.

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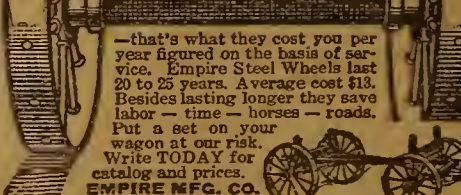
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The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Eight

IF YOU have not been reading this story, this is the very place to begin it. Make friends with Jim Irwin, for he is worth while and stands now with his hand extended to you. We have found out that he was a thinker. While he worked as a hired man on Colonel Woodruff's farm he studied the laws in harmony with which crops grow or don't grow. Naturally he was considered an off ox and a good butt for jokes, one of which was his nomination as district-school teacher. To everyone's consternation he was accidentally elected. He resolved to make his school a sort of farm laboratory where the three R's should be taught in terms of farm problems. The neighborhood was scandalized, and he was brought up for trial on the charge of incompetency. His judge was the county superintendent, his old sweetheart, Jennie Woodruff, who had joined his opponents. By his pupils, however, he was acquitted, for when examined in the neglected textbooks the boys and girls showed that they had mastered those lessons, though by another route.

XX

Suddenly Jim Was Famous

EVERY Iowa county has its Farmers' Institute. Usually it is held in the county seat, and is a gathering of farmers for the ostensible purpose of listening to improving discussions and addresses both instructive and entertaining. Really, in most cases the farmers' institutes have been occasions for the cultivation of relations between a few of the exceptional farmers with their city friends and each other. Seldom is anything done which leads to any better selling methods for the farmers, any organization looking to co-operative effort, or anything else which an agricultural economist from Ireland, Germany, or Denmark would suggest as the sort of action which the American farmer must take if he is to make the most of his life and labor.

The Woodruff District was interested in the Institute, however, because of the fact that a rural-school exhibit was one of its features that year, and that Colonel Woodruff had secured an urgent invitation to the school to take part in it.

"We've got something new out in our district school," said he to the president of the Institute.

"So I hear," said the president. "Mostly a fight, isn't it?"

"Something more," said the Colonel. "If you'll persuade our school to make an exhibit of real rural work in a real rural school, I'll promise you something worth seeing and discussing."

Such exhibits are now so common that it is not worth while for us to describe it; but then, the sight of a class of children testing and weighing milk, examining grains for viability and foul seeds, planning crop rotations, judging grains and live stock, was so new in that county as to be the real sensation of the Institute.

Two persons were a good deal embarrassed by the success of the exhibit. One was the county superintendent, who was constantly in receipt of undeserved compliments upon her wisdom in fostering really "practical work in the schools." The other was Jim Irwin, who was becoming famous, and felt he had done nothing to deserve fame. Professor Withers, an extension lecturer from Ames, took Jim to dinner at the best hotel in the town, for the purpose of talking over with him the needs of the rural schools. Jim was in agony. The colored waiter fussed about trying to keep Jim in the beaten track of hotel manners, restored to him the napkin which Jim failed to use, and juggled back into place the silverware which Jim misappropriated to alien and unusual uses. But when the meal had progressed to the stage of conversation the waiter noticed that gradually the uncouth farmer became master of the situation, and the well-groomed college professor the interested listener.

"You've got to come down to our farmers' week next year and tell us about these things," said he to Jim. "Can't you?"

Jim's brain reeled. He go to a gathering of real educators and tell his crude notions! How could he get the money for his expenses? But he had that gameness which goes with supreme confidence in the thing dealt with.

"I'll come," said he.

"Thank you," said the Ames man. "There's a small honorarium attached, you know."

Jim was staggered. What was an honorarium? He tried to remember what an honorarium is, and could get no further than the thought that it was in some way connected with the Latin root of "honor." Was he obliged to pay an honorarium for the chance to speak before the college gathering? Well, he'd save money and pay it. The professor must be able to understand that it couldn't be expected that a country teacher would be able to pay much.

"I—I'll try to take care of the honorarium," said he. "I'll come."

The professor laughed. It was the first joke the gangling innovator had perpetrated.

"It won't bother you to take care of it," said he, "but if you're not too extravagant it will pay your expenses and give you a few dollars over."

E W

Jim breathed more freely. An honorarium was paid to the person receiving the honor, then. What a relief! "All right," he exclaimed, "I'll be glad to come." "Let's consider that settled," said the professor. "And now I must be going back to the opera house. My talk on soil sickness comes on next. I tell you, the winter wheat crop has been—"

But Jim was not able to think much of the winter-wheat problem as they went back to the auditorium. He was worth putting on the program at a state meeting! He was worth the appreciation of a college professor, trained to think on the very matters Jim had been so long mulling over in isolation and blindness! He was actually worth paying for his thoughts!

Calista Simms thought she saw something shining and saintlike about the homely face of her teacher as he came to her at her post in the room in which the school exhibit was held. Calista was in charge of the little children whose work was to be demonstrated that day, and was in a state of exaltation to which her starved being had hitherto been a stranger.

Perhaps there was something similar in her condition of fervent happiness to that of Jim. She too was

hand he felt the repulsion of their attitudes and sheered off on some pretended errand to a dark corner across the room.

They resumed their talk.

"I'm a Dimmycrat," said Con Bonner, "and you fellers is Republicans, and we've fought each other about who we was to hire for teacher; but when it comes to electing my successor I think we shouldn't divide on party lines."

"The fight about the teacher," said Haakon Peterson, "is a t'ing of the past. All our candidates got odder jobs now."

"Yes," said Ezra Bronson, "Prue Foster wouldn't take our school now if she could get it."

"And as I was sayin'," went on Bonner, "I want to get this guy, Jim Irwin. An' I bein' the cause of his gittin' the school, I'd like to be on the board to kick him off; but if you fellers would like to have someone else I won't run, and if the right feller is named I'll line up what fri'nds I got fer him."

"You got no friend can git as many votes as you can," said Peterson. "I t'ink you better run."

"What say, Ez?" asked Bonner.

"Suits me all right," said Bronson. "I guess we three have had our fight out and understand each other."

"All right," returned Bonner, "I'll take the office again. Let's not start too soon, but say we begin about a week from Sunday to line up our fri'nds, to go to the school election and vote kind of unanimous like."

"Suits me," said Bronson.

"Wery well," said Peterson.

"I don't like the way Colonel Woodruff acts," said Bonner. "He rounded up that gang of kids that shot us all to pieces at that hearing, didn't he?"

"I t'ink not," replied Peterson. "I t'ink he was just interested in how Yennie managed it."

"Looked mighty like he was managin' the demonstration," said Bonner. "What d'ye think, Ez?"

"Too small a matter for the Colonel to monkey with," said Bronson. "I reckon he was just interested in Jennie's dilemmer. It ain't reasonable that Colonel Woodruff would mix up in school-district politics."

"Well," said Bonner, "he seems to take a lot of interest in this exhibition here. I think we'd better watch the Colonel. That decision of Jennie's might have been because she's stuck on Jim Irwin, or because she takes a lot of notice of what her father says."

"Or she might have thought the decision was right," said Bronson.

"Some people do, you know."

"Right!" scoffed Bonner. "In a pig's wrist! I tell you that decision was crooked!"

"Vell," said Haakon Peterson, "talk of crookedness wit' Yennie Woodruff don't get wery fur wit' me."

"Oh, I don't mean anything bad, Haakon," replied Bonner, "but it wasn't an all-right decision. I think she's stuck on the guy."

The caucus broke up after making sure that the three members of the school board would be as one man in maintaining a hostile front to Jim Irwin and his tenure of office. It looked rather like a foregone conclusion, in a little district wherein there were scarcely twenty-five votes. The three members of the board with their immediate friends and dependents

could muster two or three ballots each—and who was there to oppose them?

XXI

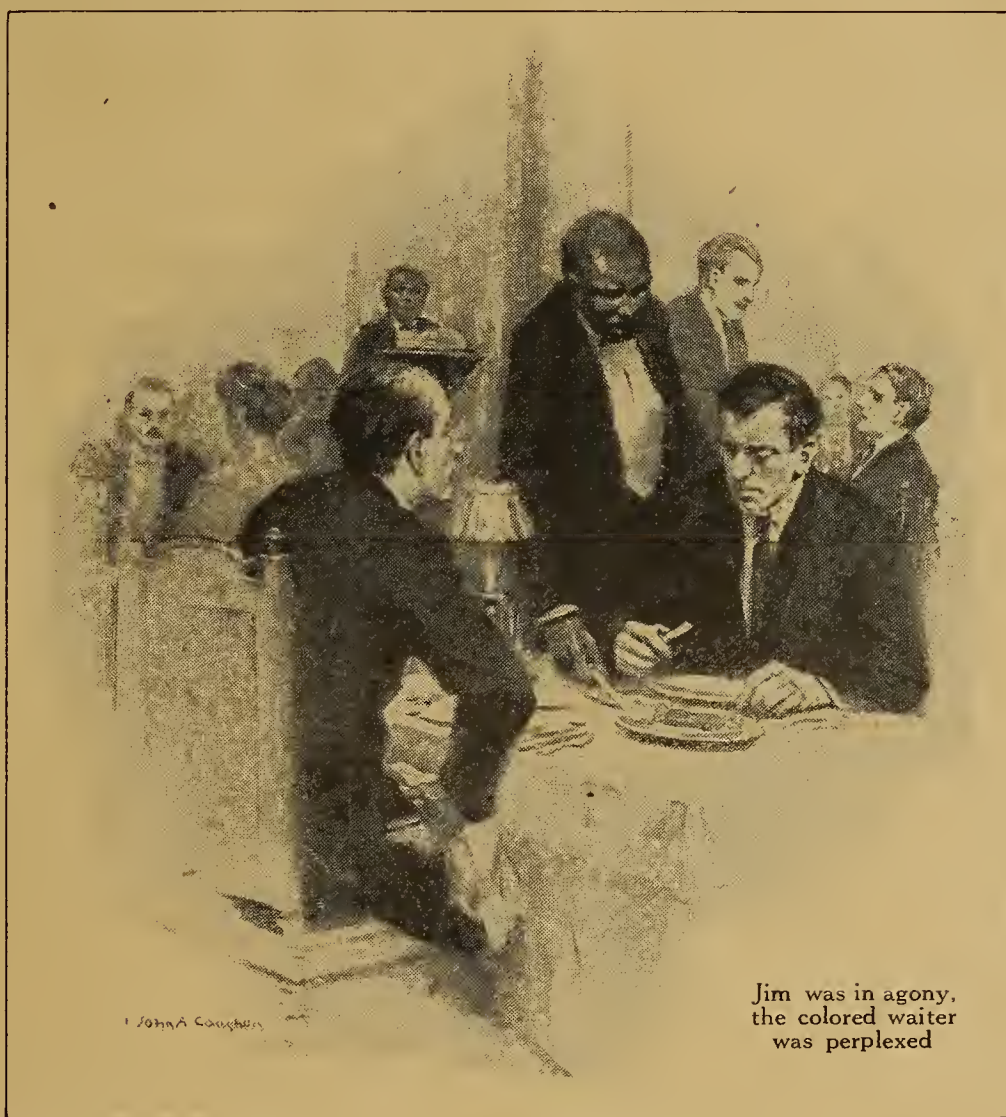
His Enemies Weave Their Webs

WHO wanted to be school director? It was a post of no profit, little honor, and much vexation. And yet there are always men to be found who covet such places. Curiously enough, there are always those who covet them for no ascertainable reason, for they are men who have no theory of education to further, and no fondness for affairs of the intellect. In the Woodruff District, however, the incumbents saw no candidate in view who could be expected to stand up against the rather redoubtable Con Bonner.

Jim's hold upon his work seemed fairly secure for the term of his contract since Jennie had decided that he was competent, and after that he himself had no plans. He could not expect to be retained by the men who had so bitterly attacked him. Perhaps the publicity of his Ames address would get him another place with a sufficient stipend so that he could support his mother without the aid of the little garden, the cow and the fowls—and perhaps he would ask Colonel Woodruff to take him back as a farm hand. These thoughts thronged his mind as he stood apart and alone after his rebuff by the caucusing members of the school board.

"I don't see," said a voice over against the cooking exhibit, "what there is in this to set people talking. Buttonholes! Cookies! Humph!"

It was Mrs. Bonner, who clearly had come to scoff. With her was Mrs. Bronson, whose attitude was that of a person torn between conflicting influences. Her husband had indicated to the crafty Bonner and the subtle Peterson that while he was still loyal to the school board, and hence perforce opposed to Jim Irwin, and resentful of the decision of the county superintendent, his adhesion [CONTINUED ON PAGE 29]



Jim was in agony, the colored waiter was perplexed

doing something outside the sordid life of the Simms cabin. She yearned over the children in her care, and would have been glad to die for them; and, besides, was not Newton Bronson there in charge of the corn exhibit, and a member of the corn-judging team?

To the eyes of the town girls who passed about among the exhibits she was poorly dressed; but if they could have seen the clothes she had worn on that evening when Jim Irwin first called at their cabin and failed to give a whoop from the big road they could perhaps have understood the sense of well-being and happiness in Calista's soul at the feeling of her whole, clean underclothes, her neat, if cheap, dress, and the "boughten" cloak she wore—and any of them, even without knowledge of this, might have understood Calista's joy at the knowledge that Newton Bronson's eyes were on her from his station by the big pillar, no matter how many town girls filed by. For therein they would have been in a realm of the passions quite universal in its appeal to the feminine soul.

"Hello, Calista!" said Jim. "How are you enjoying it?"

"Oh!" said Calista, and drew a long, long breath, "Ah'm enjoying mysef right much, Mr. Jim."

"Any of the home folks coming in to see?"

"Yes, seh," answered Calista. "All the school boad had stopped by this mornin'."

Jim looked about him. He wished he could see and shake hands with his enemies, Bronson, Peterson, and Bonner; and if he could tell them of his success with Professor Withers of the State Agricultural College, perhaps they would feel differently toward him. There they were now, over in a corner, with their heads together. Perhaps they were agreeing among themselves that he was right in his school methods, and they wrong. He went toward them, his face still beaming with that radiance which had shone so plainly to the eyes of Calista Simms, but they saw in it only a grin of exultation over his defeat of them at the hearing before Jennie Woodruff. When Jim had drawn so close as almost to call for the extended

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The Best Wheats for Kansas

By L. E. Call

WE HAVE found that hard red winter wheat is best suited for growing over the greater part of Kansas. During the past twelve years thousands of varieties of wheat brought together from all parts of the world have been tried out in comparison with one another on the farm at the Kansas State Agricultural College at Manhattan, at the various outlying substations, and upon the farms of numerous Kansas farmers. The results from these comparative tests show conclusively that the hard red winter wheats are the best adapted to our conditions.

The most productive strains of this class of wheat are the Kharkof and the Improved Turkey Red. These varieties have outyielded all others except in the extreme eastern counties of the State, where the weather conditions are more humid. In this area the soft red winter varieties, such as Fultz, Zimmerman, and Currell, seem to give the best results, especially upon bottom land.

The hard red winter varieties of wheat were imported into this State from Russia, where they had been grown for ages under semi-arid conditions similar to our own. Since their arrival here the endeavor has been made to improve them for our conditions in both yield and quality. As a result of the work done in the last ten years in breeding



Turkey Red heads. This variety of wheat is a favorite in many other States than Kansas

and distributing strains of this group of wheat, we now have varieties excellently adapted to our conditions.

We therefore recommend that every farmer in the central and western part of the State grow only wheat of these varieties, and we also advise that the farmers secure seed from within the State and as near home as possible.

The Lime You Apply

EVERYBODY is familiar with lime. It is one of the commonest of substances. Its importance in sweetening the soil, so that the clovers and alfalfa will do well in it, is also well known to every intelligent farmer. But we venture to state that there is more error and confusion in the minds of intelligent men on the subject of the various lime preparations than on any other familiar topic.

Here are a few things which the reader may or may not know.

Ray ground limestone has been found better in the long run than burnt lime. It may not give marked benefit so soon, but it will not burn up the organic matter in the soil. It cannot possibly do harm, and the burnt lime can, and often does.

The limestone does not need to be crushed as finely as many suppose, though the finer the better; but if as fine as coarse corn meal it will dissolve slowly and sweeten the soil.


A ton of raw ground limestone will go as far as 1,120 pounds of fresh-burnt lime.

Hydrated lime is simply burnt lime which has had about a third of its weight in water added. Most lime sold as "agricultural lime" is nothing more or less than lime which has been thus watered and ground.

It takes 1,480 pounds of this agricultural lime to go as far in sweetening the soil as 1,120 pounds of fresh-burnt lime. And 1,120 pounds of one or 1,480 pounds of the other are equal in sweetening power to a ton of ground limestone.

The hydrated agricultural lime is handier to use than the fresh-burnt lime, but it is not as strong—and one pays freight on the water and is obliged to haul it.

The cheapest form in which to buy lime is merely a matter of figuring, using the above quantities as a basis.



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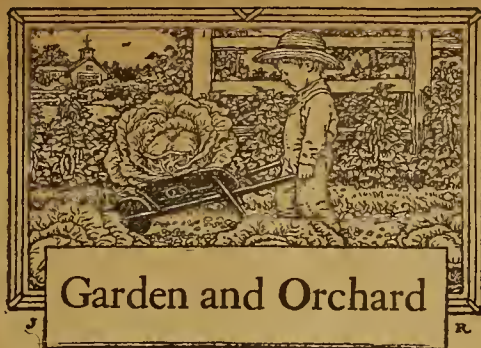
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In This Way You Can Know What You Buy

By John Ensminger

WHEN you buy a sack of seed potatoes from a northern Wisconsin grower who is a member of the potato growers' association, you know that the association authorizes the use of the label or tag, and that the shipment is pure. The sack is labeled "Standard Wisconsin Potatoes," and the variety is given. You know more than this if you stop to inquire of the secretary of the association, whose address is given on the shipment—you know where the potatoes contained in the sack were grown and under what conditions.

The reason for such a condition of marketing is to be found in the ideals and work of one man—Andrew W. Hopkins.

When Mr. Hopkins, who is with the Wisconsin College of Agriculture, realized that uniformity and standardization of all farm produce must be the watchword of all efforts which had for their ultimate object the upbuilding of Wisconsin's farm interests, he set about to accomplish those things.

Quality, Quality, Quality

Something in the nature of a standard label, based upon quality, should be adopted by each of the organizations promoting farm interests, he said.

The potato growers' association of the State, the pure-seed growers, and the horticultural society have been leaders, and as a result the use of the Hopkins label by Wisconsin farmers now stands for quality.



This label is suggested by the writer of this article as suitable for the Wisconsin cheese products. It is patterned after the labels now in use

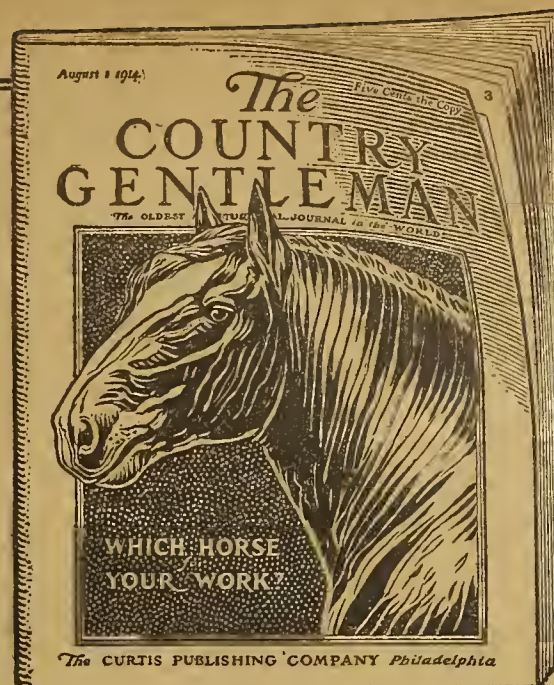
The growers of pure-bred grain will tell you the kind of seed sent you, the name, where grown, purity, germination, and the impurities, naming the number of noxious weed seeds per 1,000, which must not be more than 1 in 1,000 grains. Then, too, you will be given the name and per cent of foreign seeds contained in the shipment and the per cent of inert matter.

Already it is becoming known that shipments from the horticultural society with the label "Grown in Wisconsin" mean more than would at first be implied. If you received a box or barrel of apples from Wisconsin with the label "Grown in Wisconsin" and the phrase "We Answer Questions," your first impulse would be to write to the horticultural society of the State and find out what it all meant. Your inquiry would be answered immediately, and you would be informed that the label meant that the shipment was tested and tried, was guaranteed, in a word, by the State Horticultural Society, because the grower was complying with all requirements of the organization and was exerting every effort to send to market Wisconsin quality products.

To Own a Profitable Farm

Wisconsin is a State of small farms. Produce that is raised must be disposed of by each farmer at the best price. To own a profitable farm rather than a large one is the ambition of Wisconsin farmers, many of whom are making the production of livestock a strong feature of their farming operations. The market is therefore to be considered if the greatest returns are to be obtained.

Wisconsin is near the largest market



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"Honor Bright" Boys' Shirts and Tapeless Blouses Fast-color pongee, chambray, satens, drill and flannel made with regular low comfort collar, military collar and athletic roll cut for summer wear. **50c**

in the great Middle West—Chicago—and it became clear to those who first considered the Hopkins plan of standardization that quality must be the chief aim if Wisconsin grown products were to attain the highest price in the open market.

The cheese and butter interests of the State, with an annual value for the output of \$90,000,000, have not lost sight of the necessity for steady improvement in the quality of the butter and cheese which they manufacture, because they realize that only the best grades are wanted at fancy prices, and that seconds move slowly on the market.

The grown and made in Wisconsin idea is destined to become the State's plan, in a large measure, to increase production and stimulate farmers of the State to raise better and better products. The grown in Wisconsin idea is sure to have a national influence on standards.

A Suggestion for You



Make the hotbed serve you this season. The early crops get the price

Perhaps You Are a Middleman
By Herbert Quick

A TRUCKER who digs his potatoes and hands them over the fence to his neighbor has done business without the aid of a middleman. But very little business can be done in that way.

Commerce is built up on the services of middlemen. That is all there is to commerce. Good, efficient, honest middlemen are the great need of the world. Sometimes the middleman is a mail-order house, sometimes a commission man, sometimes a retailer. In some form or other all these and many other middlemen must exist.

Demand is a fire, and supply the water which quenches it. The middleman factor may be a hose carrying the stream from a hydrant, with only a few men working scientifically to direct the stream, or it may be a line of unskilled men passing buckets from one to another and spilling half the water en route. But the middleman factor must exist even if we are forced to supply it ourselves, or our farm produce rots on our hands.

The Business Research Bureau of Harvard University is studying the retail business to see whether it is efficient or inefficient. Every farmer who thinks of selling his farm and starting a store should scrutinize the facts unearthed by this research.

Many Retailers Are Unskilled

On the whole the retailer works for less money than almost any other member of society. If he is unskilled he probably works for less than nothing, and fails. Many retailers do not keep books, nor charge their businesses with their own salaries, nor with the rent of the buildings they occupy if they happen to own them.

Most of the trade of the world is done by retailers, and always will be. The consumers cannot ask their servants to work for less than nothing, and good workmen will not do so. It would be better for all of us if the retail business of the country were in the hands exclusively of men who would know whether they were making money or not; and decidedly better if all were making fair profits. The retailers are our servants, since they do for us work which we could not do for ourselves. It is not good for any of us when the retail trade is disorganized by the presence in it of very many men who are losing money or are so inefficient that they do not know whether they are losing or not.

The Harvard people have worked out for some sorts of trade standard sets of books by the keeping of which storekeepers may know just how they stand. Let us hope that their work may not be for naught.

The farmers, who have received a great deal of advice as to how their business should be run, are able to assure the storekeepers that while it is sometimes unpleasant to be told of shortcomings it is frequently beneficial.

The retailer is a very useful person. If a university research bureau can tell him how to become more useful everybody will be served.

SALZER'S
"Wonder" Vegetable Seeds for 12c

One package each of Phila. First Early Cabbage; May 1st Carrot; Early Cucumber; All Summer Long Lettuce; a Mixture of Onions; Juicy Radish. These six packages for 12c contain enough seed to furnish you with rich juicy vegetables, and lots and lots of them, during early Spring and Summer.

Special Offer
Above vegetable collection, together with one package each of Salzer's Radiant Sweet Peas, Elegant Asters, Petunia, Gorgeous Eschscholtzias, Blue Cornflower, Brilliant Poppies, Sunny Cosmos, all for 25c, postpaid. Or, the 7 packages Brilliant Flower Seeds only and catalog for 14c.

Another Special
Ten packages Famous Farm Seeds, including \$1,000 Marquis Wheat, Alfalfa, etc., for 10c, postpaid. Write today. Big 1915 Seed Book Free.

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2 YEARS SIZE 4-5 FT.

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My October Berries

By C. M. Anderson

MY EXPERIENCE with strawberries is limited, but I shall give it to you as it is. I plead guilty to not knowing nor even having heard of everbearing strawberries till I saw them advertised last spring.

I ordered fifty plants which came to me in good condition in April (we live in Rock County, Nebraska), and as the weather and ground were in excellent condition they were set out at once. They were hoed often, and if rain did not come when needed the hose with spray attachment was dragged into their locality.

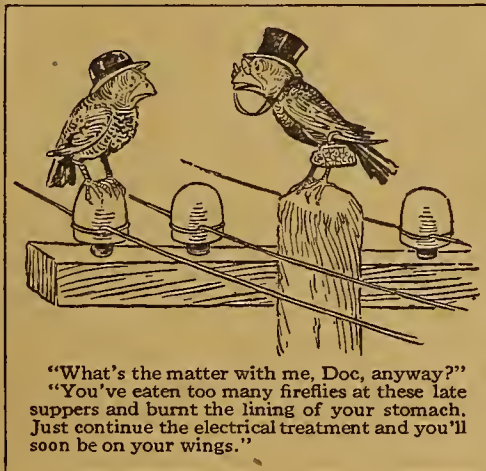
In May we got an awful hailstorm. It just ruined our garden. We had to replant everything but strawberries. A very few of them were left, but the soaking rain that came with the hail soon started them to growing. Later another hail, not so severe, came and gave them another setback, but in August they began to bear and to spread.

Of course we did not get many berries from these few plants, as not all of them bore, but nearly every morning the two babies and myself would make a rush to the strawberry patch to get some strawberries for breakfast. On October 11th Mrs. Anderson decorated twenty-two individual fruit salads with strawberries for eleven visitors and the eleven members of our own family. We had not picked any berries for several days and wished to surprise our guests. We certainly did surprise them, too.

The plants have spread wonderfully, and next year, barring hail or any other thing that destroys, I really look for fruit all summer.

I regret that I did not dig up my old patch, and that I did not put it in everbearing plants. But I was skeptical, as I know some readers must be, and I ordered only enough plants for a trial.

We cannot blame people for being skeptical about the everbearing variety. One day in October when I had a nice bunch of large, red berries down-town one man said, "My, they would be fine if they were only real!" He could not believe his own eyes. I held them for him to smell, and he said, "Why, they are real!" And then he asked many questions about them.



"What's the matter with me, Doc, anyway?" "You've eaten too many fireflies at these late suppers and burnt the lining of your stomach. Just continue the electrical treatment and you'll soon be on your wings."

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Only an expert judge of values can make a practice of buying cheap goods and saving money by it. Even he does not always succeed. The only safe and sane way is to stick to the well-advertised, trade-marked brands of goods which carry the manufacturer's guarantee of satisfaction.

Cheap goods at so-called bargain prices soon find their way to the junk pile or to the rag bag, and the buyer is forced to spend more money for a new supply.

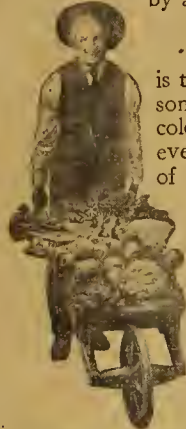
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The Gentle Liar

The Story of the Mental Adventures of Uncle Ephraim

By Anna C. Chamberlain

GOOD Uncle Ephraim Willets was of the salt of the earth—the true sort, that never did and never could lose its savor.

His genial smile, his hearty laugh, and his warm handclasp were medicine to the soul; and the mere sound of his cheery voice braced up the faint-hearted like a tonic.

"Saw the wild geese flying south this morning," said Uncle Ephraim in his cordial way to his wife as the two sat in their cozy sitting-room one November afternoon. It was a bleak, raw day without; but, inside, the grate fire gave them warmth and cheer. Aunt Martha Willets sat in the rocking-chair busily knitting. Occasionally she cast a coldly critical glance at her husband's boots, which he had slipped off to rest his feet, after his free, unconventional fashion. His stocking toes were held before the fire, evidencing their enjoyment thereof by an occasional wriggle. "There was no use in getting slippers or putting his boots away," he frequently explained to his wife, while indulging in this comfortable practice, as he would want them again, "come chore time."

Aunt Martha, whom thirty years of wedlock had not reconciled to this habit of her good husband, and whose orderly soul abhorred as dirt any matter out of place, eyed the boots with a look of stern disapproval which was by no means lost on kindly Uncle Eph. He therefore, to divert her thoughts, continued affably: "A flock o' them lighted down in our wet bottom, a thousand, I should guess. Perhaps I'll take my old shotgun down when I go for the cows and have a crack at them. Zeke Bain got a couple of dozen yesterday when he was shooting down there."

"He brought home six, I heard him telling you," returned Aunt Martha with grim precision.

"I knew 'twas several," replied Uncle Eph mildly.

"Then you hadn't ought to say a couple of dozen," censured Aunt Martha coldly; but the rebuff was lost on the genial amiability of her husband.

"Speaking of hens!" responded Uncle Eph briskly, in no way abashed by the reproof. "Them Plymouth Rocks o' yours can't anyways compare with these here new-fangled ducks everybody's a-talkin' about. Folks is saying they lay four or five hundred eggs a year."

"They claim two hundred and fifty," corrected his wife severely. "How could any fowl lay more eggs in a year than there are days?"

"They might a' been a lot of double yolks," contended Uncle Eph pleasantly; but Aunt Martha scorned a reply. For a moment the click of her flying needles was the only sound in the room, and then her husband, whose good humor was wholly frost-proof, broke in upon the chilly silence.

"Talkin' about birds! That makes me think of our old dog, Zed. He was the most intelligent animal I ever heard tell of. Seems like he understood every word of the English language. If we'd say we was a-going out for birds, out he'd go ahead of us, sneaking through the high grass so's not to drive off anything. If 'twas squirrels we'd mention, we'd find him barkin' up a tree in the woods where he'd treed one of the little crit-

ters. One day we thought we had him, for when we was a-gettin' ready to go out one of us says, 'Let's get some fish for a change,' and with that Zed disappeared. We did not think much about this, except that p'rhaps he was fooled for once in his life an' was out tryin' to scare us up some game, so we was naturally surprised to find him a-settin' on the doorstep beside a can of worms he'd been an' dug for us."

"Where'd he get the can?" objected Aunt Martha skeptically at this point.

"Possibly he hadn't put them in a can," returned her husband with an air of profound reflection, "though, for that matter, they's always plenty of empty cans back of ev'ry house," he finished triumphantly, leaving his wife for the moment without a reply, whereat Uncle Eph continued glibly:

"This here Zed was a terrible fine ratter, besides all his other cleverness. I remember one time we moved our old corncrib where the rats was

mighty thick, and it just gave that dog the time of his life. It was wonderful to see him grab each as it came, shake the life out of it, an' give it a fling as he snapped for another, keepin' sometimes five or six in the air at once."

"Ephraim!" expostulated Aunt Martha; but the narrative was too well under way to be ended thus abruptly.

"Finally the rats got comin' on so fast I thought we'd have to turn in and help the dog a bit, but Brother John held me back. 'He don't need it,' he told me, an' in a second I saw he was right."

"That there dog put on a little more speed, an' for about twenty minutes, mebbe it was a half-hour, you couldn't see any dog at all, but just a spouting geyser of rats. When they was all destroyed, I dare say the corpses of nigh two million rats lay stretched upon the ground beside that heroic dog."

"Ephraim!" protested his wife a second time. "You know that story isn't possible. Two million rats! Such misleading statements are positively sinful."

"Poh! poh! Marthy," returned Uncle Eph, somewhat flushed with his fictional efforts, but as beaming and good-natured as ever, "it didn't mislead anybody. Folks know me, I tell you. When things look grand to my eyes I fix 'em up fine in tellin' to make folks have just as pleasin' ideas as I have about 'em. Some folks take more impressin' than others," he added slyly.

"But, Ephraim," objected his wife firmly, "what would strangers think if they heard your way of talking things up so big? You ought to have seen the teacher's face when you were tellin' about killin' six ducks with one shot. I know she didn't believe you, an' that fellow of hers just snickered right out. Then that coon story of yours, about how the coons pack into the hollow trees so tight that they split the trunks, an' you can see the cracks widen as they breathe! I'd like to know what kind of a story you call that!"

"Well, now, Marthy, I did once kill two ducks with one shot," returned Uncle Eph, roused to the defensive, "but she wouldn't have any proper idea what a great thing that was, knowin' nothin' of guns, so I just said six to put the matter to her in the right light. As for the coons, they do pack in powerful tight in winter. They could split a tree right plumb open, providin' it was the right kind of a tree. I can't say I ever saw it, but it could be done. I call that a darned good story. That's what I call it."

"Ephraim!" exclaimed Aunt Marthy in her deepest chest tones, and Uncle Ephraim, now truly culpable, began to conciliate.

"Well, now, Marthy, since it troubles you, I'll be particular and say exactly how much and how many; but it won't give folks any proper ideas. It's just like paintin'. You have to put in colors you don't reely see, you know, to give distance and atmospeer. I watched that artist fellow a lot last summer, an' he put red in this shadow an' blue in that when it wasn't there at all; but everythin' looked more nateral for it. Tellin' a story's the same way. But to have peace in the family I'll talk tame an' leave out the atmospeer if I have to."

I promise it faithful," and Uncle Eph sighed resignedly and turned to his paper.

Just then the school teacher came into the room and, throwing off her wraps, sat down before the glowing grate. This young woman, who boarded in the Willets family, had a warm admiration for Uncle Eph, not only for his genuine goodness but because he was "so entertaining."

"It's getting colder," she said briskly. "Soon there'll be frost, and by and by skating. Do you skate, Mr. Willets?"

"No. Not any more, that is," replied Uncle Ephraim in muffled tones from the corner whither he had surreptitiously conveyed his boots and was cautiously putting them on. "I was a great skater when I was a little boy. My, but you ought to have seen me whizzing over our lake when I was two or three years old! Seven or eight, I mean," he added hastily with an apologetic look towards his wife. But even the presence of his stern mentor could not chill the genial effect exercised upon Uncle Eph's imagination by this kindly credulous young woman.

"We had a lake up in Minnesota," he continued, seating himself again before the fire, "just back of our house on the farm, an' we used to cross it to go to the store an' the post-office. We could skate about half the way an' then make a run through the woods. It was pretty deep woods an' considered dangerous after night."

"Did you ever go through it, Mr. Willets?" asked the teacher, who was sure that there was an entertaining story behind this preface.

"Not often," returned Uncle Ephraim with careful precision. "I was rather small to be trusted so far, but I remember I went one afternoon when Pa was away an' my two brothers had the chores to do. It was war time then, an' everybody had to have the paper every day same as they had to have breakfast. Ma called me in 'bout three o'clock in the afternoon an' said if I'd promise to go straight there, an' not loiter an' look for pretty things in the woods as I always liked to do, I might go to the post-office for the mail. Promise? Guess I would! This was a mighty big promotion from feedin' the pigs, throwin' down hay for the horses, an' all such things, just whatever the big boys hollered for me to do. Big boys ain't easy bosses for little ones, so I was glad to get off, let alone the honor of being trusted."

"So Ma she wrapped me up warm, an' I took my skates an' set out. That winter the snow had fallen before the hard frost, an' the ice was as clear and smooth as glass. The wind was straight in my face, an' cut pretty sharp, besides hinderin' me a good deal, but I consoled myself by thinkin' it would be a help in gettin' back, an' it was not long before



Inspiring his hearers with pleasing ideas

I was across the little lake an' takin' off my skates at the edge of the wood."

At this moment Aunt Martha's knitting needles clicked warningly, but Uncle Eph was under the spell of the intent look on the school teacher's face and did not heed. He went on:

"This was to me the most adventurous part of the journey. I had never before been allowed to go through this bit of forest, as wild animals had been seen there, an' it was considered dangerous. But I had often thought it over an' planned how I would drive off any wild critters I might meet there. I was no cowardly youngster; but now that I was on the spot, I forgot all about my schemes for outwittin' an' catchin' wild beasts, an' I walked slowly along, cautiously lookin' from side to side, expectin' an' almost hopin' to see some hairy form an' gleamin' eyes through the tree trunks, yet all the while sort o' prayin' inside of me that I wouldn't. Then all of a sudden I stopped short, an' my heart came into my throat with such a jump that I had to shut my mouth tight to keep it inside. There just before me, in the very path I was followin', I saw enormous bear tracks. I knew they was bear tracks 'cause bears had more than once prowled around our sheep pen in the winter time when the snow made it hard for them to get food. But these was the largest tracks I'd ever set eyes on. They weren't less than fourteen inches, an' mebbe more'n that. Of course I was scared enough to take to my heels with my face towards home, but then I knew I wouldn't have a chance to go three miles to the post-office every winter's day, an' I didn't want to turn back. So I went on, treadin' softly as I went, lookin' on all sides at once, an' tryin' my best not to breathe any at all."

At the mention of bear tracks Aunt Martha's needles began to rattle like a pair of castanets. The teacher's round eyes and expression of sympathy had, however, temporarily destroyed Uncle Eph's hearing, and his tale went on:

"Then all at once I saw the bear, an' it was a good thing that my teeth was tight shut or this time my heart would have jumped clear out of my mouth for sure. There in the crotch of a large tree the bear sat, a monster an' no mistake. He saw me too, an' appeared to admire the looks of me, for after grinnin' once or twice he started to back down out of the tree, evidently to make a nearer acquaintance with me.

"This wasn't to my notion at all, so I made a bee line for the shore, where in less than a half a minute I got on my skates an' was off on the ice.

"I didn't get there any too quick either, for I was no sooner off the bank an' out from the shore than the bear came lumbering down. Away I went, but he was handy on the ice too, an' followed me a good deal faster than I had been expectin', so that he was almost on my heels when, to escape him, I made a sudden sharp turn to the right.

"This was a lucky move, for the bear, weighing about twenty times as much as I did, an' being in no ways as supple, rolled clumsily on his huge back as he turned, an' in the time it took him to get up again I had a chance to get away.

"I thought this was a good joke on the bear an' tried it again an' again, managin' to gain a little with every turn. But by and by I found I was gettin' tired, an' then I began to wonder how I should ever get away from the hungry beast. I just couldn't keep skatin' an' dodgin' all night, an' as the best I could do now was to keep well away from his hungry jaws, how in the world was I to gain a margin of time in which to get my skates off when we reached the other side an' make a run for the house?"

By this time the teacher was completely under the spell of the tale and the thrilling situation was bringing a mist before her eyes. Even Aunt Martha was beginning to succumb to the "atmosphere" of interest, as the irregular sound of the castanets showed. But Uncle Eph was unconscious of everything but the fascination of his reminiscence. His kindly eyes glowed as he drew near the climax of his tale.

"I was bound to try for it anyway, for the idea of furnishin' a meal for that bear grew more an' more unpleasant as supper time drew near, so I made a great spurt for the landin'. I went with all my speed, but I was only a little feller,

while the bear had all the advantage of his longer legs if I was spryer in dodgin', an' I saw that he was always gainin' on me while I went straight. Then I noticed that this was because his greater bulk took more of the wind which was blowing towards the shore an' therefore helped him along. As soon as I thought of this I unbuttoned my little jacket an' holding it out on the sides, used it as a kind of a sail. This helped me a lot, an' the old bear stopped a-gainin' on me; but still I couldn't gain on him, an' there we both was, runnin' an even race, an' a steep bank to be climbed an' all of twenty rods to be run before I could reach safety.

"I was gettin' mighty tired too, so I give a sudden dodge to gain a little advantage, if I could; an' in doing this I turned directly towards the great hole in the lake where we had been cuttin' the supply of ice for the icehouse. This hole was, I guess, about twenty feet long an' eight feet across. As I saw this, a wonderful idea came into my head, an' I give another dodge an' thought hard.

"I could see, even if I was a little feller, that this new idea gave me a desperate chance; but it was a chance anyhow, an' there wasn't another that I could see. I was sure that I couldn't get my skates off an' up to the house before the bear would have his teeth into me, an' I was so tired I couldn't run much longer. So I doubled on my tracks once more an' then set out on a steady skim towards the dark open hole. When I was almost to the edge I rocked on my skates, easy like, to slow my pace, an' then gave a great spring which landed me on all fours an' panting on the ice at the other side of the hole. As I was scramblin' to my feet I heard a mighty snort an' growl, all in one, a crash of thin ice, an' then a most tremendous puffin' and splashin'. The old bear was in the water, an' I felt sure enough that he would never get out again. But I wasn't takin' any chances, an' I didn't let any grass grow under my feet as I made for the shore—if grass can grow on the ice in the dead of winter.

"Almost as fast as if the old bear was still behind me I scurried to the landing place, pulled off my skates, an' scrambled up the bank. Then I tried to catch my breath easy and put on an indifferent air as I went into the house; but it wasn't good actin'. Ma says out right away, 'For pity's sake! what ails the boy?' 'Oh, nothin',' I says. 'I've just been kilin' a bear. That's all.' The big boys give a hoot at this, but they more'n half believed it, an' they had to believe the rest in the mornin' when I took them out on the lake an' showed them the old fellow frozen fast in the ice.

"They got axes an' chopped him loose, an' then we tied ropes around him an' hitched the big team on an' hauled the carcass up to the house, an' we had bear steaks nigh about all winter. That bear must have weighed about two thousand pounds, 'I should judge," ended Uncle Ephraim in a reminiscent tone.

The school teacher had been so intensely interested in this thrilling tale that she had no eyes for anything but Uncle Ephraim's glowing face and his expressive gestures, and did not perceive the dark shadow which had slowly grown on Aunt Martha's brow; and having no ears for anything but the story she had not heard the rattle of the castanets. So she was quite startled when that good lady, dropping nearly a needleful of stiches in her agitation, asked with stern and blood-curdling emphasis:

"Ephraim Willets, just how much of that story is true?"

Uncle Eph's jaw dropped, dropped, the light of inspiration faded slowly from his beaming eyes, and his hand wandered to the shock of curly hair which he always punished in moments of embarrassment.

"Why—why—Marthy," he hesitated, "it's all true—er—that is—all—all—but that—about the bear."

"You see," he went on deprecatingly, urged to speech by her air of stony disapproval, "we had a lake back of our house up there, an' we used to cut ice from it, an' one time Ma did send me for the mail, an' I remember thinkin' that there might be a bear; an', anyhow," added Uncle Eph resentfully, "there ain't any sense in spoilin' a good story by leavin' out everythin' that didn't happen."

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2 pint bottles milk 2 teaspoonfuls salt

Take the top cream of two pint bottles of milk and add enough of the milk to make one pint. Soak the gelatine in two tablespoonfuls of the milk 10 minutes; place dish over hot water until gelatine is thoroughly dissolved. Cut the butter in small pieces and place same in a dish over hot water until the butter begins to soften; then gradually whip the milk and cream and dissolved gelatine into the butter with a Dover egg beater. After the milk is thoroughly beaten into the butter add the salt to taste.

If the milk forms keep on beating until all is mixed in. Place on ice or in a cool place until hard. If a yellow color is desired, use butter coloring.

NOTE: This mixture is intended for immediate use, and will do the work of two pounds of ordinary butter for table use and for baking cakes, muffins, etc.

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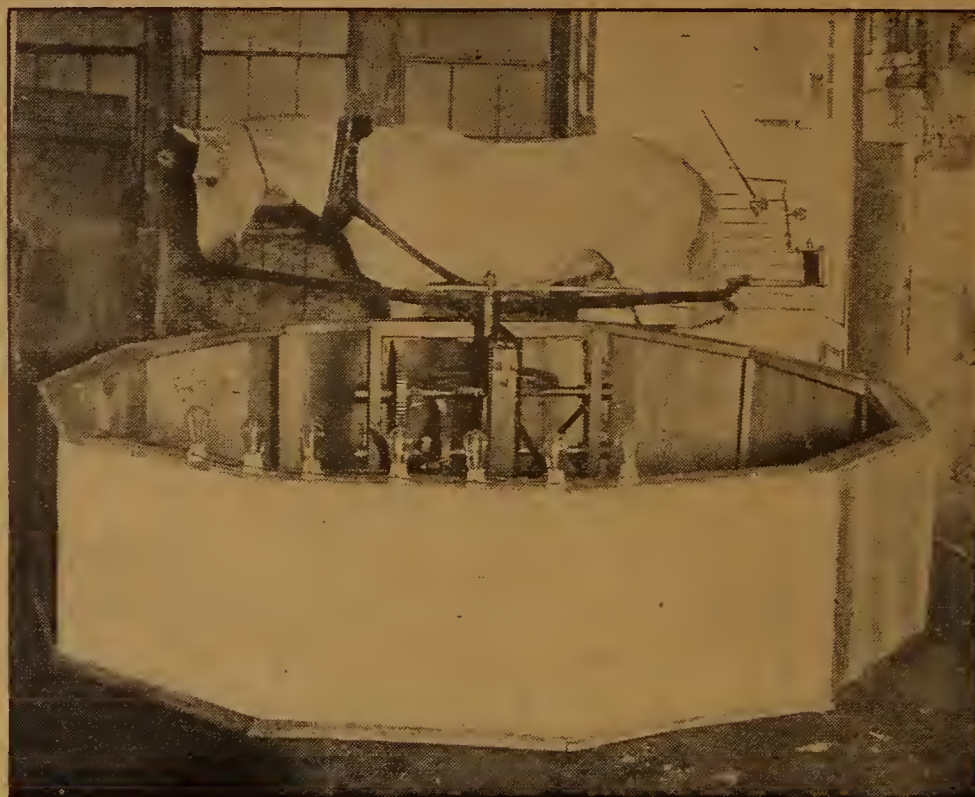
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Horse Power Generates Electricity

By J. R. Schmidt



OUR old friend, Dobbin the horse, is going into the electric-light producing business through an invention patented by Robert D. McCreery of Ohio. "If," said McCreery, "a horse can give power to a wagon, why can't he give energy to a dynamo?" In other words, a horse, figured McCreery, could be used as a one-horsepower engine. So he invented a harness attached to a set of gears which are in turn attached to a dynamo. The horse steps into the harness and starts walking around and around a 14-foot track at the rate of one mile and a half an hour, making electricity all the while. If the horse should stop, an electrically

controlled bell rings, as much as to say, "Giddap Dobbin!" and an electrically controlled whip taps him lightly on the back. The electricity Dobbin thus makes goes into a storage battery, and by working three hours during each of two days Dobbin can make enough electricity to light a 6-room house for a week. "The farmer needs light most in winter time when his horse works least," said McCreery, "and running a dynamo a few hours a day for two days in a week is one of the easiest things a horse can do. "Also," he says, "the dynamo can be hitched to a motor which will run a cream separator or an ice-cream freezer."



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Good Dairymen Want Good Cows

Here is a Simple Way of Telling Others How Good Your Stock Really Is

By John Y. Beaty

IF YOU wish to use photographs you must use those that show your best animals in their best condition. If you lead out a cow with a record of 20,000 pounds of milk a year and pose her in front of a manure pile with her fore feet lower than her hind feet and with her tail flying in the air, you would find it impossible to convince anyone that that cow was worth much. In making photographs of a dairy cow to bring out the qualities, first stand the animal on perfectly level ground. Do not put the front feet on lower or higher ground than the hind feet. Have the front feet placed well together and squarely under the body. Have the hind feet so placed that the leg on the side next the camera will be stretched back in such a way that a large part of the udder is plainly seen. Then hold the camera just a little back of the center so that you get a three-quarters view, with the rear of the

animal a little closer to the camera than the head. This will not only emphasize the development of the udder-by bringing it more nearly into the foreground, but will also emphasize the dairy type, the wedge shape. The photograph of a good cow is more attractive in an advertisement for dairy stock than the photograph of a bull. This is not merely a matter of theory, but has been proved again and again by dairy advertisers who have used photographs of both in their advertising matter. In selling heifers it has always been found that the ad which contained a photograph of one of the dams made more sales than one containing the photograph of the sire. Perhaps the reason for this is that the average dairyman is looking at the animal from the standpoint of milk production, and he sees more tangible indications in the female than in the male.

Our Live Stock Must Be Freed

THE following is a letter to FARM AND FIRESIDE from A. P. Sandles, President of the Ohio Agricultural Commission. He is interested in Ohio, but foot-and-mouth disease is the same in any other State. It must be handled with vigor. This foot-and-mouth plague will not easily be eradicated. New and continual outbreaks indicate that a big task is ahead. Stockmen must realize that they themselves must assist in this war to free the Middle West from this blight. To conceal or temporize with this disease will delay its final eradication and increase the loss and inconvenience to stock owners therefrom. Uncle Sam has learned by past experience that drastic rules and methods are necessary to successfully control and eradicate this disease. It must be dealt with as a community would deal with a mad dog. In the past, Ohio has been fortunate by not having been afflicted with many dangerously contagious and infectious diseases in its live stock. Therefore quarantine regulations naturally were unpopular and caused some folks to be restless under restraint. However, the public in general has co-operated in a

remarkable degree with the authorities in combating the present outbreak. Ohio has not yet learned how other States dread and fear this disease, and how strenuously they are safeguarding themselves against shipments from other States, especially Ohio. Many States have the impression that the Ohio quarantine was not enforced as drastically as it should have been, and further that the quarantine was lifted too soon. Because of this impression many States are prejudiced against Ohio live stock and will not receive same. A clean bill of health is the only asset that will restore the confidence of other States in Ohio. Complete eradication is the one thing to be sought and demonstrated by every breeder and every live-stock owner. FRANK KLEINHEINZ says that sheep should be shorn and given a foot-trim before being put on pasture in the spring. While the increase in the yolk from the fresh pasture makes the wool a little heavier, the sheep lose more in weight in the warm spring days than this amounts to, and the laxative effect of the new grass makes the wool dirty.

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Heals Without a Scar

Before AFTER USING

Cow-Barn Counsel

By D. S. Burch

COW BARNs are built for service, for display, or both. Barns built for service are best, for they are most convenient and comfortable. Such barns are usually planned and built by the men who work in them. Barns built for display often arise from a fancy or a desire for unusual effects. The men who design them seldom understand the work of caring for cows and the handling of milk.

Hence artistic barns are often impractical and inconvenient. Barns which are both serviceable and beautiful are as rare as they are good.

A most interesting study of dairy barns has lately been made by W. D. Nicholls of the Kentucky Experiment Station, and to persons who are looking for the best way to get barn work done, these suggestions by Mr. Nicholls are worth considering.

Fifty dollars per cow is enough to put in a dairy barn.

Overhead lofts for hay afford cheapest hay storage.

Conveniences for doing the heavy and routine work are desirable because dairy work must be done twice a day every day. An extra step at each milking means 730 extra steps a year.

Provide plenty of light, it is the best and cheapest germicide.

Have the foundation high enough to protect sills and posts from decay.

Have doors so arranged that cows can be turned in and out of stable at the rear end.

Cover the barnyard with broken stone or cinders, thus helping to keep the barn clean.

Thirty feet wide is the narrowest a stable should be made if you are going to have two rows of cows, as is customary and best.

Eight feet is the best height of the ceiling in cow stables for temperate climates; seven and one-half feet is best in very cold climates.

The plank frame barn has many advantages over timber framing, and is becoming more popular.

Gutters should be at least fourteen inches wide and four inches deep.

Cow stalls should be three and one-half feet wide and five feet from manger to gutter for the average cow.

A manure carrier on a rigid track is more satisfactory than on a cable.

Concrete floors laid with day labor, the farmer furnishing the teams, gravel, and sand, cost about five cents per square foot.

Square-cornered barns are more practical than round barns. The few advantages of a round barn are outweighed by the necessity of too many supporting timbers, difficulty of unloading hay and, with larger sizes, the further difficulty of lighting the interior.

The Headwork Shop

Coax Rats to Lye

BOIL concentrated lye in a small amount of water till it forms a thick paste. Then take a bacon rind, tack to a wide board, and around the bacon rind spread the lye. Place the board so rats can easily find it. In attempting to get the rind the rats get the lye on their feet. The lye will sting them and they will lick it off and die from its effects. I have used this method most successfully.

Mrs. W. C. LEAR.

Hose for Leveling

THE sketch shows a water level that we have used for years. It is splendid for leveling ditches, foundations, and elevations of land. The rubber hose can be any length and any size from one half an inch up.

At each end I have a gravity-separator gauge. I had a tinner make the connection with the hose. Fill the hose nearly full of water and take the end to the point to be leveled. The water in the gauge at each end will always be the same height and you can see the difference in the ground level.

W. M. HARDY.

Bran-Sack Smoker Cartridges

TO MAKE smoker cartridges for bees I take a bran sack, and after rolling it up tie at intervals according to depth of fire box, and cut off the desired lengths with a hatchet. I then dip one end of each cartridge in a strong solution of saltpeter, made by putting ordinary saltpeter in a small quantity of hot water till no more will dissolve.

Cartridges treated in this way will light easily even on a windy day, and they give a strong pungent odor. Besides, they will not go out even if the smoker is left standing four or five hours. Take care not to use too much smoke, or you may taint the honey.

CLIFFORD E. STERNBERG.

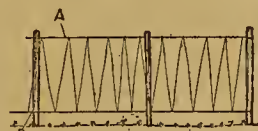
Cool Water All Day

HAVING to take enough drinking water to last all day I constructed the device shown in the sketch for keeping it cool. I made a box 2 feet high and 18 inches wide and deep, and into it put a 5-gallon vinegar keg. Around the keg I put sawdust filling. Small blocks (BBB) nailed on the ends of the keg and also onto boards AA made room for sawdust insulation at both ends. The boards (AA) are nailed to the box and thus keep the keg firmly in place. A 1 1/4-inch gas pipe extends through the top of the keg and box, and is used for filling.

The side through which the spigot comes is nailed on last so as to be easily removed if desired. I put a blanket over the top of the box and the water keeps almost as cool as when it came from the well.

RALPH G. JONES.

Trellis You Can Hoe Under



TAKE stout stakes about 6 feet long, sharpen and drive them in line about 10 feet apart. Bore 3/8-inch holes in top of stake and about 8 inches from the ground. Put wires A and B through these holes, stretch, and fasten to the end post.

When the hills of beans are up, run strings between the wires. There is nothing below to interfere with cultivation. After the crop has been gathered cut the strings, pull out the wires, and put away the trellis for next year.

G. FRENARD.

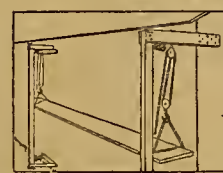
Tire Tape for Tree Repair

A YEAR ago in springtime a small boy tried to climb my little cherry tree, and split down one of the branches. Not having grafting wax on hand, I bound it up with tire tape (of which I always have plenty, as I am a shopman), bracing it to the other branches.

Upon cutting away the tape the following spring, I found the branch had grown together perfectly with a clean, solid joint. I have used the tire tape lately on shrubs and berry bushes, and it seems to be just the thing. Next year I am going to put a couple of grafts on an apple tree, and I shall use it in place of wax, as it will make a water and airtight cap, and insects stay away from it.

LLOYD E. POTTER.

To Make a Scaffold Quickly



WHEN a man makes a business of painting houses he uses two big hooks which are attached to the roof and from which are suspended block and tackle.

tackle in which to swing a plank as a scaffold. A farmer does not have enough painting to do to make it worth while to purchase these large hooks, but it is quite easy to rig up a system that will be of great service, convenience, and safety.

This system consists of two uprights which run from the ground to a point opposite the roof, and are held out about 4 feet from the side of the house by braces attached to the wall of the house. These uprights are braced as far apart as the length of the plank to be used. A 2x4 is run from the top of the upright to the house, and from this is suspended a block and tackle. The plank is fastened to this rope by a loop which is wound about the end of the plank twice and then looped over the hook on the end of the block and tackle.

With a man on either end of the plank it may be lifted to any height by both men at once. When the proper height is reached the end of the rope is fastened about the hook and the men begin the painting. One man can operate this device by raising one end a short distance and then going to the other end and raising that. This system of scaffolding is much cheaper and much more quickly put up than scaffolding made entirely of lumber.

JOHN Y. BEATY.



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One Woman's Turkeys

How She Has Learned to Breed and Raise Them Profitably

By Margaret Mahaney

YOU who are interested in raising turkeys will have to raise them as you do good common chickens if you succeed. Give your turkeys care and you will get results that will surprise you.

Place your runs on a side hill with plenty of shade, and use colony houses 4 feet long, 3 feet wide and 4½ feet high.

In each house place twelve young poults with the mother hen until they weigh two pounds, then divide them up into additional houses. Move the runs every day and keep the houses good and clean. Whitewash your coops and, above all, keep vermin off your turkeys, for if any bird is a breeder of vermin a turkey is, especially when it is young.

Feed them plenty of sour milk, with all the lettuce they will eat. Once a week give them a good dose of Epsom salts, say one-half a teaspoonful to a pint of milk for twelve turkeys. Give them the salts in the morning before their food. At night give one-half a teaspoonful of sulphate of iron to two quarts of milk for twelve turkeys. Repeat this twice a week.

Keep your turkeys in out of the wet until they are weighing seven and eight pounds.

Sulphur is a Good Disinfectant

Vermin are the greatest pests. They will breed in one night. If you go into the turkey house at night when the hen is mothering her young, raise up the turkey's wings and sprinkle some sulphur lightly under them. The hen will perspire from the heat of all the young turkeys and that sulphur will spread all over the little birds and prevent lice. Sulphur is a good disinfectant, and this method is much the easier way to dust your turkeys. If you dust the little birds twice a week until they can dust themselves properly vermin will be prevented.

A great many people come and go to my place. Each one has a different tale to tell. I had a man here just recently who told me that his breeders—hens and toms—were sick. He told me that his tom was standing around with his head all black and the droppings yellow. I inquired of that man if his tom was molting. He told me that he was.

Many people have just that same story, and I am going to give you a little advice on what to do for your turkeys at a period of that kind.

Yard up those turkeys.

Put them away from all the rest.

Give them a dose of Epsom salts or some kind of a physic.

Take a long-neck bottle and put in it about one-half cupful of scalded milk, a shake of red pepper, a little whisky, and give it to the turkeys. This will start them on the road to recovery.

Then go to your druggist and get one-half pound of ginger, two tablespoonfuls sulphate of iron, one teaspoonful salicylate of soda, add a teaspoonful of turpentine and water enough to moisten. Make into good-sized pills and give it to the ailing turkeys three times a day. You can also give these pills to your turkeys during the molting season to help keep them in good condition.

Place a little of this preparation in the drinking water and you will find it of great benefit.

I brought a beautiful tom and hen from Ohio. Both of them soon were

ailing and their heads turned black. I had to yard them up for two weeks, but they came out in fine shape.

When a turkey is molting it is a very delicate bird. It will stand around all hunched up, looking anything but prosperous for three or four weeks. If it is a rainy season I house them together until they are over their molting.

How many people come here with the complaint that their turkey hens die on the nest when sitting! A turkey hen on the nest is very apt to take what I call blackhead. She is a close sitter and will starve herself by sitting too steadily.

The reason why turkey hens take sick while sitting is because they go too long without food or water. The throat becomes parched and dry, and what is called the "whistle" seems to dry up close to the neck. Then you will know that your turkey has blackhead or is going to have it. That is the one sign that I have now with my young turkeys. I look them all over very carefully, and if I see one with the "whistle" drawn up I know that I will have a case of blackhead sooner or later. That turkey will seem to be eating, but there is hardly



Miss Mahaney, the author of this article, lives in Massachusetts. She succeeds with turkeys when most fail

a particle of food that passes into the crop. As I stated before, its throat seems to have contracted. That is why I use a long-neck bottle in dosing sitting turkey hens or young poults.

I give them a good dose of warm milk with a little stimulant in it. Take the hen off the nest and let her run, and you will soon find out from the color of her droppings what the trouble is.

The next thing to do is to replace the sick turkey with another hen. It is very hard to cure a sick hen on a nest. The heat of incubation is very apt to keep her in a weakened condition.

In a severe case of that kind the blackhead pills just described are required every hour until her droppings become normal.

When the sitting hen has a full crop, give about six grains of sulphate of soda with a tablespoonful of milk three times a day. That will start the digestion.

The only trouble I have is from the heat. In the yards where I breed my turkeys the temperature runs very high, sometimes up to 110 degrees. I have a very cool woodlot that slopes down on a side hill where there is always a breeze. I am going to fence the lot so that I

shall have plenty of cool shade in which to keep them on real hot summer days.

The only thing my turkeys suffer from is the change in temperature. When it is a very hot day give your turkeys a small dose of Epsom salts. That will help to keep their blood cool. If it gets cooler in the evening, or if a spell of cool weather comes, put a few drops of aconite in the drinking water. That will prevent colds or fever.

My system of feeding young poults is very simple, and is based on the plan of feeding all the sour milk that can be spared and all the lettuce they can eat during the first six weeks or two months of their lives. I plant a field of lettuce for this purpose.

Green Food is a Necessity

The first food is given forty to forty-eight hours after hatching and consists of one part of hard-boiled eggs, three parts dandelion cut fine and a shake of red pepper. The poults should have all the lettuce or other green food they will eat, from the first, also powdered charcoal and fine grit.

My way of supplying the grit is to take some quicklime, slake it, put half sand with it and make a sort of soft mush out of it. Place this on a board to dry, then crumble it up and leave it around where the young turkeys can get it.

After poults are three or four days old I feed bread and milk squeezed dry.

The coops and runs should be kept dry, warm, clean, and sanitary in all respects at all times. Let them out in the runs for two or three hours late in the forenoon, and in the afternoon until three or four o'clock, but do not let them out in damp weather before they are nine or ten weeks old.

One of my secrets of success in raising turkeys is keeping the droppings a bright green color by feeding plenty of lettuce and other green stuff which keeps their livers in good working condition.

After the poults get old enough to let out of the run I give them their liberty for three or four hours at a time. They are then tired and want to be yarded.

I find it better not to feed heavily at night, so as to give plenty of time to have everything digested by morning. They then come to their morning meal with a good appetite.

A large proportion of the young turkeys that die are overfed with too much concentrated food and do not get enough green food and milk to take the place of insects and unlimited green food that are found when they are running wild.

We should remember that the turkey is a very delicate bird. Its ailments seem to lodge in the bowels and liver, but even these, if taken in time, can be prevented. A little precaution is worth a pound of cure, and a few drops of this and that, as I have prescribed, is better than much medicine late in the sickness.

EDITORIAL NOTE—A study of Miss Mahaney's turkey-raising system will show that she employs much the same principles as advocated in the article published in FARM AND FIRESIDE last year, contributed by Dr. Philip B. Hadley, poultry expert at the Rhode Island Experiment Station. A number of FARM AND FIRESIDE poultry raisers have advised us that excellent success in raising turkeys has followed the carrying out of the ideas advocated by Doctor Hadley.



"Give your turkeys plenty of room," said the old teaching. But Miss Mahaney does not have it and yet raises good turkeys. This picture shows how turkeys take to plenty of range. This flock numbers 1,300, and was raised at Livingston, Cal.

A Woman You Would Like to Know

By Anna B. Taft

ONE of the best country ministers it has been my experience to meet is a woman, the pastor of a Unitarian Church up in the hills of New England.

There is no more difficult and disheartening field for a country minister than the hill towns of New England. In the older sections, where the rural exodus has been greatest, the remnant of the population is depleted in fiber by the going out of the stronger members of the family and the intermarriage of those who remain.

As I went around among the people in this little community, I found adherents of almost every denomination known to me, but I found there was just one person who had a real grip on the community, for whom everyone had a good word, and to whom everyone turned in his hour of grief and need. This person was the Unitarian minister in the little church three miles away.

When Miss Brown, as we shall call her, took this church twelve years ago, the battle was a losing one. The people of the parish had decided that the church would not exist much longer, so they were using their little endowment for the running expenses of the society.

Miss Brown looked over the field and saw that this church stood in the midst of a section that had many unchurched outlying sections. In the spirit of service, with no thought of proselyting, she started in to make this little church serve the population round about. She sought to emphasize only those things that the churches held in common, and to meet these people and their needs in the spirit of the Master, which was the spirit of love and service. Many were the schoolhouse meetings that she held, bringing her fine enthusiasm into these bare, forlorn buildings where adults had to use seats built for children, with no musical instrument but an occasional wheezy organ. The audiences that gathered from long distances showed the hunger for worship that had not died out in spite of the neglect in giving opportunities for public service.

When Miss Brown went to Eldridge there had been no Sunday school for over two years, and in her first survey of the field she could find only four pupils that seemed to be available. Realizing that even four children needed

religious training, she gathered them together and organized a children's class. This rapidly developed into a Sunday school, and in a few months they had an average attendance of thirty, which in reality was as much as the little community could furnish. This Sunday school was made particularly attractive through Miss Brown's broad vision and unusual ability.

One peculiarity of Eldridge is the large number of dependent children, wards of the state, who are boarded in private families. This type of child is both an opportunity and a problem. Most of these children lacked the fundamental elements of morality. To meet their particular need Miss Brown tried to have the work of the church very practical.

Another power in this church is the women's organization. But aside from the usual work of such a society in the church it has extended its interests in a civic way to the whole community. A watering trough for the village, the promotion of the social life of the community, and the furnishing of various types of amusement to the young people have

all been a part of their endeavor. At the regular meetings interesting papers on live topics of the day, also subjects of art and literature, have been presented. Work of this kind has helped to give this organization the type of influence of a woman's club of the best character, with the addition of a strong religious motive.

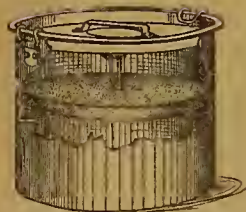
One very beautiful event since the coming of Miss Brown has been the presentation to the community of a new church building by the grandson of the first minister, as a memorial to his grandfather. The dedication of this church was celebrated in the manner of an "old home week." Much interest was aroused in the success of the church work.

It should be remembered that this growing work has been fostered in the very years in which the population has been steadily falling off. Eldridge is in no sense an exceptional hill town, and this splendid work has been carried on under the most difficult conditions. It is Miss Brown herself who says, "The country parish is only small to the small man or woman. For those who are trying to do God's work in the world it offers splendid inducements, and the rewards are as great as in larger places."

Dora's Helpful Husband

He It Was Who Suggested the Fireless Cooker

By Avis Gordon Vestal



In this vessel the cooking can start on the stove and be finished in the cooker

socks while John repaid her wifely services by reading aloud from a farm journal by whose teachings he was steadily improving his farming practice.

"Now, now," chided her husband, who is more judicious of temperament, "hold your judgment a bit! People who jump to conclusions without first learning the facts never get out of life what is properly coming to them."

Dora has lived with John several years since then, and she has learned to make this precept a guide in her life. Since Mistress Delaven has become ever alert to learn of new things and to make experiments in her home, she has improved her housework as much as her husband has his farming, and she has learned to save her own time and strength as well.

From this evening date Dora's efforts to save herself by the use of better working equipment. Dora listened while John read on about the hay box, and seconded his suggestion, "Let's try it and find out for ourselves."

"You might call that hay box the mother of the manufactured cooker you see in my kitchen to-day," Dora told me. "John brought a stout dry-goods box from town, and in a few minutes put hinges and a clasp to its cover. He brought it into the house nearly filled with hay, in which I made depressions or 'nests' to fit two enamel buckets with tight lids, and bails that would not be in the way. I stuffed a calico pillow with hay, and it fitted over the tops of the buckets and filled the box up closely to the lid."

How to Use the Cooker

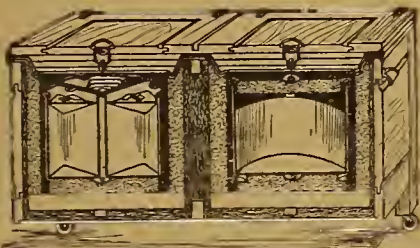
"Did it work?" I asked.

"We were glad to find it really did what we had read it would. Now, oatmeal and corn-meal mush and other breakfast cereals are of finest flavor and consistency, and more digestible too, if cooked slowly a long time. The starch needs to absorb much water, and cook long enough for its particles to burst, while the woody fiber in the oats needs a long period to soften. Oatmeal cooked in the 'fireless' overnight with enough water is a creamy, soft jelly not to be mentioned in the same breath with oatmeal cooked half an hour in the morning upon the stove and served stiff and tasteless and sticky."

"Well, how does the cooker cook?" I persisted.

"It's this way. Food cooked upon the stove receives heat from beneath, and only a part of this heat acts to cook the food because much heat is wasted by radiating out into the room from the top of the stove and from the sides of the cooking vessel. If all of the heat put into a kettle of food could be kept there to be used for cooking, much less heat would be needed."

"Well, I put my oatmeal, for instance, into the cooker bucket with its boiling, salted water, and boil it fifteen minutes. It is important that all of the food be thoroughly heated to the center while on



You will want a cooker that is well insulated, for on this feature depends the success of your work. The compartment on the left contains several of the triangular vessels. These make possible the cooking of many different things at the same time

the fire. Then I put on the lid and lift the bucket quickly to its nest in the hay, and shut it in overnight. The hay is what they call a good non-conductor of heat. The heat stored in the food while on the stove, and kept in by the bed of hay, cooks the cereal without the addition of more heat. Another way to say it is, that the hay conserves the heat already in the vessel of food. Other things that serve the same purpose in packing a home-made cooker box are feathers, paper, excelsior, asbestos, wool."

"Could you cook any amount equally well?" I continued.

EW

"No. A large vessel of food has more heat stored in it than a very small one. I found a vessel should be used that fits the food without an empty air space beneath the lid to rob the food of heat. I discovered also that vegetables and meat should have a generous amount of boiling water around them. A bucket filled full of potatoes with just enough water to fill in the cracks would not be successful."

"How long did you cook things upon the stove?"

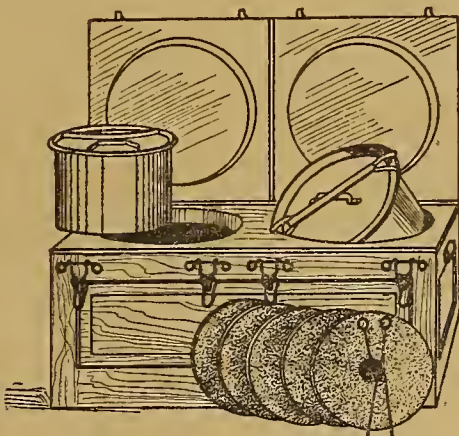
"At least until boiling throughout. Usually ten minutes for potatoes or macaroni. Things requiring a very long cooking, like beef and beans, I cooked for a third of their usual time, and then removed them later from the cooker and reheated them once. It was not an unqualified success with meat; but very successful, and well worth the having, for cereals and starchy vegetables and desserts like tapioca and puddings."

Manufactured Cookers

"And the new cooker you use now?"

"John saw it in town and surprised me with it on my birthday. It does all the hay box did, but even more efficiently, since it is better insulated to retain the heat. Its service, however, is immensely greater than that of the hay box, for I can cook practically anything with it."

"It is not only better packed but more sanitary, for the compartments, or wells, to exactly fit the buckets, are lined with



Cookers are of several sizes. The radiators here placed in front of the cooker make the work of the "fireless" very satisfactory

metal, easy to wipe clean, and letting no steam into the packing.

"The vessels themselves are specially made for the purpose, of aluminum, which is light in weight, very enduring in wear, and with locked covers. If I like, instead of one bucket to a compartment I can get either two or three smaller ones to fit together."

"Open the box, Dora, and show me how it does the cooking," I pleaded.

"Gladly. This smaller compartment I use for foods that I boil or stew. I lay this heat-retaining radiator on the top of my oil stove for fifteen to twenty minutes. The time varies with the amount and kind of food and how hot a fire you have, but my cook book tells me how to test them. A helpful book with full directions for many recipes is given with the cooker. Some cookers have soapstone radiators, others have metal. I set the food on the radiator to warm with it. Then I lift the radiator with a special hook, place it in the bottom of the compartment, set the food on it, and close it up for the required time. That is cooking by radiated heat, while the hay box cooks only by retained heat."

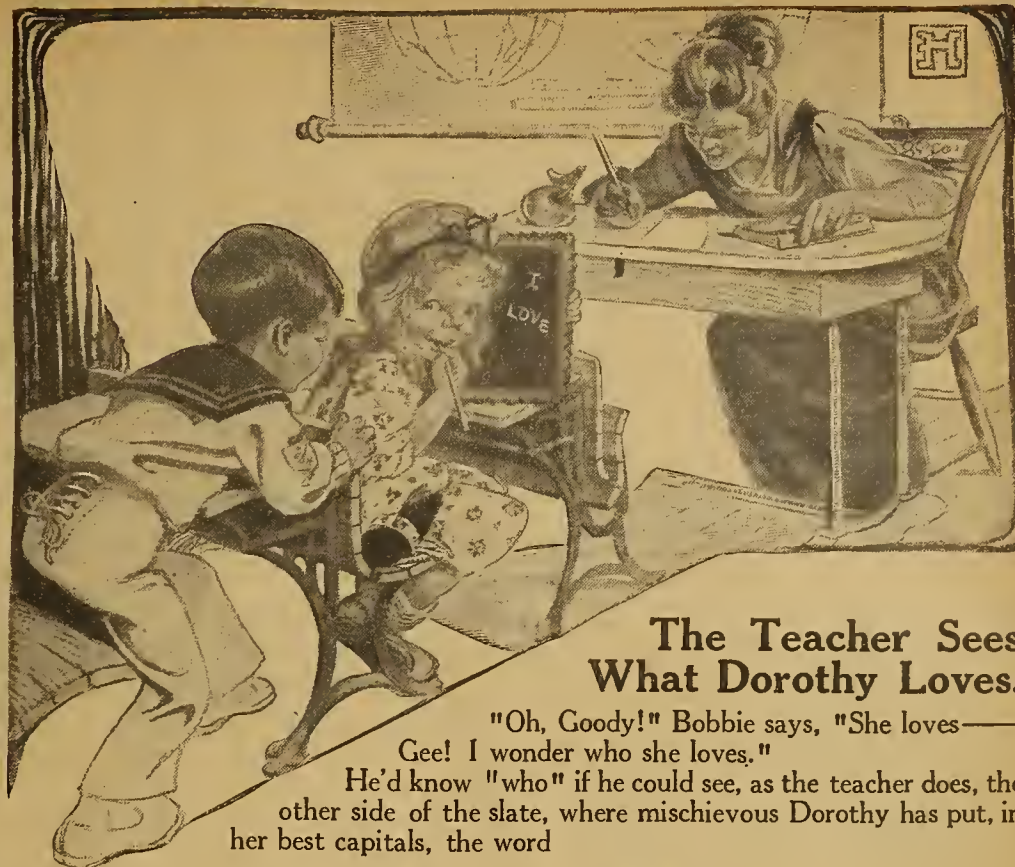
"But can you really roast and bake in this box?"

"Sure as sure! I use the larger compartment and put the meat or beans in the largest utensil with one heated radiator beneath and a second one above. There is a rack to be used in the same well when I bake pies or cake or biscuits. There can be no evaporation as in the oven, so the roasts do not get dry or hard."

"Does the fireless afford all of the savings claimed for it?" I persisted.

"It really does save fuel, especially with meats, beans, beets, steamed brown bread, and cereals that need long cooking. It saves overheating the kitchen—and me—through the long hot summer, for I start the day's cooking on the stove in the morning and then turn out the fire, and the meal is hot and ready to serve at dinner time. I find I can try out lard in the cooker, cook fruit and string-beans before canning, or set the bread sponge overnight in winter to keep it from chilling."

For names of manufacturers of fireless cookers address Fireside Editor, Farm and Fireside, Springfield, Ohio.



The Teacher Sees What Dorothy Loves.

"Oh, Goody!" Bobbie says, "She loves—Gee! I wonder who she loves."

He'd know "who" if he could see, as the teacher does, the other side of the slate, where mischievous Dorothy has put, in her best capitals, the word

JELL-O

What Dorothy wrote was, "I love Jell-O," and Bobbie couldn't object to that, for probably he likes Jell-O himself more than he loves any girl.

All children love Jell-O, and as it is one of those good things to eat that seem to agree with everybody, it is given to them very freely by thoughtful parents.

It can be made in a minute, with the utmost ease, and at a cost of ten cents, into desserts of the most exquisite delicacy and beauty.

It is put up in seven pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Cherry, Peach, Chocolate.

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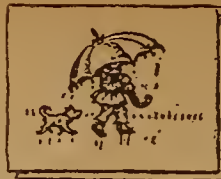
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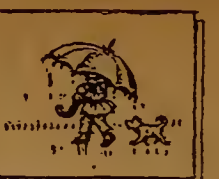
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Our Children's Page



Sometimes Dolly and I have tea together



When washday comes

Little Puppy Curly-Ears

By Harry Whittier Frees

Copyright by Harry Whittier Frees

I'M JUST a wee little puppy dog and my name is Puppy Curly-Ears. I live in Doggieland, which is far, far away from the land of little girls and boys.

I often wonder what little girls and boys are like. Mommykins tells me that sometimes they pull our ears and pinch our tails and are not a bit nice. But I guess they are not all alike.

I'm sure it would be nice to belong to some little girl who would call me her own dear Puppy Curly-Ears. Then I could cuddle up in her lap to be petted, and touch her cheeks with my little pink tongue every time I wanted to kiss her. Maybe some day Santa Claus will take me to the land of little girls and boys and give me to one of them for a Christmas present.

Last Christmas Santa Claus brought me lots and lots of things. Little Tommy Bright-Eyes, who lives next door, says there is no Santa Claus. But I guess he doesn't know. 'Cause if there was no Santa I would never have gotten all the nice things I did. I wrote him a letter before Christmas and he brought me just what I wanted.

There was a big red ball to roll about, and a little woolly sheep to play with. And right under the Christmas tree was a boxful of little candy bones.

But above all, dear Santa brought me a dolly. She's just the sweetest dolly you ever saw, and I could hug her 'most to pieces. I like my ball and the wool sheep too, but best of all I love my dolly. The whole of Christmas day I held her in my paws, while I sat and rocked her in my little rocking-chair.

Mommykins likes my dolly too, and so does little Tommy Bright-Eyes, only he is always teasing her. One day he drew a picture of a horrid lion on my slate. It was just a awful lion—like it wanted to gobble you right up! I'm sure poor Dolly was scared half to death. 'Cause I know I was.

The Way I Take Care of Dolly

Every morning when the weather's nice I take Dolly out for an airing. I put her in her little cart and wheel her about the town. All the doggies that we pass nod to us with a pleasant smile. I'm sure it is because they all like Dolly.

Dolly never cries or is naughty. One day she fell down the stairs and went bumpity-bump all the way to the bottom, but she never cried a bit. I know it must have hurt just drefful. I felt so sorry for her that I nearly cried myself. It was a wonder she did not break all her bones. The only place she was hurt was a scratch on her nose. So I cuddled her up in my paws and kissed it well again.

Sometimes Dolly and I have tea together, and we have the jolliest time you could think of. I pour out the tea in my little china cups and put in a little sugar and cream. It seems very queer that Dolly never drinks her tea. She always smiles while I am making it, just as though she was very fond of it, but she never tastes it. But then, you see, the tea is never wasted. I always drink my own little cupful, and Dolly's too.

One day I asked little Tommy Bright-Eyes to have tea with Dolly and me, but I shall never do so again. He was not the least bit polite. As soon as my back was turned he drank all of the tea out of the teapot and emptied the sugar out of the sugar bowl into his jacket pocket.

When washday comes I'm very careful to have Dolly's frocks out on the line as early as I can. She never gets herself very dirty, so the washing does not take me very long. Sometimes Dolly will sit by the washtub till I have all the clothes hung on the line.

I make all of Dolly's clothes myself, and I'm sure she thinks them very nice. No matter what I make them out of they always seem to please Dolly. She is not a bit proud, and thinks just as much of a dress made out of calico as one made out of silk.

When bedtime comes I undress Dolly first. When I get ready myself we snuggle up in bed together. I hold her tight in my paws while we are sound asleep, so that nothing can harm her.

How I Went to Dollyland

Often Dolly does not go to sleep till long after I do. Maybe she stays awake to see the fairies, for Mommykins tells me that Doggieland is full of fairies. I've looked for them myself, and even made believe that I was sound asleep so that they would come. But I guess they only show themselves when I am really and truly asleep.

One night I dreamt that Dolly took me to visit the land of the dollies. There were ever and ever so many dollies there, and all seemed as happy as could be.

There were big ones and little ones, fat ones and thin ones, tall ones and short ones, and black ones and white ones. Some of them wore the grandest of dresses, all lace and spangles; while others were only poor little bumpy-dumpy things in calico. But the cutest of them all were little pickaninny dolls with funny black faces. They smiled at us until they showed all of their little white teeth.

A pretty little boy doll dressed like a soldier came up to Dolly and me and asked us whether we would like to meet the king and queen of Dollyland.

Of course Dolly knew just how they looked, but I was so anxious to see them that I could hardly wait for the little toy soldier to show us the way to the palace.

A whole band of little dolly soldiers, dressed just like the one that was with us, guarded the entrance to the palace. The captain gave a salute with his little tin sword and we all passed inside. A few moments later we were taken before the king and queen, who seemed very glad to see us.

They both shook me by the paw, while the queen kissed Dolly on both of her pink cheeks. After we had talked a while, the king and queen took us into another room for dinner.

And you never saw so many good things to eat. There were dishes and dishes full of goodies that I had never tasted before, and each one tasted better than the last.

When dinner was over Dolly and I said good-by to the king and queen after we had both thanked them. Our little soldier guide then took us back to the very spot from which we had started.

My Letter to the Sandman

The next morning when I awoke I tried to get Dolly to tell me more about Dollyland. But she never said a word. She only smiled at me as though she thought it very strange that I should expect her to talk about it.

Maybe sometime Dolly and I will visit Dollyland again. Mommykins said it all depended upon the Sandman. So I wrote him:

"DEAR SANDMAN: You who scatter grain and fill our eyes with sand, please stoke the engine of the train that runs to Dollyland. And toss us up right in the car, and make the whistles scream, so we may ride both fast and far to where the dollies dream."



We snuggle up in bed together



I cuddle her up in my paws



When the weather's nice

The Brown Mouse

Continued from Page 17

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to the institutions of the Woodruff District as handed down by the fathers was not quite of the thick-and-thin type. For he had suggested that Jennie might have been sincere in rendering her decision, and that some people agreed with her; so Mrs. Bronson, while consorting with the censorious Mrs. Bonner, evinced restiveness when the school and its work was condemned.

Was not her Newton in charge of a part of this show? Had he not taken great interest in the project? Was he not an open and defiant champion of Jim Irwin and a constant and enthusiastic attendant upon not only his classes but a variety of evening and Saturday affairs at which the children studied arithmetic, grammar, geography, writing, and spelling by working on cows, pigs, chickens, grains, grasses, soils, and weeds? And had not Newton become a better boy—a wonderfully better boy?

Mrs. Bronson's heart was filled with resentment that she also could not be enrolled among Jim Irwin's supporters. And when Mrs. Bonner sneered at the buttonholes and cookies, Mrs. Bronson, knowing how the little fingers had puzzled themselves over the one, and young faces had become flourey and red over the other, flared up a little.

"And I don't see," said she, "anything to laugh at when the young girls do the best they can to make themselves capable housekeepers. I'd like to help 'em!"

She turned to Mrs. Bonner as if to add, "If this be treason, make the most of it!" but that lady was far too good a diplomat to be cornered in the same enclosure with a rupture of relations.

"And quite right too," said she, "in the proper place, and at the proper time. The little things ought to be helped by every real woman—of course."

"Of course," repeated Mrs. Bronson. "At home, now, and by their mothers," added Mrs. Bonner.

"Well," said Mrs. Bronson, "take them Simms girls, now. They have to have help outside their home if they are ever going to be like other folks."

"Yes," agreed Mrs. Bonner, "and a lot more help than a farm hand can give 'em in school. Pretty poor trash, they, and I shouldn't wonder if there was a lot we don't know about why they come North."

"As for that," replied Mrs. Bronson, "I don't know as it's any of my business so long as they behave themselves."

Again Mrs. Bonner felt the situation getting out of hand, and again she returned to the task of keeping Mrs. Bronson in alignment with the forces of accepted Woodruff District conditions.

"Ain't it some of your business?" she queried. "I wonder now! By the way Newtie keeps his eyes on that Simms girl I shouldn't wonder if it might turn out your business."

"Pshaw!" scoffed Mrs. Bronson.

"Puppy love!"
"You can't tell how far it'll go," persisted Mrs. Bonner. "I tell you these schools are getting to be nothing more than sparkin' bees, from the county superintendent down."

"Well, maybe," said Mrs. Bronson, "but I don't see sparkin' in everything boys and girls do as quick as some."

"I wonder," said Mrs. Bonner, "if Colonel Woodruff would be as friendly to Jim Irwin if he knew that everybody says Jennie decided he was to keep his certifikit because she wants him to get along in the world so he can marry her?"

"I don't know as she is so very friendly to him," replied Mrs. Bronson; "and besides Jim and Jennie are both of age, you know."

"Yes, but how about our schools bein' ruined by a love affair?" interrogated Mrs. Bonner as they moved away. "Ain't that your business and mine?"

Instead of desiring further knowledge of what they were discussing, Jim felt a dreadful disgust at the whole thing. Disgust at being the subject of gossip, at the horrible falsity of the picture he had been able to paint to the people of his objects and his ambitions, and especially at the desecration of Jennie by such misconstruction of her attitude toward him officially and personally. Jennie was vexed at him, and wanted him to resign from his position.

He firmly believed that she was surprised at finding herself convinced that he was entitled to a decision in the matter of his competency as a teacher. She was against him, he believed, and as for her being in love with him—to hear these women discuss it was intolerable. He felt his face redden as at the hearing of some horrible indecency. He felt himself stripped naked, and he was hotly ashamed that Jennie was associated with him in the exposure. And while he was raging inwardly, paying the penalty of his new-found place in the public eye—a publicity to which he was not

yet hardened,—he heard other voices. Professor Withers, County Superintendent Jennie, and Colonel Woodruff were making an inspection of the rural-school exhibit.

"I hear he has been having some trouble with his school board," the Professor was saying.

"Yes," said Jennie, "he has."

"Wasn't there an effort made to remove him from his position?" asked the Professor.

"Proceedings before me to revoke his certificate," replied Jennie.

"On what grounds?"

"Incompetency," answered Jennie. "I found that his pupils were really doing very well in the regular course of study—which he seems to be neglecting."

"I'm glad you supported him," said the Professor. "I'm glad to find you helping him."

"Really," protested Jennie, "I don't think myself . . ."

"What do you think of his notions?" asked the Colonel.

"Very advanced," replied Professor Withers. "Where did he imbibe them all?"

"He's a brown mouse," said the Colonel.

"I beg your pardon," said the puzzled Professor. "I didn't quite understand. A—a—what?"

"One of Papa's breeding jokes," said Jennie. "He means a phenomenon in heredity—perhaps a genius, you know."

"Ah, I see," replied the Professor, "a Mendelian segregation, you mean?"

"Certainly," said the Colonel. "The sort of mind that imbibes things from itself."

"Well, he's rather wonderful," declared the Professor. "I had him to lunch to-day. He surprised me. I have invited him to make an address at Ames next winter during farmers' week."

"Him?"
Jennie's tone showed her astonishment. Jim the underling, Jim the off ox, Jim the thorn in the county superintendent's side, Jim the country teacher! It was stupefying.

"Oh, you mustn't judge him by his looks," said the Professor. "I really do hope he'll take some advice on the matter of clothes—put on a cravat and a different shirt and collar when he comes—but I have no doubt he will."

"He hasn't any other," said the Colonel.

"Well, it won't signify, if he has the truth to tell us," said the Professor.

"Has he?" asked Jennie.

"Miss Woodruff," replied the Professor earnestly, "he has something that looks toward truth, and something that we need. Just how far he will go, just what he will amount to, it is impossible to say. But something must be done for the rural schools—something along the lines he is trying to follow. He's a struggling soul, and he is worth helping. You won't make any mistake if you make the most of Mr. Irwin."

Jim slipped out of a side door and fled. As in the case of the conversation between Mrs. Bronson and Mrs. Bonner, he was unable to discern the favorable auspices in the showing of adverse things. He had not sensed Mrs. Bronson's half-concealed friendliness for him, though it was disagreeably plain to Mrs. Bonner. And now he neglected the Colonel's evident support of him, and Professor Withers' praise, in Jennie's evident surprise that Jim had been accorded the recognition of a place on the college program, and the Professor's criticism of his dress and general appearance.

It was unjust! What chance had he been given to discover what it was fashionable to wear, even if he had had the money to buy such clothes as other young men possessed? He would never go near Ames. He would stay in the Woodruff District where the people knew him, and some of them liked him. He would finish his school year and go back to work on the farm. He would abandon the struggle.

XXII

The Colonel Cracks the Log

HE STARTED home, on foot as he had come. A mile or so out he was overtaken by the Colonel driving briskly along, with room in his buggy for Jim. "Climb in, Jim!" said he. "Dan and Dolly don't like to see you walk."

"They're looking fine," said Jim.

There is a good deal to say whenever two horse lovers get together. Hoofs and coats and frogs and eyes and teeth and the queer sympathies between horse and man may sometimes quite take the place of the weather for an hour or so. But when Jim alighted at his door the Colonel spoke of what had been in his mind all the time. [CONTINUED ON PAGE 35]



"Is that the old chair I saw in your attic?"

"Yes, I needed another chair for the parlor and this one was always so comfortable I thought I'd try and fix it up."

"You certainly are succeeding; looks nice enough for anybody. How it shines; and what a pretty shade of brown!"

"This is Sherwin-Williams Brighten-Up Stain I'm using. It's a stain and varnish combined. They make a whole line of household paints and varnishes all mixed, ready to use."

"What do you ask for?"

"Sherwin-Williams Brighten-Up Finishes. You can get them at Hawkins' store. There's one for floors, one for lamp brackets, one for screens, one for woodwork, one for walls, one for everything around the house that needs renewing."

"You have the neatest place in the county, Sarah. How do you find the time to keep it so?"

"That's easy. I never let anything go. A brush full of paint in time saves hours of work and often saves property. We own this farm and I intend to do my part towards increasing its value. And there's nothing like paint and varnish for beautifying and protecting what you own."

"You're right. I'm going to start in at once with Sherwin-Williams Brighten-Up Finishes."

If you want your home to look like Sarah's, see the Sherwin-Williams dealer in town. We gladly send free our painting book for farmers.

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The Farmers' Lobby

If You Want Running Water in the Home You Will Read With Interest These Lines Which Tell What Others Are Doing to Get It

By Judson C. Welliver

A MULTI-MILLIONAIRE, a literary person, a dude, or a plumber might reasonably be justified in parting his name in the middle. Thus:

J. Hilles Robison.

I regard J. Hilles as the most useful citizen in our country.

He's a plumber.

Given a few feet of iron pipe, four chestnut trees, a hole in the ground, and general authority to rip things up, J. Hilles will convert your farmhouse into a city home before you can quite realize that he's on the place.

Also, he will convince everybody in the family that living on the farm isn't, after all, such a grievous enterprise as we thought it was last winter, perhaps.

J. Hilles Robison, Sandy Spring, Maryland. That's his name. If there were another just like him in every agricultural county in the country they would put an end to the worry about country folk wanting to leave the farm.

He's the water-works man.

If there is any one thing that the country home needs more than anything else to make it a home instead of a habitation, it's running water in the kitchen, a bathroom up-stairs, and a faucet in the barnyard where the turn of a little wheel will do what Moses did when he smote the rock.

We all remember about Moses and the rock. Well, the man who will smite the rock and cause water to flow for the benefit of the overworked housewife, the disgusted farmer, and the pessimistic hired man of the average American farm, he's the individual who will contribute more than anybody else to establishing country life as an ideal station.

Haven't You Done This?

THE farm woman who visits occasionally in town knows just what I mean. She sees her town sister or cousin working in the kitchen, step over to the sink, turn a spigot, and draw the water, hot or cold, without effort, delay, or even a thought. It's certain to be there, and the drawing is an incident as ordinary as drawing one's breath, almost involuntary. How different from the experience of the average country home!

Yet there is no reason why the country house should not have water piped into its kitchen, its bathroom, its lavatory. No reason why it shouldn't have a "tap" in the garden and another on the lawn, to water the truck and the grass.

There's a J. Hilles Robison somewhere in your neighborhood, and if you care to look him up it will be a surprise to learn at how modest a figure he can provide you with the plant to furnish running water.

Not only that, but—

(The next few sentences are in strict confidence to the women-folks. The men mostly wouldn't understand, and if they did they might imagine that there was a concealed and vicious ulterior purpose.)

—if you once get running water in your house, the next thing that will come along will be hot-water or steam or furnace heat.

Why not? Isn't the farm home as much entitled to these things as the town home?

It can afford them, as a rule, better.

There have been acres and acres of stuff written about the social needs of the farm; about the necessity for good roads, and better schools, and women's clubs, and an automobile on every place, and all that.

But those things are really the frills, the afterthoughts.

The first thing is to give the housewife of the farm a chance to get her day's work done within sixteen hours, so that she may have a bit of time to think about other matters.

Good roads will not help the woman who gets no chance to go out on them. Women's clubs will not relieve the necessities of the woman who has to think of churning first.

A woman who breaks her back lugging water from a spring, or pumping it and carrying it from a well, is not going to get much amusement out of a club discussion of whether Hamlet was crazy or not. She'll be too busy saving herself from going crazy too.

Putting aside all the high-brow discourse about "uplifting" the farm woman and "elevating the social life of the country," and that sort of thing, the fact remains that the average country house that gets equipped with water works is started on the road to happiness and comfort.

Three things have lately impressed these views on me with unusual emphasis.

One was J. Hilles Robison.

Another was the fact that people at the Department of Agriculture have been telling me that the country women all seem to want running water in their houses, and that there is a great country demand for plans and systems within the means of the ordinary farm income.

The third was the Conference for Education in the South.

Mr. Robison started out years ago as a journeyman plumber,

steam- and gas-fitter to make a living in the country. His trade would naturally have taken him to town to live, but he had been raised in the country, preferred to live there, and was obsessed with a notion that there was a market for his wares there. So he undertook to establish a country business in his line.

He has succeeded. He found out that it was perfectly feasible to equip an ordinary farm with a water-works system, and that it could be done at a very moderate cost. Then he went to work building up a business in a country county, doing that sort of work. He has been a missionary as well as a good business man, though he doesn't realize that he has been a missionary, and may be disgusted to learn about it.

But it's a fact.

How to Increase Acre Values

OUR county is now dotted with farm places, every one of them an example to the neighborhood, equipped with water systems. I undertake to say that a water-works system that costs \$2 per acre for the acreage of a 160-acre farm will add \$5 an acre to the value of that same farm in the event of a sale.

Why?

Because the man who looks over a farm with a view to buying has, nowadays, a notion of the future possibilities of the place. He wants to try to visualize it as it will be ten and twenty years hence. He will think better of the place if he sees some suggestion of the possibilities of modern development of it. His wife will be more interested in what she sees in the kitchen than in everything else there. She will see running water and be assured that there is no occasion to carry buckets of water from well or spring; that has all been attested to. She will not stop to think that all that represents only a couple hundred dollars in a \$20,000 deal; she will see the thing that most appeals to her personally, and will be in favor of buying the place that presents these advantages.

Ever think of why the well on the average farm was dug where it is?

That's a bit of the psychology of this situation that is worth thinking about.

Nine cases in ten the well was dug where it would be most convenient to the barnyard. The cattle had to be thought about first; the human inhabitants could adjust themselves afterward to the con-



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ditions imposed by the necessities of the barnyard. So the horses and the steers had their water supply brought to them just as conveniently as possible, while Mother had to adjust herself to the situation dictated by the requirements of the dairy and the pigs. Honestly, isn't that true? We all know it is, or was till people like J. Hilles Robison, got on the job and began to show Mother that she could just as well as not enjoy the conveniences that Aunt Kate in town has. One good sign, however, about this situation is that the farm women are beginning to realize it.

What the Women Said

A few months ago the Department of Agriculture sent out 55,000 letters to the wives of farmers throughout the country, asking them what they thought they most needed to make farm-living satisfactory. Special stress was laid on the request that answers should reflect the woman view. The Department and the uplifters in general, it was felt, have been overlooking Mother altogether too much. The real need is to find what the women need, and want, and ought to have, and could afford to have. In answer to these inquiries the Department is about to publish a book summarizing the woman's view of country life in America as it is to-day. And officials of the Department say that the women, in a striking proportion, insist that the immediate present physical comfort that they most want is running water in the house.

Running water in the house, it is needless to say, means running water at the barnyard. Father will see to that. Why should he be without conveniences and labor-saving devices that are enjoyed by Mother? Not often; so it may be very confidently expected that if one pipe carries water to the house another will conduct it to the barnyard.

Father is just as considerate about himself as he is about Mother, possibly a bit more so. Both can have it. There is no good reason why any self-respecting farm should be without this elementary device for making life easier and its burdens lighter. If you lived in our county I should insist on your seeing Robison. But there's somebody in your neighborhood who knows the trick—knows how cheaply you can be provided with the essentials of a water supply.

A Water System Costs Little

This brings me down to the Conference for Education in the South. That sounds rather formidable, but it isn't. It is, in fact, very sane and simple. Recently I received a printed circular from this Conference—which has an office in Washington—asking for data about farm water-works systems. I was interested to note that an organization with such an impressive name should be asking such a matter-of-fact lot of questions: What did the water system cost? How much work did it save? And so on.

I asked the secretary, who seemed anxious to talk to anybody interested in his enterprise, all about it. You can do the same. He will be delighted to hear from you. Address, A. P. Bourland, Executive Secretary, 508 McLachlen Building, Washington, D. C.

"We can't 'uplift' the farm until the women on it are helped out of their drudgery," said Mr. Bourland. "Half the real, downright, physical labor a farm woman has to perform is related to providing water. In the South it probably comes from a spring or a shallow well, which means that, as the house is built on the higher parts of the farm, the water must be carried up-hill to the house. You can reduce it to mathematical demonstration, as some people have done, and prove that about one half the lifting and carrying—the whole exertion of energy—in the household establishment of a farm represents carrying water.

"Yet it is cheaper to get the water carried to you than it is to cut wheat with a self-binder, or to feed the stock from a silo. It is an absolute fact that more human energy is to be saved, at less cost, by providing a simple system of water works on the farm than by any other expenditure that can be figured out.

"Let me prove it. Mr. Bourland's Point "A harvesting machine will cost you about \$120. Well, for that amount of money you could build a water system that would pump water from your well to a tank, and thence pipe it to your kitchen and also to the barnyard. The harvesting machine will wear out before the water plant will. It will work only a few days in the year; the water plant will work 365 days in all years, and occasionally 366. "We have looked over the whole field of rural betterment work, and decided that the prosy, unappealing, every-day

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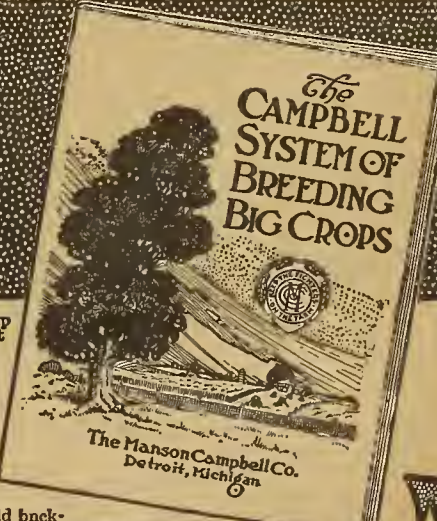
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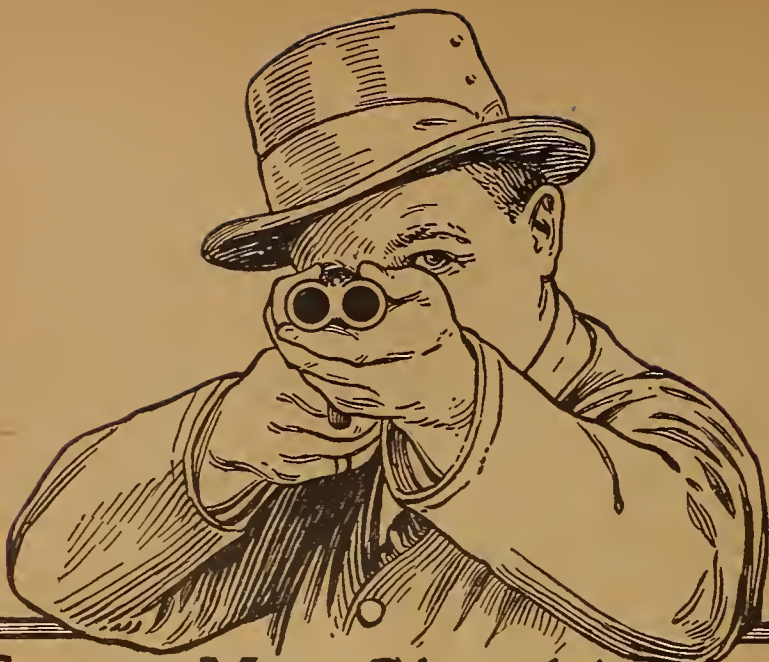
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"We have been engaged especially in promoting the water-works business in the South, but for manifest reasons not much has been possible this season. The South has its cotton on its hands and small chance to spend real money. That, however, is not true of other parts of the country, and they report that excellent progress is being made.

"Pretty nearly everybody in the country knows in a general way that a gasoline engine can be installed to pump water to a storage tank, whence it can be piped wherever it is wanted. But most farmers don't seem to have thought that they could do it on their own places.

"An engine of sufficient power, plus a pump jack, can be had for between \$45 and \$50. The tower and tank on top of it will cost, in the simplest form, between \$20 and \$25. The pump can be put in for \$25; connections, pipe, etc., to carry water to house and barnyard, will cost from \$30 to \$50, according to distances and conditions.

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"These figures assume that the elevated tank is to be used. The really ideal system for more northern, and therefore colder, regions is that which is based on the use of compressed air. The engine pumps air into an iron tank until a proper pressure is attained, then the compressed air operates the pump and sends water through the pipes. In places where it is possible to get electric current from a near-by town or city, an electric motor may be used, which will pump whenever a switch is turned. The perfected system based on electric power is that in which a float is placed in the reservoir, so that at a certain level it will automatically turn on the current and start the motor; then the motor works till, the reservoir being filled, the float automatically shuts off the power. This may sound complex and expensive, but it is not. It can, of course, only be used where electric power can be had. The universal and always available power for the farm, anywhere, is the gasoline engine. You can pump a thousand-gallon tank full for about 5 cents' worth of gasoline.

"Let a farmhouse once get this rudimentary system, and the rest will take care of itself. The bathroom and the hot-water tank attached to the kitchen stove will come in their natural order. After that the idea of a hot-water heating system for the house, or a furnace, will be so obvious that it will be unnecessary for any outside influence to work up the sentiment.

People Are Going Toward the Farm

"And these things mean the difference between a real home and a place to inhabit. Don't forget that. No use formulating plans to give the farm family intellectual and spiritual interests until you take away the horrible burden of unceasing physical work. Let me find some American multi-millionaire who will endow an institution to place a water-works system on a million farms in this country, and I shall put an end to the worry about the future of American agriculture. Make the farm livable, and people will be willing enough to live on it."

Mr. Bourland's testimony to the value of the water treatment for the farm home is borne out by the experience of our county with J. Hilles Robison. J. Hilles has sold water plants to so many of us that everybody concedes him the privilege of dividing his name in the middle if he likes; and incidentally the price of land has been going up very fast. The people in town are discovering that living on a farm isn't bad, and in our county at least there is more apparent tendency from town to country than in the other direction.

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Patterns may be obtained from Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City, or Pattern Department, FARM AND FIRESIDE, Springfield, Ohio

No. 2747—Jumper Waist: Sleeves in Two Styles

34 to 40 bust. Material required for 36-inch bust, one and seven-eighths yards of thirty-six-inch material, with one and one-eighth yards of thirty-six-inch material for the jumper and three eighths of a yard of contrasting material. Suitable for silk and net, satin and serge, and like combinations. The summer cottons could be used effectively for this design also. Price of pattern, ten cents

No. 2660—Gathered Circular Skirt

22 to 30 waist. Quantity of material required for 26-inch waist, two and three-fourths yards of thirty-six-inch material. An excellent design for a separate skirt; suitable for serge, satin, one of the heavy summer cottons, or linen. May be trimmed effectively with bias bands of contrasting material. Width at bottom in 26-inch waist, three yards. Price of this pattern is ten cents

No. 2695—Dancing Dress: Moyen Age Effect

32 to 40 bust. Quantity of material required for 36-inch bust, four and one-fourth yards of thirty-six-inch material, with three yards of thirty-six-inch contrasting material and seven-eighths yard of lining. Particularly suited to the figured cotton crêpes and other novelty cottons, as well as the light summer silks and like materials. Width around bottom, three yards. The price of this pattern is ten cents

No. 2696—Kimono Blouse: Wide Girdle Belt

32 to 40 bust. Material for 36-inch bust, one and three-fourths yards of forty-inch, with seven-eighths yard of thirty-six-inch contrasting. This blouse offers another economical and pleasing suggestion for combining materials, also an excellent idea for making over a gown or waist. Black satin could be used for sleeves and body of blouse, with girdle and back panel of serge or cloth and like combinations. The price of this blouse pattern is ten cents

No. 2646—Gathered Double-Flounce Skirt

22 to 28 waist. Quantity of material required for 24-inch waist, two and three-fourths yards of forty-inch material, with two and one-fourth yards of material for the foundation skirt and one yard of thirty-six-inch contrasting material for the bands. Width, two and three-fourths yards. Light silks, thin wools, and the summer cottons may any of them be used for this design. Bordered stuffs lend themselves to it especially well, the border being used to edge the flounces and to trim the waist worn with this skirt. Pattern, ten cents

No. 2692—Large-Armhole Jumper Blouse

34 to 42 bust. Material for 36-inch bust, one and three-fourths yards of thirty-six-inch with one and five-eighths yards of twenty-seven-inch for jumper. Pattern, ten cents

No. 2693—Three-piece Skirt with Tunic

24 to 32 waist. Material for 24-inch waist, three yards of thirty-six-inch, two and five-eighths yards lining. Width, one and three-fourths yards. Pattern, ten cents



No. 2692 No. 2747 No. 2696 No. 2694 No. 2695
No. 2693 No. 2660 No. 2646



No. 2694

No. 2694—Panel Princesse Dress with Tunic

34 to 44 bust. Quantity of material required for 36-inch bust, two and one-half yards of fifty-four-inch material, with two and one-eighth yards, of fifty-four-inch contrasting material and one-fourth yard for collar. Width of skirt at bottom, two yards. Pattern, ten cents

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Join the Pony Club To-day and Win This Beautiful Outfit

All these pictures are ponies I have given away. The addresses of the winners are given too, so that you may write them if you want to.



TOM CLARK PENINGTON, London, Ky.



LEONARD FOREMAN, Osceola Mills, Pa.

BOYS! GIRLS! I Will Give This Pony to Some Boy or Girl Who Cuts Out This Coupon

I am the Pony Man of *Farm and Fireside*. The ponies that you see on this page I have given away to members of my Pony Club. But there isn't room for all the pictures, because I have given away over 100 ponies. I am going to give away two more ponies in a very little while. One is Major: his picture is up above. The other is Dandy. I will send his picture to every boy and girl who joins my Club—and it doesn't cost one cent.

To Join the Most Wonderful Pony Club in the World—Just Cut Out the Coupon

I shall give a present to every boy and girl who joins my Pony Club—air rifles, bracelets, watches—dozens of presents. (You should join right away.) And I give away Major and Dandy besides. And no boy or girl is allowed to spend a cent. Get out the shears and cut out that coupon.

Major is the Handsomest of All the Ponies I Have Given Away

Look at Major's picture. Isn't he a beauty? He's as sturdy as a big horse, and just as gentle as a kitten. You can ride him or drive him, and if you should fall off you can't be hurt—and Major will wait. Think what fun to drive to school. Think what good times playing Indian. Major loves to play. Think how much money you can make doing errands. Major is the best worker in the world. The boy or girl who wins Major will have plenty of money all the time.

And remember there is Dandy too. I want to send you a beautiful picture of Dandy. Just cut out the coupon.

You Get the Pony-Cart and Harness Too

When you win Major you get the pony-cart and harness, just as you see them, too. And if you win Dandy I'll send you a saddle and bridle. Think of that—two chances to win a pony instead of one! Surely you can win one of the ponies. It's worth clipping a coupon anyway. Do it now.

1,000 Votes for You

And here's the surprise. To every boy or girl who cuts out that coupon now I am going to give 1,000 votes which will count toward Major or Dandy. Think of what a head start that will give you. The 1,000 votes are a reward for being prompt. Are you going to be one of the lucky ones?



JOHN KIELEN, Madison, Minn.

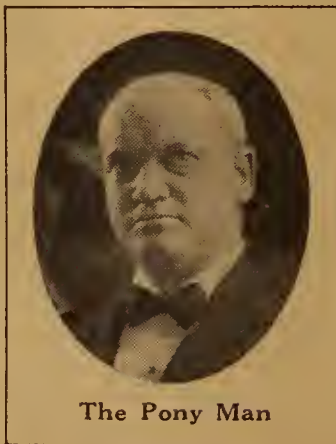


IRMA MUSANTE, New London, Conn.

You can become a member of my Pony Club and get 1,000 votes for Major by clipping this coupon NOW.

Every Member Gets a Prize

Watches, air rifles, bracelets—dozens of prizes—one for every member of the Pony Club. And Major and Dandy besides. But you must not waste time: you must be prompt.



The Pony Man

Uncle Dave
Farm and Fireside Pony Man
Springfield, Ohio

Please put me in the Pony Club and give me 1,000 votes for promptness and send me a picture of Dandy, and tell me how I can win a pony.

Name

Address

Ten-Second Topics

Farm News From Official Sources for the Person Whose Time is Money

THE British Ministry of Finance has announced a plan by which over \$24,000,000 will be used for financing the Egyptian cotton crop. Government agents will buy the cotton at specified prices.

THE area of France is 207,000 square miles, and Germany's, 208,000.

MILK in the Philippines (except Manila) is obtained mostly from goats and carabaos. A good carabao gives a gallon of milk a day. In Manila cows' milk sells for about 20 cents a quart, and carabao's milk for 15 cents.

NEARLY 5,000 tons of oleomargarine were made in Chicago oleo factories during November, 1914. This is a ten-percent increase over a year ago.

A CORD of well-seasoned hickory, oak, or hard maple will give as much heat as a ton of coal. A cord of hickory is equivalent in heat value to a cord and a half of hemlock, sycamore or soft maple, and two cords of cedar, poplar, spruce, or white pine.

HANKOW, CHINA, exports to America large amounts of vegetable tallow. The tallow is secured from nuts, and is used for making soap and candles. It costs \$130 a ton.

MISSOURI has 1,064 breeders of Short-horn cattle.

TWENTY-FOUR registered Guernseys and twenty-five grade Guernseys, all on one Michigan farm, were condemned and killed during the foot-and-mouth disease campaign.

THE Elgin butter market is losing its prestige. Some of the largest creameries in the country are now basing their butter and butterfat prices on New York quotations.

MORE than 25,000 hogs in one New Jersey county are fed entirely on hotel refuse obtained from New York City, Jersey City, and Newark.

TO PREVENT sediment from collecting in tile drains laid in swampy soil, cover the joints with peat muck.

The Brown Mouse—Continued from Page 29

"I saw Bonner and Haakon and Ez doing some caucusing to-day," said he. "They expect to elect Bonner to the board again."

"Oh, I suppose so," replied Jim. "Well, what shall we do about it?" asked the Colonel.

"If the people want him—" began Jim. "The people," said the Colonel, "must have a choice offered to 'em, or how can you or any man tell what they want? How can they tell themselves?"

Jim was silent. Here was a matter on which he really had no ideas except the broad and general one that truth is mighty and shall prevail, but that the speed of its forward march is problematical.

"I think," said the Colonel, "that it's up to us to see that the people have a chance to decide. It's really Bonner against Jim Irwin."

"That's rather startling," said Jim; "but I suppose it's true. And much chance Jim Irwin has!"

"I calculate," rejoined the Colonel, "that what you need is a champion."

"To do what?"

"To take that office away from Bonner."

"Who can do that?"

"Well, I'm free to say I don't know that anyone can, but I'm willing to try. I think that in about a week I shall pass the word around that I'd like to serve my country on the school board."

Jim's face lightened up—and then darkened.

"Even then they'd be two to one, Colonel."

"Maybe," replied the Colonel, "and maybe not. That would have to be figured on. A cracked log splits easy."

"Anyhow," Jim went on, "what's the

use? I shan't be disturbed this year, and after that—what's the use?"

"Why, Jim," said the Colonel, "you aren't getting short of breath, are you? Do I see frost on your boots? I thought you good for the mile, and you aren't turning out a quarter horse, are you? I don't know what-all it is you want to do, but I don't believe you can do it in nine months, can you?"

"Not in nine years!" replied Jim.

"Well, then, let's plan for ten years," said the Colonel. "I ain't going to become a reformer at my time of life as a temporary job. Will you stick if we can swing the thing for you?"

"I will," said Jim, in the manner of a person taking the vows in some solemn initiation.

"All right," said the Colonel. "We'll keep quiet and see how many votes we can muster up at the election. How many can you speak for?"

Jim gave himself for a few minutes to thought. It was a new thing to him, this matter of mustering votes—and a thing which he had always looked upon as rather reprehensible. The citizen should go forth with no coercion, no persuasion, and vote his sentiments.

"How many can you round up?" persisted the Colonel.

"I think," said Jim, "that I can speak for myself and Old Man Simms."

The Colonel laughed.

"Fine politician!" he repeated. "Fine politician! Well, Jim, we may get beaten in this; but if we are, let's not have them going away picking their noses and saying they've had no fight. You round up yourself and Old Man Simms and I'll see what I can do—I'll see what I can do!"

[CONTINUED IN NEXT ISSUE]

With the Editor—Continued from Page 2

most needy States don't seem blessed with the sort of legislatures which tackle such problems. But we all believed that effective state legislation for mortgage credit is possible. We had a splendid address by Mr. Van Cortlandt of New York on the New York State land bank, and we thought the prospects good for its scoring a success.

We favored the system of regional land banks because we thought a big organization could sell land bonds to better advantage than could the small units provided for in the Fletcher-Moss bill. We went on record in favor of the Hollis-Bulkley plan of Government's investment of its loose money to the extent of not more than \$50,000,000 a year, because we believed that this support by the Government, while smacking to some of us a trifle of special privilege, might be the very fillip to start the system off successfully. We all know that if the plan works well no government support ought to be necessary, but it is thought to be a good thing to have in reserve should the investors be shy of the land bonds.

We all believed that personal, short-time credit is just as important to the farmers as land-mortgage credit, and we said so in a resolution; but we didn't believe that Congress nor the country knew enough about the matter to act now, nor had time to study it in this Congress. We were assured by the lawmakers among us that if the subject of personal credits were tackled it would

probably result in no legislation at all this session, for sheer lack of time. So we recommended that a commission be appointed to study the matter. Mr. R. L. Milliken, who is doing about all that is being done in this country for the enlightenment of Congress on personal credit, was a member of the conference. He has convinced most of the many people who have met him that the Milliken bill, which Senator Owen had printed last winter, has the germ of a successful personal-credit system in it, and if the conference could have done anything to bring that matter before Congress at this session without putting the land-mortgage credit bill in worse danger than it is already, we should have done it. But we had to recommend no action on personal credit this session.

We did resolve, however, that things ought to be kept moving, and we organized a permanent Rural Credit League to continue the work of the conference and conduct a campaign of education. The executive committee consists of Western Starr, farmer of Westover, Maryland, William T. Creasy, Past Master of the Pennsylvania State Grange, S. H. Hobbs of the Farmers' Union, North Carolina, George P. Hampton, secretary of the conference, and C. B. Kegley, master of the Washington State Grange, chairman of the conference, and also

Herbert Quirk



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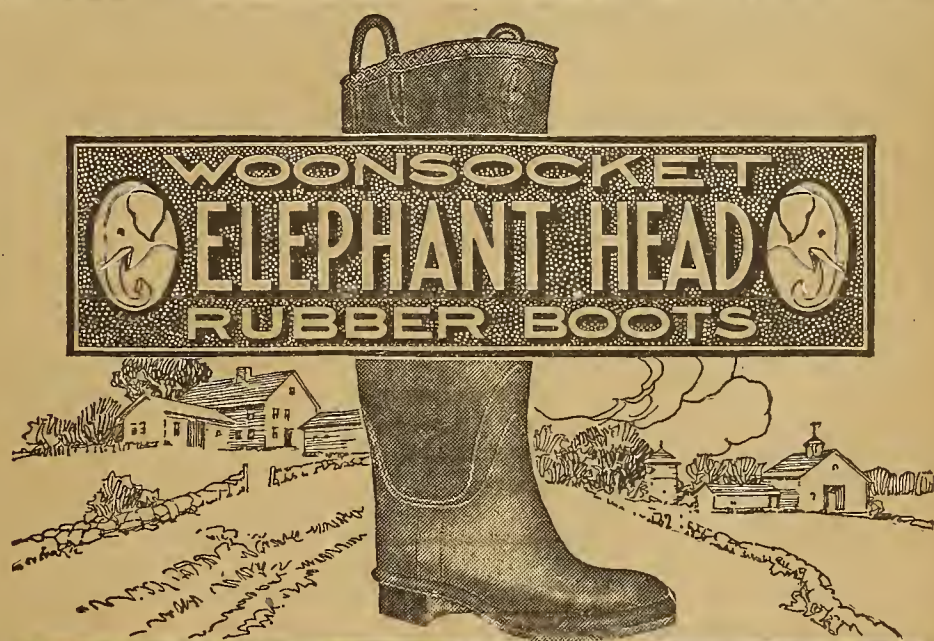
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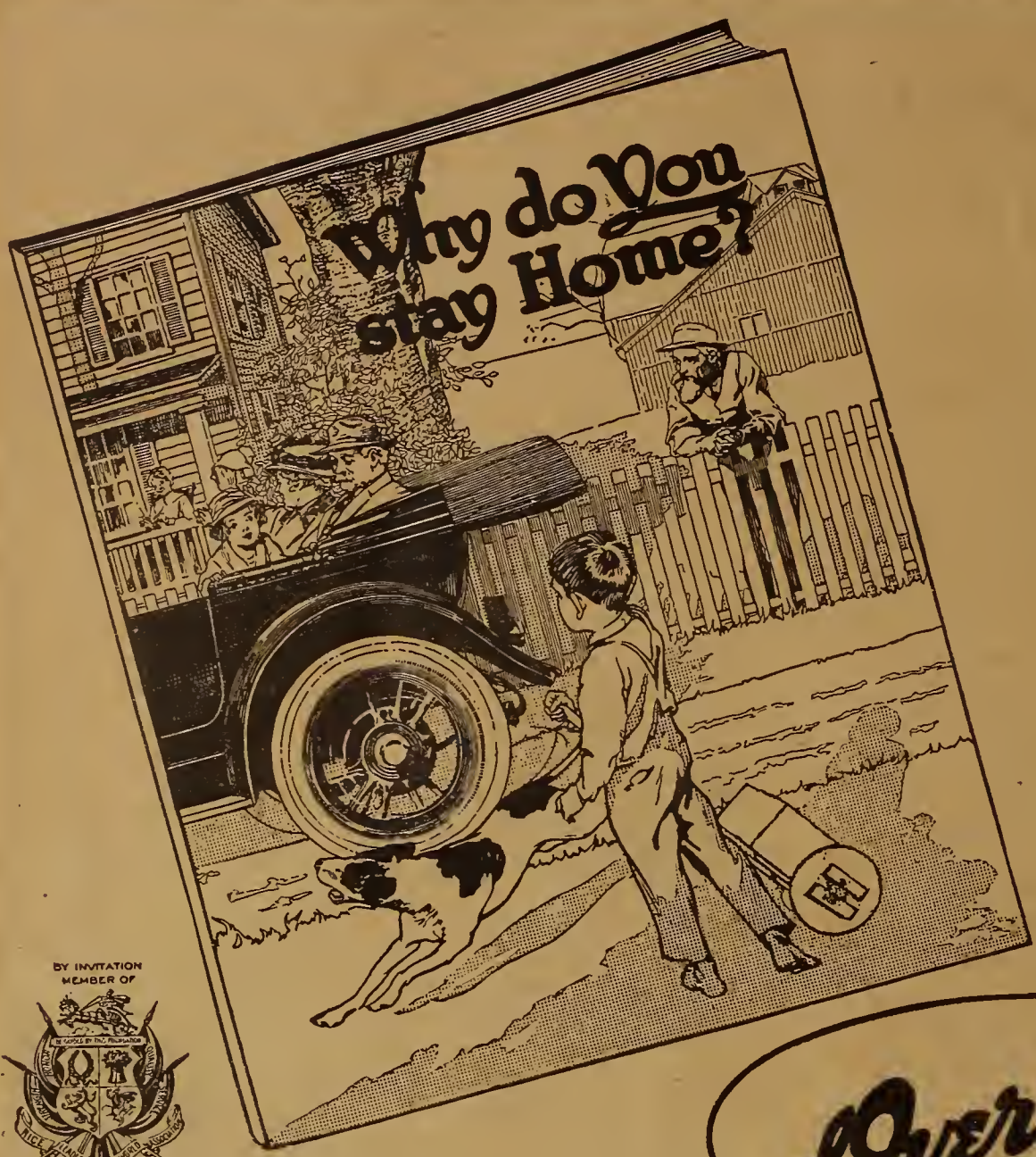
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"But after the chores are done and the supper cleared away, you think of the effort needed to go out. You think of hitching up the tired horses. You think of the long drive, the late return home. You think of putting up the horses, perhaps bedding them—all in the dim light of a lantern."

"You think of all these things and then, tired already from your day's toil, you decide not to go. You need recreation, but the effort required to get it is too great. So you stay home."

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EDWIN F. BAYHA 1914

On Red Cross Duty

WITH THE EDITOR

At COOLFONT FARM
February 13, 1915

I AM always sorry when I see that emblem of foolishness and stubbornness between two farms called a "devil's lane."

What does it signify? Merely that two neighbors have reached such a point of pettiness that they cannot co-operate in maintaining a line fence. It shows lack of the proper spirit—the spirit of give and take, of neighborliness.

There isn't any question of principle involved as a rule. The thing hinges on a mere difference of opinion as to the kind of fence which is to be built. One wants woven wire, the other thinks the rail fence already in existence a perfectly good fence if it is properly repaired, or regards barbed wire as the thing. He is willing to risk his colts with the barbs, while the other owner hates barbs, as most good horsemen do.

Finally one or the other stands pat on the poorest barrier which the law calls a "lawful fence," and the other builds his a foot or so away from this, and establishes a "devil's lane." If one would say, "Well, John, we can't agree on this thing I guess—probably I'm too mulish—so I'll tell you what I'll do, I'll build the fence the way I want it—the more expensive way—and you figure out what you think you should pay as your share of it, and we'll call it square when you pay it," in nine cases out of ten the other would meet him halfway by saying, "Well, you are a stubborn mule, Jim, but have it your way, I'll pay my half and help with the building."

And then each would feel a sort of warming up in the neighborhood of the heart—the thrill which comes from self-conquest.

The line dispute between farms has caused more murders than any one rural cause of which I know—actual murders; and as for fights, squabbles, lawsuits, and neighborhood feuds it has borne fruit in sinister abundance. And yet the actual amount of land involved is usually less in value than either party would be willing to pay in money to any charitable use that appealed to his sympathies.

We fail to see how unwise it is to make a stand on what we call "principle" against the opposition of another who thinks he is standing on "principle," while both of us in our hearts know we are acting foolishly. That canny Welshman, Fluellen, in "King Henry V," had the right idea. Said he: "If the enemy is an ass and a fool and a prating coxcomb, is it meet, think you, that we also, look you, be an ass and a fool and a prating coxcomb? In your own conscience, now?"

In your own conscience, now, is it meet for neighbors to be asses and fools and prating



now toward a real quarrel, Hotspur twitting Glendower on being a Welshman and not quite master of the language. Finally, however, Glendower, yielding in much the same tone as that of his fellow countryman Fluellen, from whom I have just quoted, said:

Come, you shall have the Trent turned.

And in Hotspur's reply Shakespeare proves his knowledge of human nature. He makes Glendower give us the best formula in the world for settling line disputes. Glendower's answer defeated Hotspur at once, and disarmed him. Says Hotspur:

I do not care: I'll give thrice so much land
Away to any well-deserving friend;
But in the way of bargain, mark ye me,
I'll cavil on the ninth part of a hair.
Are the indentures drawn? shall we be gone?

A friend of mine bought a farm with a disputed boundary on one side. He and the owner of the other farm became acquainted, and each found the other a pretty good sort of fellow; but still that old boundary dispute stood between them. The time came for a new fence.

"Here's the line," said the old settler.

"I understand," said the new man, "that it is here."

"No," said the other, willing, like Hotspur, to cavil on the ninth part of a hair, "we've always claimed this strip of land, and we must insist upon it."

"Now look here," said my friend, "I've had this line surveyed, and I haven't the faintest doubt that this strip is mine, but I think too much of your friendship to quarrel about it. Mind, I claim it's mine, but what you say goes. We'll build the fence on one condition—that you set the stakes. I'll make you judge and jury too. Set the stakes and we'll build the fence!"

The old disputant squirmed. It wasn't fair, he said, to make him set the stakes. If he set 'em he'd set 'em on the correct line—he'd always claimed that strip, and he always would—

"All right," said my friend, "but you'll never get it by a lawsuit with me. You set those stakes and we'll build the fence in the morning."

The quarrel was settled. The stakes were set so as to take the strip from the man who set them—he had been neatly Glendowered.

I commend Glendower's policy to line-fence and boundary disputants everywhere. It may lose you a point once in a while, but it will save you trouble and preserve your self-respect.

Herbert Quick

coxcombs about a few feet of land, or a difference in tastes as between rails, woven wire, or barbs?

When the conspirators in the time of King Henry IV were dividing England up amongst them, there was a boundary quarrel which shows the value of concessions and of the yielding spirit. Hotspur looked over the map, and hated the sight of the river bend which gouged out a piece of the domains he hoped to rule, so he went up in the air over it, saying:

Methinks my moiety, north from Burton here,
In quantity equals not one of yours:
See how this river comes me cranking in,
And cuts me from the best of all my land
A huge half-moon, a monstrous cantle out.
I'll have the current in this place dammed up:
And here the smug and silver Trent shall run
In a new channel, fair and evenly;
It shall not wind with such a deep indent,
To rob me of so rich a bottom here.

Here was a real controversy of adjoining farms. For Owen Glendower's temper rose, as most men's are apt to do on such occasion. Said he:

Not wind? It shall, it must; you see it doth.

The feud was going merrily now. Some took one side, some the other. Hotspur insisted that he would change the channel of the river and get that rich bottom. It would not cost much—he would do it.

Hotspur. I'll have it so: a little charge will do it.

Glendower. I will not have it altered.

Hot. Will not you?

Glend. No, nor you shall not.

Hot. Who shall say me nay?

Glend. Why, that will I.

Hot. Let me not understand you then; Speak it in Welsh.

You see, they had hit a pretty fast pace

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Galloway Co., Wm.	17	Chicago Flexible Shaft	17	Ernst Nurseries	13		
Ottawa Manufacturing Co.	17	Gillette Clipping Machine Co.	16	Galloway Bros. & Co.	19	ROOFING	
United Factories Co.	13			Gardner Nursery Co.	19	Harris Bros. Co.	21
FARM IMPLEMENTS & ACCESSORIES		HOUSEHOLD—MISCELLANEOUS		Green's Nursery	13	Manufacturers Outlet Co.	12
Allen & Co., S. L.	21	Carpenter-Morton Co.	13	Harris Bros. Seed Co.	19		
American Seeding Machine Co.	18	Colgate & Co.	25	Hill Nursery Co., D.	19	SEPARATORS	
Galloway Co., Wm.	11	Collette Manufacturing Co.	25	Knudson, Axel	19	Albaugh-Dover Co.	16
International Harvester Co. of Amer.	6	Chesebrough Manufacturing Co.	22	Lake Shore Nurseries	19	American Separator Co.	17
Straub Co., A. W.	17	Hoosier Stove Co.	25	Maloney Bros. & Wells Co.	18	De Laval Separator Co.	17
		Kalamazoo Stove Co.	22	Park, Geo. W.	19	Galloway Co., Wm.	11
FARM—MISCELLANEOUS		White Flame Light Co.	25	Relly Bros. Nurseries	13	Sears, Roebuck & Co.	16
Gordon-Van Tine Co.	6	LAND		Roesch & Son, Lewis	19		
Hertzler & Zook	16	Atlantic Coast Line Ry.	21	Scarff, W. N.	13	SILOS	
Hydraulic Press Manufacturing Co.	13	Chaffin Co., R. B.	13	Wertheimer & Sons, N.	13	National Fire Proofing Co.	16
Lewis Mfg. Co. (Feed Cooker)	16	Department of Interior	16	Wing Seed Co.	13	Stevens Tank & Tower Co.	16
Simplex Water Works	16	Northern Pacific Ry.	21			Unadilla Silo Co.	16
FENCES		Oregon Western Col. Co.	6	POULTRY AND INCUBATORS			
Bond Steel Post Co.	14	Sherman, Fred D.	15	Belle City Incubator Co.	12	SPRAYERS	
Brown Fence & Wire Co.	14	State Board of Agriculture	19	Berry's Poultry Farm	14	Deming Co.	13
Coiled Spring Fence Co.	14	Strout, E. A., Farm Agency	12	Berry's Poultry Farm (Ducks) ..	14	Goulds Manufacturing Co.	19
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Kokomo Fence Machine Co.	14	LIVE STOCK, STOCK REMEDIES AND FOOD		Cyclone Manufacturing Co.	12		
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The Mule

Give Him Credit for His Real Value and for the Money He Brings You

By W. R. Schooler

WHERE a man doesn't make it a specialty, the raising of either mules or horses is a business carried on more successfully by the small farmer than by the man with a larger acreage. I say that as the result of my experience and observations.

The man on the small farm who does his work with probably no other help than that of his sons can take better care of his brood mares than the one who employs help promiscuously. Of course, if the latter makes a specialty of raising mules or horses or both, he will find his large acreage a help in supplying pasture and producing crops necessary for feeding. But in such a case the farm that is capable of supplying the feed and making the raising of stock profitable is usually the principal asset rather than the stock itself.

Remember That Stock Farms Pay Best

I have a neighbor who, on a 1,000-acre farm, has done exceedingly well with thoroughbred Percheron horses, jacks, and jennets. He has at the present time a total of about 100 head, including 16 jacks and 8 stallions. Some of his stock is imported, and he is ambitious to make his farm the best of its kind in the country.

He has no trouble in making sales at the prices he asks. Most of his Percheron fillies bring around \$600, and he has a four-year-old jack this year for which he has refused several offers of \$1,000. He works his mares part of the time, thus getting from them a labor as well as a breeding income. He grows most of his feed and has plenty of pasture land. Thus he has made a success in a financial way, and has also done much toward bettering the mules and horses here in southwestern Missouri.

Starting with but little capital he has worked himself gradually into the large business that he now has.

It is a mistaken idea for the young man starting out to think that he must have a large additional money capital besides his farm before he can raise good stock.

The main idea is to raise something that the people want. Whether it's a draft horse, mule, or steer, see that it receives the right kind of care to put it in a fit condition and the profits assuredly will be there when the time comes to sell.

Unless a man thoroughly understands the business, even though he may have plenty of capital, I would advise him not to commence on as large a scale as the man mentioned above, for a beginner would stand an excellent chance of losing money. In the live-stock business there is no teacher quite as good as experience. Another good plan is to learn the methods of successful men handling similar stock in the community. If a beginner has any new theories of his own he should put them to the practical test in a conservative manner. Even then he is bound to make some mistakes by which he should profit instead of being discouraged. On the average-sized farm on which standard crops are grown, keeping a few mares for raising mules or horses does not require the outlay of much money. The farm will supply all the necessary feed, and it is easier and more profitable to drive the produce off than to haul it. Farms well stocked are more paying than those on which nothing but grain is grown. We are coming to recognize this fact more and more, and it's a good thing for us that they are.

JUDGE SCHOOLER is well and favorably known throughout southwestern Missouri as a successful stock breeder and feeder. We have spent considerable time on Mr. Schooler's 1,000-acre farm and have seen and handled his splendid mules. He is a dyed-in-the-wool Missourian, intensely practical, and believes that the mule is one of the best friends of the man who understands and appreciates him.—The Editor.

The average Missourian likes mules, and Missouri has a wide reputation for her long-eared favorites.

The mule as a beast to work is especially adapted to our climate, as he stands the heat better than heavy horses during the summer months. Also he will consume less grain, which is an item to be considered in farm economy.

But to raise big mules, which give the best service and bring the best prices, good mares must be bred to the best jacks. For this purpose draft mares take the lead. They are large, well developed, with good eyes and feet, and can be used to work on the farm, if not too hard, most of the time. The ability to use them for two purposes greatly increases their value. But for general work it has been my experience that draft horses do better in the Northern States.

Whatever kinds of stock a man may choose to handle, he should pay attention to the breeds and quality that do best in his section.

Then feed well.

Dealing out skimpy rations never pays. From the time the foals show any desire to eat, even when suckling, feed them regularly once a day. Five or six months of age is the time to wean mule colts. Let them run on pasture, and along with that give what grain they will eat. This will promote development. Bran and oats is the feed I use the first summer and fall, and after that corn and oats fed with plenty of hay.

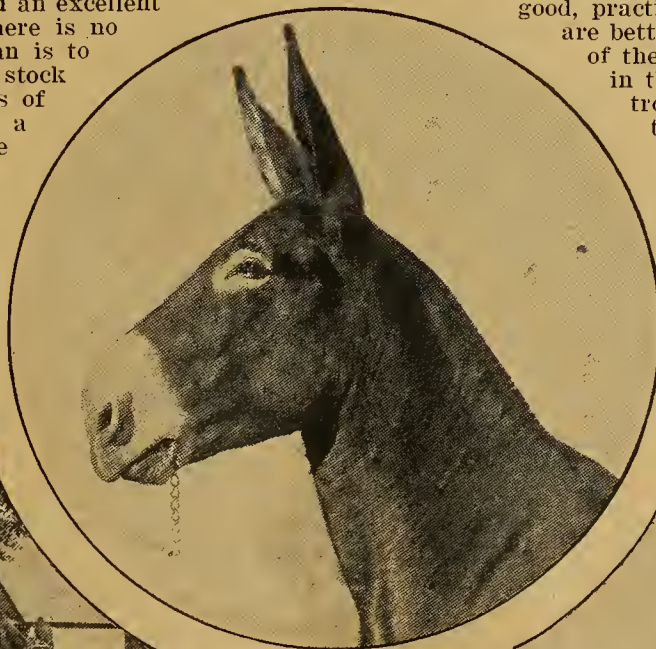
Good Mules Never Beg for a Market

The colt makes his best growth the first year, so too much attention cannot be given to the feeding at this time. Besides that, always supply an abundance of fresh water for both the mare and colt. It is then that the bones of the colt are growing rapidly and the ligaments and tendons are formed. The earlier maturity is reached, the larger, better-shaped beast you will have. And, as everyone knows, mules are judged according to their size and general appearance.

Our Missouri winters are mild. There are only a few nights that I keep any of my stock stabled. The summers are warm, but the nights are moderately cool, insuring an opportunity for rest. The farmer does not need to keep his stock blanketed and groomed. That is all right, perhaps, with show animals, but they are not the kind of stock I am discussing here. I am emphasizing the good, practical kind for every-day use. Like calves, the mule colts

are better turned out to run in the open pastures the greater part of the time. In this way they will receive the needed exercise in the most natural manner, which is so essential. The less trouble a man makes for himself in caring for his stock the less help he will have to employ. A good mule should weigh from 1,200 to 1,400 pounds, and mules of this class will bring from \$400 to \$600 a span. A great many of these are sold east along the Mississippi River, while the smaller ones weighing around 1,000 pounds are shipped South to be worked in the cotton fields. One thing in the mule's favor is that he will always bring what he is worth. He is like a hog in that respect: there is always a market waiting for him.

I have noticed a tendency among some farmers through the country to keep and feed stock that no one wants. Everyone should keep the best stock for the purpose



A jack which won the championship at an Illinois State Fair. It takes a sound, blocky 1,500- or 1,600-pound draft mare, bred to a heavy jack, to produce market-topping mules. That is because the market demands the mule of 1,150 pounds and over. When carefully planned for and well trained, mules become money-makers, not merely "tempters of man" to profanity



This picture shows George G. Hayes of Colorado. He says after his experience with his mules: "No mules for mine. They say these critters never wear out. No wonder, the mules are wise, they take care of themselves and see that they don't wear themselves out, rain or shine. They are easily kept free from defects and never get sick, but they have that confounded disposition that drives one frantic"



Here thirty-three mules are drawing a large combined harvester. Even Mr. Hayes, who speaks against mules for his work, says: "They never worry, never hurry, and for farm work that does not require the speed of a mail route they ought to be the ideal animal." Mr. Schooler in his article shows how the mule fits into the work of the large farm, and of the small one, and gives satisfaction on both

he wishes to put it to. A good, well-bred animal costs no more to feed than an inferior one that is hard to work and cannot be turned into cash at even what it is worth. On my farm the farm hands always strive for the best teams.

I have a strong liking for the self-reliant, dependable mule which long ago came into his own in Missouri.

Why is a Mule?

This Question is Asked and Partly Answered

By A. J. Meyer

Mr. Meyer is from Missouri too. That perhaps explains his query even though he is perfectly familiar with the mule. Mr. Meyer directs Missouri's Agricultural Extension Work, and is therefore intimately in touch with the statewide market situation as well as with the raising and feeding of mules throughout the country.

AN EARLY writer on mule management said, "A mule is not a natural animal, but only an invention of man." The "invention" dates back nearly two thousand years before Christ. In Genesis we read: "And these are the children of Zibeon; both Ajah and Anah; this was that Anah that found the mules in the wilderness, as he fed the asses of Zibeon his father." Through no fault of his, Anah became the first breeder of mules, so far as we in this day know. He pastured his father's horses and asses together in the same green valleys.

That's how mules were invented.

The mule is blessed with a number of shortcomings, and these are what give him a claim to favor. Just as the skillful surgeon would be but an indifferent ditch digger, so the spirited horse fails to meet the demands of certain types and conditions of labor. His unfitness lies in his fitness for better things.

Here enters the lowly mule.

He lacks the grace, beauty, speed, and action of his maternal ancestry.

His voice is worse than his looks.

There is no consolation either in seeing or in hearing him.

He is tolerated because of patient willingness to do man's bidding.

The mule is put into the solitary mine, the rugged mountain pass, the army train, or the cotton field under the blazing Southern sun. He is given into the hands of the shiftless negro driver. All too often he is sent to his labors ungroomed and underfed. He bears his burden, not cheerfully and with a joyous heart, but with complacent indifference. Such small favors as man accords he repays by hard labor and an occasional tap on the head with his heel.

The mule's lack of ginger and snap causes him to work coolly and deliberately under conditions that would rack and worry a horse. He rarely frets or grows excited. It is an unusual thing for a mule team to run away, and when it does the run is likely to be a short and deliberate one, ending without damage of any kind.

He knows how to take care of himself and has sense enough to know when he has done a day's work. The statement of an army quartermaster that "all the work you can get out of him, over and above an ordinary day's work, you have to work as hard as he does to accomplish" is, at least, a half-truth.

It is quite generally conceded that the mule is fully

as sensitive to bad weather as is the horse, but it can stand a broiling sun much better.

Generally speaking, the mule is more resistant to disease, blemishes, improper care, and abuse than is the horse.

He seems to have the ability to make a little food go a long way.

He will thrive on a corn and hay ration without the protein supplement that the horse demands.

When it comes to breaking the mule colt, he yields readily to his master's will and is not easily spoiled in breaking.

Sometimes mules are tricky and stubborn, but the proportion is small. Their heels are not as dangerous as fiction and the comic Sunday supplements picture them to be. But the man who goes to the rear end of a mule to hunt trouble is reasonably sure to find it. Pound for pound, mule flesh sells with horse flesh



above the 1,150-pound limit. The 1,000-pound mule is not in demand at a high price. He is too light for draft purposes, and a mule has no other purpose.

It takes a sound, blocky 1,500- or 1,600-pound draft mare, bred to a heavy jack, to produce market-topping mules.

Many farmers think that the mule colt is more delicate than the foal for the first month or two of his life. Later he takes on the robustness and vigor of the mature mule. For this reason mule-raising in the end is likely to be a more certain proposition than raising horses.

There is little difference between raising a mule and raising a horse. Both need to be taught to eat grain early in life, say at three months old, so that they

will not suffer a setback at weaning time. After weaning they should be given a clean legume hay, preferably alfalfa or red clover, as part of the roughage. The grain ration should be the kind that will build bone and muscle. Straight oats are hard to beat. Corn should never make up more than one third of the grain ration by weight. At the same time it is better to feed corn than to feed no grain at all. The mule colt under one year of age may eat as much as three pounds of grain a day. This quantity should be increased as the colt grows older, until it reaches seven or eight pounds, when the colt is old enough to break.

My Idea of the Mule

By Earl H. Emmons

Mr. Emmons is a newspaper man now. He says he learned the trait of patience while driving mules back on the old farm. He too is familiar with the mule-producing and mule-using part of our country.

THE mule is the horrible result of a cross between a jack rabbit, a brass band, an ostrich, and an automatic revolver.

From the jack rabbit the mule gets his sad, innocent expression, which is so deceiving, and his ears, with which he might be able to fly if he could flap them fast enough; from the brass band side of the house he obtains his wild love for music and his desire to star in the singing rôle of some grand-opera company; from the ostrich relations come the wonderful hind-leg development and the inward cussedness, and from his automatic revolver ancestors he acquires that free and easy double-action movement which enables him to stand on his head and kick the hired man twice in the same place.

The mule is the discoverer and originator of the hookworm, and at times this dreadful disease seizes him so suddenly that he forgets time, place, surroundings, and everything, and sits down in the middle of the road for several hours until the spell wears off. During these attacks you may talk to the mule with tears in your eyes, reason with him, point out the errors of his ways, beat him over the head with a club and jab him with a pitchfork, but he sits right there and never says a word. He is very set in his ways. Then when you turn your back for an instant the mule will smile to himself, uncouple a leg or two, and kick you into the middle of next week without arising from his reclining position.

He is very fond of children, the mule is; and he likes to scratch his ankle against their ribs, as their bones are soft and do not hurt his feelings. Sometimes the mule makes a mistake, and sticks his foot through the anatomy of a tough hired man and skins his shins.

Besides his desire to keep the air full of large irregular-shaped chunks of flying humanity, the mule is passionately fond of singing, and he loves to kick the stable into small pieces at two A. M., stroll forth and stick his head through your bedroom window and breathe his love songs into your ear. Sometimes, to be sure you will listen to him, he bites off an ear, carries it out to the pasture, and sings to it. Of course the mule does not know that this idea is a mistake on his part, or that it is wrong to act that way.

But with all his eccentric ways the mule is a fine little playmate to have around, and he helps to keep the world from becoming too crowded.

Shall I Go to Law?

The Wrong Answer is Sure to Bring You Sorrow and Expense

By J. L. Sherard

IN A SOUTHERN State there lived two farmers who, for convenience, shall be termed A and B. Their farms adjoined, being divided along a portion of the line of a creek. It became advisable, for the better protection of the bottom lands, to straighten the zigzag course of the stream at one point by cutting a short ditch. This was done by mutual agreement and the boundary line re-established satisfactorily to both parties. Later on A died, and his small farm came into the possession of C.

For some reason C became dissatisfied over the line and, after having made an investigation of the matter, concluded that B had encroached a little upon him at the bend of the old creek bed, and thereupon he began an action in court to oust B from the disputed strip of land and to recover damages for alleged trespass.

The Church Suffered From the Suit

A long, tedious, and acrimonious suit followed in the courts, though the land in dispute was only a thirtieth of an acre and at a maximum valuation was worth just about one dollar!

The case was fought by able attorneys on both sides, twice went to the supreme court on technical points of law, and at last, from sheer weariness of the contending parties, was compromised out of court some three years after the suit was started.

In the final agreement, made independently of a court decision be it remembered, each party assumed the payment of his own costs and reached a mutual understanding as to the disposition of the small strip of land. The heavy expense of litigation wore the case to shreds before the courts could shake off mere technical issues that caused prolonged delay and decide it on its merits.

The total costs, including attorney's fees, amounted to about fifteen hundred dollars.

Both parties to the action came out of it almost bankrupt, and with a

breach of friendship that no earthly power could heal. Previous to the bringing of this case in a court of law, attempt was made to settle it by arbitration.

It was most unfortunately lugged into the community church, where a sharp division arose over the claims and merits of the respective parties, and for a long time the petty enmities provoked by partisan discussion and opinion enveloped the humble house of worship like a black and threatening cloud from the bottle of some fabled genius.

Even If You Win, "Lawin'" is Costly

This was an extreme case, it is true. But the legal annals of every State can match it in some form or degree. Had the parties to this action only been willing to meet each other in a spirit of genuine friendship, with a sincere mutual desire to determine the ownership of the little strip of earth on terms of neighborly interest, the dispute could have been settled in ten minutes. As it was, they failed to get together, and an expensive lawsuit was the result.

After it was all over, both parties were doubtless "satisfied" to the extreme limit of "lawin'."

What a frightful waste—on one side of the human ledger one dollar's worth of land, on the other fifteen

hundred dollars in costs besides the more valuable loss of friendship and the disruption of a community!

The office of a lawyer is to see that justice is done and to discourage, not encourage, litigation. Sometimes the lawyer is too much inclined to yield to his client's wishes and brings a case in court that ought never to have passed beyond the power of the parties themselves to settle.

But, after all, the blame for foolish and unwise cases in court rests not so much upon the lawyer as it does on the client, who, hot-headed and bent on getting satisfaction at any price, plunges headlong into a legal fight without for a moment reckoning the cost.

Conditions on the farm give rise to many possible sources of dispute between neighbor and neighbor. It may be a trespassing cow that lays the foundation for a heated complaint, or the antics of a vicious bull, or the prowlings of a worthless hound, or a flood that in an hour changes the channel of a tiny stream.

Finally It Becomes a Mania

The chain of trouble-breeding incidents that might occur at any time is almost endless.

If friction over alleged wrongs happens to arise, the first wrong step is to try to arbitrate the matter; the second, and usually the limit in human folly, is to go to law about it.

The desire to win, under modern conditions of life, is about as keenly developed as the instinctive law of self-preservation.

When a normal man goes into a fight, he bends every ounce of brawn and employs every resource of wit and strategy to come out ahead of his antagonist. Just here lies the danger of falling a victim to the lawsuit mania.

The sensible thing for the level-headed man to do when trouble appears is to go to his neighbor and meet him upon terms of mutual interest.

Right-minded neighbors can, and will, settle their grievances out of court by means of a friendly compromise.

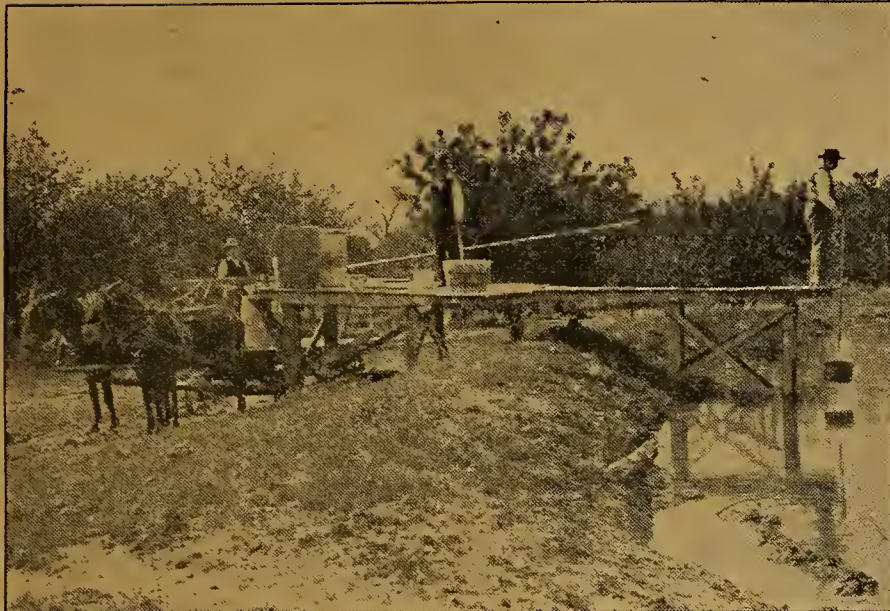
The Writer of This Article

MR. SHERARD is a practicing attorney in South Carolina. He was raised on the farm, and while his every-day business has taken him to the city he has never "left the farm" as far as his sympathies and interests are concerned. And, he adds, he is never going to. What he says, therefore, is of direct use to the man of the farm who is thinking a little of "lawin' his neighbor." This article was written for Farm and Fireside because we wanted to draw upon Mr. Sherard's experience as a farmer of to-day, as a lawyer, and as a man of affairs. You can trust confidently the advice which Mr. Sherard gives, because he is thinking of his own farming interests as well as yours

The Worm in the Apple

His Damaging Work May be Stopped if We Begin in Time

By Joseph Oskamp



This is a practical and an economical plant for the mixing of orchard sprays. A pump, however, would make the scheme still better, for it would save the lifting required by this method



The hydrometer with which the spraying solutions are tested



The mixing of the sprays may be done at home, and is profitable for orchards of over one hundred trees. In this article suggestions for the small and the large orchard are made

SPRAYING will not only improve the size and quality of the fruit but such fruit will keep longer in common storage and thus greatly lengthen the apple season for the farm family.

Spraying and thinning help the trees to produce annual crops, and the surplus fruit being of superior quality it will be readily disposed of to neighbors who do not spray, or to the local grocery stores.

To the farmer who has five or ten acres in apples I would most assuredly say, spray and the chances are you will make more from one crop of fruit than from a half-dozen crops without spraying.

I know of one case in particular where a 120-acre farm had 10 acres planted to apples. The trees were about twenty-five years old, the orchard had been neglected and had never added its share to the farm revenue. A certain experiment station became interested in the orchard, as it afforded the best opportunity for a demonstration plot in that community. The owner was at first unwilling to co-operate, but finally consented to apply such spray as the station directed.

The result was the first year he cleared \$1,300.

The second year \$900.

The third year, \$1,100.

The lowest of these returns was more than he had made off the rest of the farm in the most prosperous years previously.



This picture shows one method used in the larger orchards to get the spray to every part of the tree. This looks like and is a great deal of work, but it explains the reason why some orchards pay big money and others do not

It controls scale insects and is an excellent preparation for orchard sanitation.

First Summer Spray—Use concentrated lime-sulphur of a strength according to directions, and arsenate of lead paste 2 pounds to every 50 gallons. Apply as the leaf buds are opening, and before blooming. This controls leaf-eating caterpillars, curculio, and scab.

Second Summer Spray—This is the most important spray of the season to prevent wormy apples. Use the same materials as for first summer spray. The important thing to remember is that this spray should be applied just after the petals fall and before the calyx cup closes. If effective work is done and the spray is driven into each calyx cup, this application alone will control 85 to 95 per cent of the codling-moth injury.

These are the most important sprays for the farmer with a home orchard. To produce perfect fruit, however, it will be necessary in the southern half of the North Central States to give three more spray applications at intervals of about three weeks (using Bordeaux mixture 4-4-50) to control the rots and apple blotch.

Concentrated lime-sulphur can be purchased ready made with full directions for using. If prepared at home it is essential that a lime be used that is not less than 90 per cent pure. The solution may be prepared by slaking 40 pounds lime in an iron kettle



Note this stage—it is the time when the first summer spray should be made. Delay in spraying apples means loss



The second summer spray is the most important one in keeping worms out of apples. And wormy apples don't sell

The general farmer is a busy man, his energies are divided, he is not specially interested in the scientific names or the life histories of the multitude of insects and diseases which attack his fruit, nor is such an understanding necessary in order to produce a clean crop. It is not essential that the general farmer obtain the maximum results from his orchard.

What he wants is a working knowledge of spraying with directions boiled down to their briefest terms.

Winter Spray—This application is made when the tree is yet dormant, usually in March. Concentrated lime-sulphur is used according to the directions accompanying the spray solution when it is purchased.

EW



This is an entire basket of sprayed fruit, and every apple in the lot is just as good as the ones you see on top. Spraying is apple-health insurance

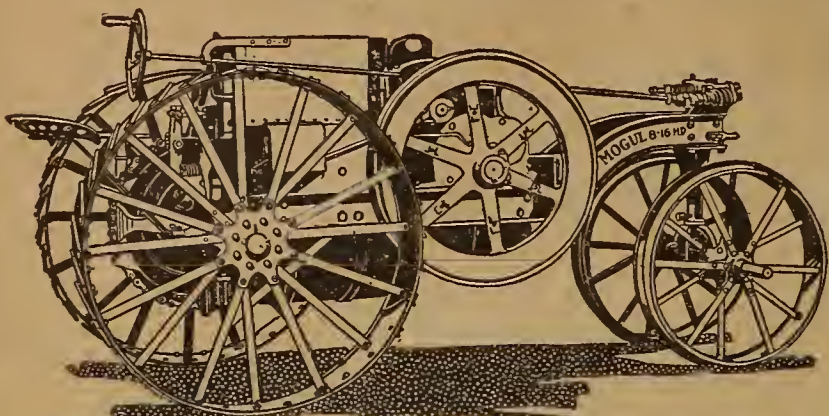
and sifting in 80 pounds of flour of sulphur. Then stir until a uniform paste is secured, and add water to total 50 gallons. Boil for one hour, adding water from time to time.

Lime-sulphur and arsenate of lead will answer the needs of the general farmer.

NOTE—For a small orchard of less than 100 trees most fruit growers think it does not pay to prepare the lime-sulphur solution at home. When made at home it is necessary to procure a glass testing tube called a hydrometer, for determining the strength of the solution.

Anyone making his own spraying solution and wishing further information about preparing it or finding the proper strength for different purposes by means of the hydrometer, may ask FARM AND FIRESIDE any time.

Our New Year's Announcement A Mogul Oil Tractor for \$675



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Dealing Mostly, This Time, With Engine Problems

Wanted—A Garden-Sized Tractor

"**H**OW can a small farmer or grower of vegetables use a gas tractor so as to be almost free from the necessity of using a horse for the work he has to do?" This question is asked by a subscriber in New York State who then goes on to say: "One-man or small-farm tractors are recommended for doing general farm work, but many of them are so heavy they will break through the bridges I have seen on many farms, and are quite too clumsy to use in cultivating beans or taking a few bushels of potatoes to a store a few miles away without using up a good deal of time. Is the gas tractor that can be used for a dozen widely different purposes an impossibility? If so, why is it an impossibility?"

Ram, Turbine, or Engine?

A SUBSCRIBER in New Jersey has a spring at the head of a deep gully. The flow about fills a 1-inch pipe, and he wishes to know how he can get water from this spring to a tank at his house 750 feet away, and with a rise of about 50 feet from the spring to the tank. He has in mind the installation of a No. 4 hydraulic ram, and also is considering the possibility of using a turbine to pump the water up by means of a force pump. In the latter case, he would build a dam which would make the water cover nearly half an acre.

The best way would be to use a small gasoline engine (two or three horsepower) and pump the water from the spring to the tank through a 2-inch pipe. A few hours' pumping a day would be ample, and the engine could be used for other work.

Of the two methods suggested, the hydraulic ram is the more practical. A No. 4 ram needs a supply of from 3 to 7 gallons of water a minute. The supply of the spring is about 4 gallons a minute, so that this size of ram would work successfully. Such a ram would deliver about 20 gallons of water an hour at the tank.

First, sink a clean barrel at the spring, and from this connect the supply pipe to the ram which has been placed far enough down the gully to give a fall of at least 6 feet from the middle of the barrel. If the supply pipe is over 60 feet long, put in a 2-inch standpipe not more than 60 feet above the ram. The standpipe must be high enough to reach the level of the water in the sunken barrel. This standpipe relieves much of the friction in the supply pipe, and will make the ram work better.

The plan of using a turbine would not be successful because of the small amount of water available as power. The amount of water supplied by the spring in twenty-four hours would be used up in about one-half hour by a turbine fed by a 3-inch pipe. The turbine would develop only about one-third of a horsepower for the very short time it would run each day, and this would not be enough to pump the supply of water through 750 feet of pipe with a 50-foot rise. The foregoing figures on the power from a turbine are based on a total fall of 12 feet, of which 10 feet would be effective on the water wheel.

JOHN KIEFFER.

will leave the carburetor cup filled with gasoline ready for starting the next time it is used.

If your engine has a hit-and-miss governor you will probably not have very great success running on kerosene with light or widely varying loads. It is my experience that an engine governed in that way should carry at least half its full capacity load before there is much saving or success in attempting to burn kerosene.

The best results will be had with that type of engine if you carry a constant, steady, heavy load. A throttle-governed engine will give better results than will the hit-and-miss type, where you want to carry a varying load. A. L. JAMES.

Mending a Broken Cooling Jacket



A CYLINDER jacket cracked on the outside can often be mended in a local blacksmith shop or at home. All that is

needed is a drill, a hammer, and some copper wire. Not all cracked jackets can be mended in this way. But I have known instances where a simple crack, or even one with one or two short branches, has been successfully mended in this manner. This method is not recommended to close a crack in the inner wall of the cylinder.

At the end of the crack, drill a small hole. Stick into it a piece of copper wire that fits snugly, and cut the wire off a trifle long. Then bend this end over and rivet it so as to wedge the copper into the drill hole tight enough to hold. Then drill another hole into the crack so close to this copper wire that the drill cuts into it slightly.

Rivet a piece of the copper wire into this hole in the same way. Keep on drilling holes and riveting copper wire into them until you have gone the full length of the crack. The sketch shows a branched crack partly repaired.

Each drill hole should bite slightly into the copper back of it. After holes have been drilled and plugged the full length of the crack, take a hammer and beat the copper until the ends of the wire have been beaten into one solid mass.

Soft copper rivets (not copper annealed rivets) may be used in place of the copper wire. Lead plugs could probably be used successfully in some places instead of the copper wire or rivets, but lead would not do to mend a crack that extends into the exhaust port of a stationary engine, for this port sometimes gets hot enough to melt lead.

This scheme could be used oftener than it is. It may take a little time, but if done at home it is not expensive. A welding plant is not found at every crossroads and new cylinders cost money. The car or engine must also be idle for some days if you have to send the cylinder away to be welded or while waiting for a new cylinder to come.

JAMES A. KING.

"Lost in the Woods" Again

I WANT to comment on Clyde E. Tuck's article "Lost in the Woods," published last December. From what Mr. Tuck says I judge he is of Indian descent. Indians are especially well versed in woodcraft, and I am much surprised that Mr. Tuck when lost in the Ozarks did not fall back on some old Indian knowledge.

I thought every woodsman and guide knew that by going down-hill you are sure to come upon a stream of water which will in turn lead to a settlement. Furthermore, in our day nearly everybody depends on a watch instead of "sighting the sun." When the hour hand points toward the sun the point midway between the hour hand and twelve o'clock will be due south.

Another little woodcraft trick is that of carrying a supply of matches in a large-mouthed bottle. When fitted with a tight cork the matches are sure to be kept dry even though you have to swim a stream with your clothes on.

F. A. CROCKETT.

E-W

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You Can Afford New Wall Paper

By Mary Hamilton Talbott

IT IS not expensive to repaper a room if home talent is employed. And it is within the scope of any woman of ordinary ability to do it if a few of the essentials are understood.

The principal tools required are a board of sufficient width to hold the paper, not less than 18 inches and as long as can be accommodated; sawhorses to support the board; a pair of sharp scissors and two whitewash brushes of good size, one for putting on the paste and the other for smoothing on the paper; a carpenter's square, and of course a platform or table to stand on.

To ascertain the quantity of paper to purchase for a given room—if your paper is 18 inches wide after one edge has been cut off—multiply the height of the side walls by the distance around the room, including doors and windows. Divide this result by 36, which will give in round numbers the single rolls needed for the entire wall space. For each door and window deduct a half-roll, and for other broad spaces take off one roll for every 36 square feet of space.

Some American papers come 22 inches wide. When estimating for this grade divide the room measurements by 44, which signifies that papers of this width cover 44 square feet of wall space.

Ingrain and cartridge papers are 30 inches wide and the divisor should be 50.

How to Take Off the Old Paper

To remove old paper, brush it over with a free coat of thin, hot paste. Peel off the dampened paper and sweep down the walls to remove the grit. Any broken places must be filled with a mixture of plaster of Paris and water. It is a help to count the wall strips already upon the wall before removing them.

Since wall paper has but one edge cut when it comes from the store, one must cut the other at home, and this is best done by opening the roll a few turns, trimming off the edge smoothly, and rolling the paper up as fast as the trimming progresses.

Then measure the length of the ceiling. Usually it will be found best to run the paper the long way of the room, although the position of the windows must be taken into consideration, as the paper should lie away from rather than toward the light. Allow 6 inches to lap down on the side walls; also allow for any irregularity in the wall. Do not cut the strips, but tear them, using the carpenter's square.

When one strip is cut, lay the roll of paper against the edge of this cut strip until the pattern matches and then tear off the surplus paper. Lay the edges of the ends evenly together and measure the second strip by the first. Lay the roll back on the cut strip and use the waste paper to determine the amount to be removed from the next strip. In this way it will be necessary to match the pattern but once.

A Good Job Depends Upon These Things

The ceiling must be put on first, and as the first piece is the keynote to the whole ceiling it must be very true.

To insure a straight start, take a piece of heavy twine and cover it well with blue or red chalk, then fastening one end at the angle of the wall and ceiling and about 15 inches out from side wall, draw the other end over to the opposite side of the ceiling at exactly the same distance from the side wall and hold it firmly against the ceiling with one hand, while with the other you snap it against the ceiling. A clear mark will be found in the place where the edge of the first width of paper should go.

With these preliminaries finished it is time to put on the paste preparatory to starting the actual papering. Lay the paper face down on the board and be sure to see that the paste is all over it, taking particular pains with the edges. To make the long strips easy to handle, fold both ends over toward the center, pasted surfaces together, and continue to fold it back and forth until a convenient size. Always lift the paper on the palms of the hands and touch it with the finger tips as little as possible.

Beginning at the end, use a firm pressure so as to get a hold on the wall at the start, and work from the colored line toward the angle of the wall, brushing along the line and back toward the wall. If the paper does not run quite true, pull it loose and relay. In old houses it frequently happens that both the ceiling and side walls are uneven, which causes the paper to wrinkle past all efforts to brush out. If it does, take the point of scissors and tear across the line of the wrinkle and then brush down; it will not show when dry. A cut width is always visible.

The surplus paper which laps down on the side walls at the ends and at the side of the first width always shows wrinkles,

and it too should be clipped with sharp scissors and brushed flat. Special care must be taken to have the paper well worked into the angles of the side walls and ceiling. This can be done by a vigorous use of the brush. If it is not done it will crack loose when dry.

When measuring for the side walls allow 3 or 4 inches if a border or drop ceiling is to be used. This is essential in order to have a good joining and to allow for inequality in the wall. If the walls are very uneven, measure at the highest part of the room in order to avoid piecing at the bottom.

Your Work Need Not Look Amateurish

Commence to hang the side walls at the right-hand side of a door or window that reaches quite to the border or above it, and where there is a wide expanse of wall. As it is quite as necessary to start this as true as the ceiling, use a plumb line, and if necessary use a narrow strip of paper between the width and the door or window where it fails to join. A full-width strip should never be pasted in the direct angle where side and end walls meet. Cut the paper, allowing a quarter of an inch to lap, and use the portion removed for the other side of the angle, even though it should be no more than an inch. This insures a good match.

The spaces above the doors and windows should be papered as one goes along, and great care should be taken to match the paper here with as much accuracy as in the larger spaces, or the room will look amateurish when finished.

The border goes on last, and it is advisable to cut the lengths of the side wall in order to avoid piecing, for the joints always come in the angles of the walls. This, however, requires two persons to handle the paper. If you are doing the work alone cut the border into shorter lengths, with a little lap allowance. Always be careful to see that the edges are well pasted down.

A good paste can be made from flour. Mix it with a little cold water until smooth, and add boiling water and cook until the color changes; then add cold water until it is of a good working consistency.

Remember that a small room should never have paper with large and glaring figures upon it; as it tends to make the room appear even smaller than it is.

Rooms with a few windows or with a north light should be hung with paper of a warm color, one which radiates instead of absorbing light. Sunny rooms are lovely in grays, pale-greens, tans, and browns.

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You want the RIGHT feed for your dairy cows—that's sure. You can't afford to consider economy at the expense of quality. But if you can make a positive saving without sacrificing quality, you lose money if you fail to make the saving. It is because of its ECONOMY as well as its QUALITY that successful dairymen favor

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Your feed dealer can supply you with Clover Leaf Dairy Feed, also Clover Leaf Calf Meal, Clover Leaf Horse Feed and Peerless Horse Feed. If your dealer does not handle Clover Leaf Feeds, write us, mentioning your dealer's name and we will send you a valuable Farm Record Book—absolutely FREE.

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We have hundreds of busy men like Mr. Woolley who earn \$21.00 and more in their spare time every month. They look after the local subscription interests of the *Woman's Home Companion* and *The American Magazine* on a salary and commission basis. Renewals count the same as new subscriptions.

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Desk "K," Chief of Subscription Staff

THE CROWELL PUBLISHING COMPANY, SPRINGFIELD, OHIO

THE AUTO-OILED WINDMILL WITH DUPLICATE GEARS RUNNING IN OIL

Every bearing is constantly flooded with oil. Two quarts of oil in the gear case of this 8-foot auto-oiled windmill will keep the gears and every bearing flooded with oil for a year or more.

The galvanized steel helmet covers the gears, keeps out rain, keeps out dust, keeps in oil. The mill needs oiling but once a year.

There is a windmill, known the world over as "the windmill which runs when all others stand still." This new windmill with gears and bearings flooded with oil runs in much less wind than that well known windmill.

The two large gears, which lift the load straight up, are each independent of the other and each is driven by its own pinion on the main shaft and must take its half of the load at all times.

The auto-oiled windmill, with its duplicate gears and two pitmen lifting the load straight up, is unbreakable. Every 8-foot mill is tested under a pumping load of 3000 pounds on the pump rod. For the larger sizes the load is proportionately greater. We know that every one of these windmills is unbreakable. We venture the assertion that this is the most nearly perfect, best made, best tested, best oiled, most nearly perpetual, automatic and self-sufficient of any machine of any kind ever made for farm work and the most nearly fool-proof.

There is no friction on any part of the furling device when the mill is running and very little when the wheel is furled.

A small child can easily furl this windmill or an automatic regulator can take care of it. One of these mills has been furled 10,000 times in one day by a man on our premises—more times than it would ordinarily be furled in 30 years of service.

A band brake, of the automobile type, is used, and it always holds.

The gear case contains two pairs of gears and the supply of oil. From this gear case the oil circulates to every bearing in a constant stream. It flows out through the friction washers in the hub of the wheel and is automatically returned to the gear case. Not a drop of oil can escape. It is used over and over. So long as there is any oil in the gear case the gears and every bearing will be flooded with oil.

If you are tired of climbing a windmill tower; if you are tired of buying repairs and having them put on; or, if you are tired of waiting for a big wind, let us furnish you an unbreakable, self-oiling, ever-going mill to go on any old tower. It costs but little and you will get the difference between no water in a light wind and an abundance of water in almost no wind. The flooding of all the working parts with oil, the perfect balance of the wheel and vane on the tower, the very small turntable on which the mill pivots and the outside furling device make this difference.

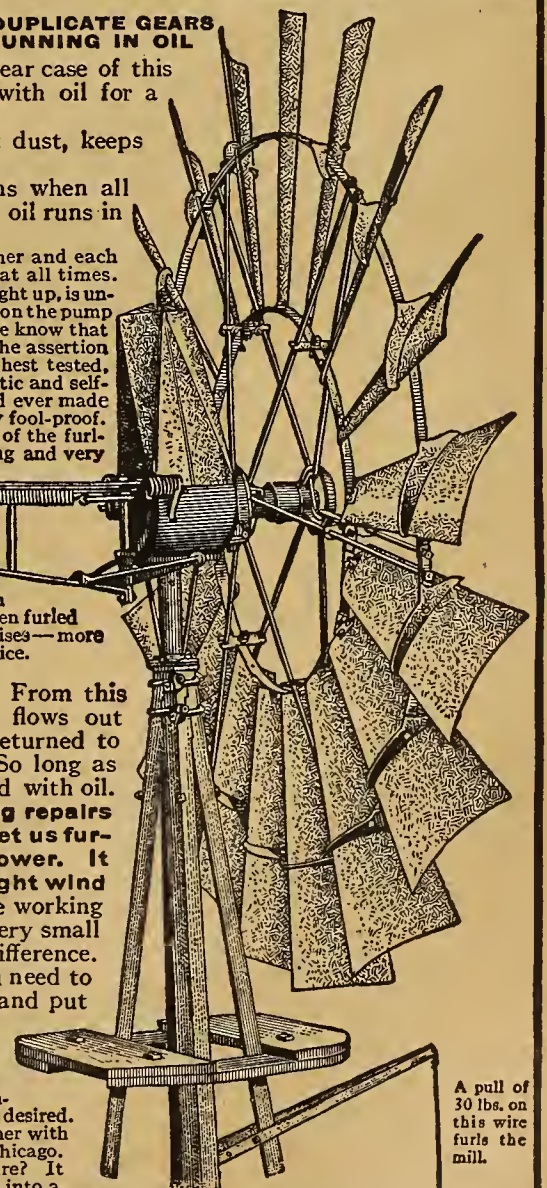
Now there is no objection to a high tower. Have as high a tower as you need to get wind. You don't have to climb it. Your dealer can come once a year and put in oil, if needed, and inspect the mill.

Running water purifies itself—stagnant water, standing water, collects and retains impurities. If you pump from your well constantly all the water it can spare, the water that comes in to take its place will be pure. If the water in your well stands until you happen to want some, and you pump but little, then it is likely that surface water will flow into it and carry in impurities. The unsafe well is the one that has standing water. A flowing stream is the thing to be desired.

The auto-oiled windmill makes all this possible as it can run from one year's end to the other with practically no wear and no cost. If interested, write Aermotor Co., 1146 So. Campbell Ave., Chicago. Why not have flowing water, cool in summer and warm in winter, always fresh and pure? It will cost next to nothing. It will give health to your family and stock. Let the water run into a good size reservoir and raise all the fish of the choice kinds your family can eat, and have water to irrigate your garden and make it raise many times as much as it would otherwise. Water costs nothing. Use it. To let it stand is to abuse it.

We need and must have the best dealers everywhere. They need us if they are going to remain in the windmill business. Write right now.

A pull of 30 lbs. on this wire furls the mill.



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EVERY BEARING FLOODED WITH OIL

EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in **FARM AND FIRESIDE** that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - - Editor

February 27, 1915

Why Support the Scientist?

A FEW years ago the great cabbage industry of southeastern Wisconsin seemed doomed. A disease called the "yellows" was devastating the cabbage farms every year.

A modest scientist, Prof. L. R. Jones of the Wisconsin Agricultural College, devoted himself to the study of the problem. In about five years he and his assistants have succeeded in breeding a strain of cabbage which is almost entirely immune to the disease.

This disease-resisting cabbage will make an almost perfect stand on land so full of the disease that ordinary cabbage will not make over a third of a crop.

The result is that the Wisconsin cabbage industry will flourish again as soon as seed of the new sort can be grown with which to put it on its feet, and it seems likely that the cabbage growers in other States will benefit quite as much.

This is an instance which is more than ordinarily striking of the sort of work some of our scientists are doing. No class of men are more deserving of our admiration or of our financial support.

Farming Not a Bed of Roses

ROMANCES of farm success are very prevalent in print these days—and some of them are true. People do win. Occasionally there is to be found a man who has conquered the lions in the path of him who suckles at the dugs of Mother Earth. These successes are not so frequent as some of our writer friends would lead us to think.

Farming is a man's game—and that means that it is a game in which it is easy to lose. In the near-farm literature so popular just now, the great mistake is made of trying to prove that it is a man's game, and at the same time one that can be successfully played by experimenters, tenderfeet, and weaklings.

And after all, what is success? Is it to become rich? Not many achieve riches on the farm. Is it to live securely, wholesomely, sanely, with no fear of loss of work or of the wolf sniffing at the door?

If the latter is the measure of success, the farm offers opportunity for it in larger measure than any other life. But it would be far better if those who laud the idyllic life of the farm knew a little more about it.

What is a Balanced Ration?

AT A RECENT farmers' meeting a practical dairyman said: "We have gone crazy on the balanced ration. Much more important than this are palatability, variety, and quantity."

This will be approved by many of our best

feeders. Tests made at the University of Wisconsin show that cows will do so poorly on some "balanced" rations that they will run down in flesh and will be unable to bring forth living calves.

Does this mean that the balanced ration is a delusion?

Not at all.

It means that we don't know yet all about balancing rations. We have supposed that one protein is just like another protein, one fat just like another fat. Recent experiments show that this is not so. A protein consists of eighteen or twenty things. They all have these eighteen or twenty things, but in different proportions. The animal to which they are fed takes the protein apart and builds it up to his own needs. This accounts for the benefits found in variety.

The animal's appetite is Nature's guide to the sort of feed needed. This accounts for the benefits of palatability.

Animals as a rule do best on the feeds they like best.

All fats and carbohydrates are not of equal feeding value, although the chemist can detect no difference in them. Young animals need the fats manufactured by the maternal organs, as in milk and eggs. The vegetable oils are not so good. Oleomargarine, therefore, is not as good, for children at least, as butter.

All this shows, not that a balanced ration is not a good thing, but that we do not yet quite know how to figure a balanced ration. We do not know how to mix the different proteins, carbohydrates and fats to strike a real balance. We can do better than to guess, but we still have much to learn. Some scientists are already at work on the problem. They are doing a work which when finished will put feeding for the first time on an accurate business basis.

Rats

A PROFESSOR in a Western agricultural college has been for some seven years engaged in the study of feeding problems. He chose the rat as the animal to be used in his experiments.

Scientists were agreed on the statement that when rats are fed in a certain way they die.

This man found that, while most of them died according to rule, some of them lived.

He made up his mind that the trouble was in the rats quite as much as in the feed, so he took those with vigor enough to live under these severe conditions, and bred from them a more vigorous strain of rats. After a few generations of such breeding he found that he had a stock of rats which were able to live and grow on rations which, according to the other scientists, ought to have killed them.

Sometimes college professors use slang. This professor did.

"I am breeding 'pep' into my rats," said he. "Laboratory rats have been kept warm, fed a fairly good ration, and pampered for many generations. They have lost vigor. I have bred vigor back into my rats; I wouldn't admit a Yale or Harvard rat into my breeding stock for a hundred dollars.

"And 'pep' can be bred into live stock by paying attention to the matter. Vigor is often lost sight of in breeding.

"The ability of any animal to assimilate feed and make rapid growth is a quality which is hereditary.

"The man who forgets vigor, and selects his breeding animals for the shape of the nose, the color, or the plumage, is forgetting the most important thing and keeping in mind the least important."

All of which is absolutely true. There is no proper test of a meat animal except meat, of a milk animal save milk, or of an egg animal except eggs. And all these depend on what the professor called "pep"—in other words, vigor directed to the manufacture from feeds, of meat, milk, eggs, or some other animal product.

Vigor exerted along utility lines is the basis of proper breeding for farm live stock.

We have milk tests, meat tests, egg-laying tests, and many others—won't someone discover an accurate test for vigor?

This Agent Paid Dividends

THE farm values and incomes of Bigstone County, Minnesota, increased \$12,000 in the first year of the county agent's work. So estimates "The Farmer."

This sum is made up of 390 calves from registered bulls which he brought in, worth \$10 a head more than scrubs would have been; 50 colts from a registered stallion, with \$20 a head more; 2,000 acres of corn from tested seed giving an increase of three bushels per acre; 75 acres of alfalfa which would not have been seeded, worth \$10 an acre more; \$3,300 profit from the treatment of seed grains which would not otherwise have been treated; to which should be added savings from treatment of hogs for hog cholera, which cannot be even estimated, and 600 acres increase in alfalfa acreage the second year.

The farmers of Bigstone County will not be likely to fail in their appreciation of such work, and there are many counties in which the agent's work is equally valuable in dollars and cents. The continuing benefits will multiply the figures manifold. But it would have been perfectly possible for the agent's labors to have fallen flat and profitless.

Probably there are hundreds of farmers in the county who received no benefit at all. These are of two kinds—those who were getting the most possible out of their farms before, and those who refused to co-operate with the county agent. The former are few; the latter many—unless the county is an exception.

You may lead a horse to water, but you can't make him drink.

The county agent is a good thing to those who have the progressiveness to use him.

The Inspector's Mailed Fist

THERE have been some curious doings in the foot-and-mouth campaign.

One New Jersey farmer was visited by seven different inspectors. Two of the inspectors claimed to find symptoms of foot-and-mouth disease in his herd, and reported their findings to the Government. Thereupon the place was quarantined and the cattle ordered killed.

When the owner saw the open trench all ready for his cattle he began to use his telephone. He summoned five other veterinarians, none of whom found any symptoms of foot-and-mouth disease. He wired his representative at Washington. Soon an expert from the Bureau of Animal Industry stepped off the train, made his investigation, and returned. Then the quarantine was raised and the herd saved.

If this had happened a thousand miles from Washington instead of two hundred miles, those cattle would have been slaughtered and no one any the wiser, though the farmer would have been sadder.

Dr. Lucky, the state veterinarian of Missouri, frankly admits that none of his force were familiar with the symptoms of foot-and-mouth disease when it broke out. But Dr. Lucky and his chief deputy went to Chicago and saw some real cases. He says that the younger inexperienced veterinarians are likely to mistake ergotism, which is not contagious, for foot-and-mouth disease, which is.

We have no sympathy with the assertions that the United States inspectors are lacking in integrity or are unduly officious. Mailed-fist methods are needed to exterminate foot-and-mouth disease, but the fist must strike in the right place.



Safety First With This Year's Chicks

Common Causes for the Needless Loss of Near Fries

By B. F. W. Thorpe

A POULTRYMAN in New Hampshire keeps thousands of hens but doesn't raise a chick.

Each fall he sells his hens and buys pullets just ready to lay.

He is making money.

There are also plenty of poultrymen engaged in the day-old chick business. These people apparently want to dodge the critical first three months of a chicken's life, and no wonder. The man or woman who can raise nine out of ten chicks is proud of the achievement. Eight out of ten is also a good record. In fact, a poultryman who can always bring to maturity half of the chicks hatched will seldom complain of his "luck."

Here is a list of the things which most often cause the premature death of chicks. These can be prevented just as well as accident to human life and limb can be stopped if we go about it in an intelligent, determined way.

Down With High Nests

When beginning with poultry, I set a hen in a tin cracker box—the kind so often used for display. The nest was some distance above the floor. The hen did well until six chicks had hatched, when one of them fell out of the nest and couldn't get back. The next morning the hen was hovering the single chick outside the nest. All those in the nest were dead, as were also those in the shell just ready to hatch. Since then I have always used nests which can be closed at hatching time and thus prevent such loss.

The old-fashioned hen that steals her nest under the burdock leaves in the fence corner is sufficient proof of the desire for seclusion. When sitting hens are near together they will quarrel, sometimes with damage to the nest, and nearly always the motherly disposition of the hen suffers.

Till the chicks are hatched and well past the tender age, keep the broods where they cannot mix freely. This is especially important when the broods are of different ages.

Don't Compromise With the Rats

One poultryman I know went out of the business because the rats killed the chickens as fast as he could hatch them. His yards yawned with rat holes and the gnawed skeletons of unfortunate chickens. He was forever pattering around putting stones in the holes in the yard or tacking tin over those in his coops.

A thorough rat-killing is the first thing to undertake in such a case, and see it through to the finish. Use traps, or poison, or both. For effective rat-exterminating methods, write to FARM AND FIRESIDE. Finally, set your hens—and brooders too—in rat-proof buildings made so by metal lining, concrete floors, or other rat-excluding contrivances.

A young man who was making a start with poultry had 50 early chicks, some of them from high-priced eggs. He fed them too freely on raw corn-meal mush and half of them soon died of indigestion. The others gradually got better after the feed was changed, but were slow in regaining full vigor.



Feed him what he needs when he needs it. This article tells how

chick requires no feed for the first twenty-four hours. Then begin on finely chopped hard-boiled eggs, shells included, Graham crackers, dry bread crumbs, rolled oats, well-cooked corn bread, or commercial chick feed. Sprinkle these foods on sharp sand or grit. Feed often and only what will be cleaned up in five minutes. Dry foods are safest for the first month.

When the chicks are running on free range in summer they will find enough bugs, worms, and insects to balance their ration. After a month you can feed cooked vegetables in moderation. Fresh sour milk to drink should be supplied from the first if possible.

The disease known as bacillary white diarrhea is the most fatal of any affecting young chicks. It is due to a germ, and the disease is infectious. To avoid it, be cautious when buying hatching eggs or breeding stock to be sure that the person you get them of does not have it on his premises.

It has been found that sour milk fed to chicks from the start will prevent the development of white diarrhea and other forms of bowel trouble, even if the chicks are infected with disease when hatched. Good success has followed the practice of squirting a few drops of sour milk into each chick's throat with a medicine dropper soon after hatching.

Good general sanitary precautions are sprinkling air-slaked lime on the poultry-coop floors and dissolving a teaspoonful of permanganate of potash in every five gallons of drinking water. Also keep young chicks off the ground where diseased chickens have been kept.

Air Marauders

In some sections the hawk problem is one of the hardest. A poultry yard with the top covered with wire netting is a sure protection. I have used such a yard, and it kept out cats as well as hawks. But it was expensive to make and is not practical for large operations. Shotguns and scarecrows are practical. One of the best scarecrows is a dead hawk hung on a pole near the chicken run.

If you can't kill a hawk, make an artificial one out of cloth. Bright tin cans hung where they will flash in the sun and also strike each other when the wind blows are effective. A lifelike dummy holding a gun is good too, especially if you shoot at the hawks occasionally yourself. Steel traps set on high piles so the chickens will not get caught are also good. Back numbers—April 25, 1914, and May 9, 1914—of FARM AND FIRESIDE tell all about this.

Until chicks are well feathered, cold rains are a bad drain on their vitality.

The last of April, one year, a rain came up while I was away from home. About 30 of my best pure-bred chicks were soaked and half dead. They were lying around the bottoms of the small coops which had been foolishly left in low spots. Some of the chicks were apparently lifeless.

I half-filled a bushel basket with straw, put in a well-filled hot-water bottle, covered it with flannel, and laid the chicks around it. In an hour they were all chirping [CONTINUED ON PAGE 23]

Studebaker

WAGONS BUGGIES HARNESS



WHY IT PAYS TO BUY A STUDEBAKER

I am using a Studebaker Farm Wagon which has been in constant use for 35 years. The wagon was bought from J. D. Lester by Fred. Gruner and was used for hauling grain to Telena, fifteen miles away.

I bought the wagon from Mr. Gruner and have hauled as high as 50 bushels to the load.

The wagon has been in several runaway accidents but has never had a broken wheel or axle, nor has a new felloe or spoke been put in.

The wagon is in excellent condition and is being used every day.

C. E. Stephenson,

Atwood, Ill.

Hauls his grain to market in 35 year old Studebaker

HERE'S a Studebaker wagon that has had hard usage for thirty-five years, served two owners and is still on the job.

And this isn't an exceptional Studebaker, for we have thousands of testimonials telling similar stories about the long life and good service Studebaker wagons have given.

Why Studebaker's Last Longest

These many long lived wagons are the result of Studebaker superiority; a superiority which comes from the long ageing and weathering of the timber, tested steel, the splendid standardization of the manufacturing processes and the rigid requirements of test and re-test through which each wagon has to pass. Even Studebaker paint and varnish is analyzed before it is used.

But, remember, since paint can make all wagons look of equal quality, appearance

is a most deceptive thing. And that since the cost of a farm wagon is in direct proportion to its length of life, that wagon is the *cheapest* that can prove the longest average term of service.

To make sure you will get a lifetime of service, buy a Studebaker. You will never regret having bought it.

Studebaker Buggies and Harness are also built to outlast others.

STUDEBAKER, South Bend, Ind.

NEW YORK CHICAGO DALLAS KANSAS CITY DENVER
MINNEAPOLIS SALT LAKE CITY SAN FRANCISCO PORTLAND, ORE.
Adv. 2031

Studebakers last a lifetime

Yes, There's the Red Ball It's Sturdy Old "Ball-Band"



Our honest determination to make "Ball-Band" Rubber Footwear the very best that money can buy has had a big reward.

Over eight and one-half million men wear "Ball-Band" Rubber Footwear. Over 50,000 stores sell it. Nearly every man who buys rubbers knows

"BALL BAND"

Every spot where extra strain comes on a "Ball-Band" is made strong. "Ball-Band" Rubber Footwear is made over a natural last. It fits comfortably and makes work easier. It saves money because it gives more days wear at a lower cost per day's wear.

Write for Free Illustrated Booklet **"More Days Wear"**

It tells you how to get out of "Ball-Band" all the good service that we put into it. A book worth having.

Mishawaka Woolen Mfg. Co., 305 Water St., Mishawaka, Ind.

"The House That Pays Millions for Quality"

Look for the Red Ball

I Am Patrocena!

The Love of a Mexican Girl, Her Hero, Her Revenge, and Her Surrender

By G. Henry

A Story in Two Parts—Part One

I SAW an Americano, and loved him—and I sent him away. Inconsistency of a woman? I am not "a woman"—I am Patrocena!

I was attending one of those exclusive Americano seminaries when I saw him, and when he saw me. I permitted him to look into my heart when it was warm, and I forced him to look into my heart when it was cold.

Many men have said that I am beautiful.

Here is a *billet-doux* from a Mexican gentleman, a soldier, a man of wealth and family. He sent it secretly by a messenger, for certainly no Mexican girl is permitted to receive letters like this. This is especially true of me, for my father is very stern; and Don Francisco is my father, and mother too, for my sainted mother has passed away.

"Patrocena of Mexico," says the note (as though I were the only Patrocena, and the republic has many beautiful Patrocenas), "Patrocena, will you deign to cast your eyes my way? Will you let your eyes light my path, captor of my heart? Will you smile upon me but once, that the smile may be photographed upon my soul? Place your slender foot upon my neck, Patrocena, and I shall be proud. Openly spurn me and I shall be encouraged, for that were better than silence. Beautiful, captivating, charming, alluring Patrocena, honor an humble suitor by looking upon him."

There! as the American girls say. "Humble suitor," and he is one of the richest and handsomest young men in Mexico! Now, why should this American señor fail at first to look my way, and then woo me, and then—but I must not anticipate.

It was at a game of football. I do not understand the game of football of course, but I saw this: I saw a big Americano take the funny-shaped ball and start for the two sticks with the bar across their tops at the other end of the field. I saw men try to stop him, but they were toppled over. The excitement was greater than at a bullfight. The thousands in the seats cheered. We all cheered as the big Americano bowled over man after man who tried to har his way, or tried to tackle him. That is what they called it, tackle. A man behind me quite forgot his manners and slapped me on the shoulder and shouted at the top of his voice. "That's the greatest run ever made on this field." The crowd would not have become so excited unless the event were a notable one. I quite believed him.

So that won the game for the Cornell men, and then the hero was introduced to me. I was burning with curiosity. He was so big and handsome and so manly-looking—a masterful man. The crowd carried him on its shoulders until he managed to get on his feet on the ground. Then one of our escorts told him some ladies wished to speak to him. As he approached he was grinning, which was not pretty, not courteous, not polite; but he was a hero, and privileged, as all heroes are. The other girls from the seminary appeared to think so. Then he stood in front of me. I know I looked my prettiest, for I was excited. I smiled up at him, he was so tall, and I am so little I shall ever be Chiquita to my intimates. I could feel my face flush. As a special mark of honor I offered him my hand, and he took it, indifferently, turning to answer the questions of others. Again he turned to me, and I looked him full in the eyes. They tell me my eyes are compelling. Black eyes should control blue eyes in matters of the heart, and my eyes are black and the football hero had blue eyes.

Now he deigned to notice me particularly, this great Americano. For a moment he appeared to forget about athletics, which was strange, for everything and everybody about us suggested athletics. Even the girls looked like athletes in their sweaters and heavy-soled shoes, and square shoulders, which are neither natural nor graceful in a woman. But I had not adopted these outlandish, unfeminine customs and costumes. I remained Patrocena, wearing my modish Parisian clothes, for I have no reason for wishing to conceal my figure. He was interested, I could see it in his eyes that he was interested. "Señorita, didn't we hammer 'em right?" he asked as he laughed like a big boy.

"Yes, señor," I agreed dubiously, "it was a great hammering game. It was almost as exciting as a bullfight." I looked at him in his football clothes. His hair was long and very tousled. There was an ugly scratch on his left cheek, and before I knew it I had wiped the blood away with my handkerchief. The other girls gasped and the hero blushed, and in a moment I was in confusion. The crowd had seen my action and cheered. "Hooray for the pretty Mexican!" they howled.

But when the hero appeared much embarrassed, saying in a low growl, "Don't mollycoddle me," my heart turned to ice. He was scolding me—me, Patrocena—because I had paid him the highest of high

compliments. He was displeased with me for doing the most delicate thing a lady can do for a knight whose victory she approves. Never before had a man rebuked Patrocena. It is unnatural that a man should rebuke a woman—before marriage. My heart was on fire, my blood was racing when I did that little act, now it was icy cold. He still held my hand! or, rather he had taken it again, and the girls around me, my college mates, were becoming uneasy. Evidently they were jealous. Men began to flock our way to talk to the hero, to congratulate him, to ask him hundreds of questions. With an ardent look into my face, during which I am ashamed to say he must only too easily have read my secret—that I admired him—he squeezed my fingers. But he turned away from me to talk to others when my eyes said plainer than words, "I want you to talk to me." I was spurned whilst I palpitated. He should regret that.

So I drove away in an automobile after a time. I,

move under his coat. It was difficult to affect indifference to this man, but it must be so. He led me out of doors to a broad piazza which had late flowers, and vines in profusion. It reminded me of home. And the moon was shining brilliantly, and the sky was blue, and the air was soft—and I must remain cold to this magnificent beast-man! There came just now an intermission in the dancing, and I said, "Señor, I should like to hear some home music. Will you please ask the musicians to play La Paloma?" He returned in an instant. We were quite alone. As the strains of La Paloma rose and swelled and trembled on the night air, my heart rose and swelled. Tears came into my eyes—and I looked up at this royal bear beside me. His face was raised to the sky, and he was listening intently to our most touching piece of music, and I saw that he had something in him beside football; but there was Señor Manuel of the army at home and the social station he represented, and revenge, and I steelled my heart. The hero beside me came to earth when the last strains of the tender music melted into

our ears and he looked down upon me from his great height. His face was soft. The music had chastened his soul. He began to talk in a low voice. "Can we not walk a little, Señorita?" he began, but I checked him.

"Please take me inside," I said as formally as I could. "I have to make my adieux, for I leave to-morrow for home—"

"But, Señorita Flores," he interrupted, "can't I see you again? I must—"

"Some men glimpse heaven but fail to recognize it," I replied. "Take me in, please."

He was struck dumb. He remained speechless. He was stricken, and I was glad. I had wiped his cheek of the blood of hattle and he had presumed to scold me. I would see to it that he remembered it. Perhaps he would not insult the next woman who gave him evidence of having more emotion than a fish.

"Take me in, Señor," I commanded.

Only you, my pen, and myself shall ever know the tumult of emotions which surged through my heart as the hero of the football escorted me to the ballroom. I was triumphant and defeated, elated and chagrined, for had this inherently cold-hearted Americano been half a man he would have refused to take me at my word. He would have declined to accept dismissal tamely. Oh, some men cannot see! But I had punished him.

He took me to my seat near the girl whom I have called the wall flower, and he remained a moment as if he would speak, but I bowed coldly—and he passed into the stately corridors of the great rich hotel in which the fête was being held.

So I dismissed him from my mind. I closed my eyes to his manly manliness, this tall, broad-shouldered Americano. I would have no more of his image to pester me and distract me.

Soon the letters began to come from Don Francisco, my father-mother, urging me to start for Chihuahua, and it was only natural that my thoughts should turn to Señor Manuel, gallant soldier and gentleman, tender with ladies. I could see his black eyes kindle as he greeted me. I had day dreams. I could feel my father's arms around me. I could hear my sisters laugh merrily as they flitted about the great hacienda. I dreamt about Don Pedro, my pet burro. I had arrived on the train and was being driven across the desert to our home. The drive over, I was at home in the Marble Palace, as the peon laborers and vaqueros call it. My father was happy. My eleven sisters and myself had returned to him from the various cities in Mexico and the United States and Europe where we had been at school. We were all together again, and we were joyous. Then I slipped out to the paddock, and there stood Don Pedro, his ears alertly erect as I approached. His eyes, usually dull, were shining, and I embraced this true four-footed friend. I gave him sweets purchased in Chicago, and he followed me into the palace, scandalizing Don Francisco.

My home dreams came true. They were even more than realized. My sisters were all there. My father was overjoyed, happier than since the sad day when my sainted mother left us. But despite my surroundings at home, the most pleasant any Mexican girl ever has had, perhaps, I could not entirely banish from my mind's eye the broad shoulders and the tall, muscular figure. Often and often I imagined that I felt the swelling muscles under my fingers—ah, such an arm to clasp a woman's waist! My favorite sister, Dorotea, divined that my mind was preoccupied with some subject, and of course the subject must be a man, in her mind, and she hinted at it once or twice, but I dismissed her insinuations.

Not for a great deal would I have Dorotea know the truth: that I was haunted by the image of a Gringo—a Gringo who had had the temerity, the senseless effrontery to scold me in public.

[CONTINUED IN NEXT ISSUE]



I deigned to wipe his bloody cheek . . . "Don't mollycoddle me!" he cried

Patrocena, had to all appearances forgotten the very existence of the hero of the football.

There was the dance a few evenings later to celebrate the victory. I can dance. I was taught dancing in Madrid and Paris, and it is like nature for a Mexican girl of breeding to dance. Señor looked very handsome in his evening clothes. His shoulders were broader than ever. The little patch hiding the cut on his cheek made him still more handsome, for it was remindful of his heroism; it was the saber mark of victory. I was seated in a secluded corner. I saw him the center of an admiring group. Girls were eager to make his acquaintance. Young men were silly about him. Many men were introduced to me and I talked animatedly to them. I waltzed with one blond giant, allowing him to hold me a great deal closer than was good for either of us, and I saw to it that time and time again we whirled close to the señor, who sat talking with a wishy-washy girl (Oh, this slang which I acquired in America!) who was what is called a "wall flower." I know that I looked well. I have a good figure, and my face was animated by my secret desire to make him wish it were he who held me in his arms in the waltz.

Pausing a moment in the dance, I looked about me at the girls. They were beautiful, coldly so, but they did not have the quality which appeals to men. It seemed to me that they were beautiful, but not fascinating. They were statuesque, perfect. They were not soft: they were not Latin. There was no suggestion of tender pleading or gracious yielding in those cold faces. Again I glanced at the señor. He was looking at me, so I smiled, and in a moment he was at my side. "Señorita Flores," he said, "will you please give me a dance?" He had my program.

"I am tired, Señor," I replied.

"Will you let me sit out a dance with you then?" he pleaded. His voice trembled. I had conquered. I did not reply on the instant. I would let him hang on the hooks of suspense, cruel hooks, as I well know. I looked away and then up into his eyes, which were burning.

"Si, Señor," I whispered finally, and so we walked away together. In the hall he offered me his arm. Such an arm! So hard! I could feel the muscles

Australia Farms This Way

By W. D. Hornaday

DRY FARMING has been practiced successfully in Australia for a long while. The first practical work along this line was done there about 1898 as a result of experiments made under the direction of William Lowrie, present director of agriculture of South Australia. His early experiments convinced him that the average yearly rainfall in his part of the country was not sufficient to grow good wheat crops.

To get over this difficulty he fallowed a field in the fall, kept it well worked during the summer, and the surface loose and free of weeds. The winter rains were absorbed in the soil, so he had really two seasons of rain in the soil.

He plowed only about four inches deep and practiced shallow cultivation.

A Mulch Was Kept on Top

Remarkably good results were obtained from this method of dry farming. He brought up the yield of wheat from 7 bushels to 30 bushels per acre.

He did the breaking with an ordinary mold-board plow.

Under the Lowrie method of dry farming, the land is devoted to a crop only once in three years. Sheep are permitted to graze on the straw stubble, and the next year the land is plowed and left idle. After every rain a cultivator is run over it.

The peculiar character of the wheat-growing country, much of it being cut-over land, and the dryness of the ripen-



ing season for the grain have called for special types of implements.

Large areas of land in South Australia are densely covered with scrubby brush known as mallee. This bush grows to a height of about 20 feet. Its trunk is 2 to 8 inches thick.

The scarcity of labor and the enormous task that would be required to clear this growth from the land in the ordinary way caused the invention of a mammoth wooden roller which is hauled through the brush by several horses, leveling the shrubs to the ground. As soon as the hot weather sets in the broken growth quickly dries and is burned down.

The Plow Jumps the Stumps

Instead of grubbing the stumps the fields are worked by what is known as a stump-jumping plow. When the plowshare strikes a stump it is thrown back automatically and passes over the obstruction, returning to its place, when it

again strikes the soil. The plows are usually operated in gangs of 2 to 20, about one horse being required to each plow. The harrows and cultivators are also made with the automatic stump-jumping attachment.

Owing to the fact that the stumps of the shrubs and trees upon the cleared land are usually 6 to 12 inches above ground, it is not feasible to cut the wheat with the ordinary harvester or reaper. This caused the invention of a harvesting machine which is known as the Ridley stripper. It is not patented, and is manufactured by a number

of concerns in Australia. The machine combs the wheat off of the straw and throws it into a box by means of a fast-running set of beater bars attached to the back of the comb.

This wheat-stripping machine was invented 50 years ago, and its application to stump-covered land quickly brought about an enormous increase of the wheat-growing acreage. In the early days of the industry here, wheat had to be winnowed by hand after going through the machine.

The Government offered a large bonus to anyone producing a machine that would do all the work, including the threshing and placing the grain in bags. An attachment was invented for winnowing, and later a machine called a stripper-harvester was brought to perfection. It strips the heads of the grain, winnows it, and places it in bags for market.

Wheat that is on the straw in the morning if often made into bread the same day.

Investments That Are Safe

By Herbert Quick

WHEN a man is approached by the seller of some investment security—or insecurity—he must needs be an expert if he can meet and overcome the well-planned selling talk of the agent. The average man with a few dollars which he would like to use so as to breed more dollars must take refuge in his knowledge of certain principles.

Why Interest is Low

The safest protection against losses from bad investments lies in keeping in mind the fact that there are two elements in every investment—interest and safety. Where the investment is perfectly safe the interest is low; that is, nothing is received by the investor except pure interest.

Where the returns promised are high they consist in two things—pure interest and compensation for risk.

The risks may be of many kinds; among them are possible loss of princi-

pal, possible delay in collection of principal or interest, possible failure of the business to live and pay profits.

Securities bought and sold regularly on the money markets of the world bear prices which buyers think are fair when these things are considered.

"Schemes" are of a different sort. They have no price fixed in the market, and therefore the investor has no benefit derived from the buying and selling in the world's markets.

When he buys a government bond, a railway bond, a municipal bond, or a public-utility bond, the market price is the judgment of the investors of the world as to its value. This judgment of experts, backed by the experts' money, is worth a great deal to the average investor.

But the "scheme" contract or bond which offers big profits quickly made has no price fixed by anyone's judgment. The buyer's judgment is very often over-

come by the salesman's glib selling talk.

The man who feels inclined to part with his money on such a scheme ought to remember that returns above average interest represent risk. If the returns promised run up into such figures as ten, twenty, forty, eighty, or a hundred per cent, he should not forget that the risk is very great, or the contracts would be bought up by moneyed men capable of seeing farther into the deal than any of us can see.

The 20% Investment

If the bargain were as good as represented, the salesman would have no difficulty in getting all the money needed to carry millions in it himself, and the people carrying such bargains would soon have all the money in the world.

Nobody would sell a twenty-percent safe investment. He would keep it.

The fact is that there is no such investment.

The Most Senseless Vice

A Michigan Viewpoint

WE HAVE a lot of good farm papers, and they have certainly helped the farmer's family in many ways.

But there is one thing I seldom see mentioned, and I wonder why? Why do we see so little about the habit of swearing among farmers?

And why is there so much of it on the farm?

It seems as though, as close as we are to Nature and as much of her wonderful work as we see every day, that the farmer would be the last man on earth to take the Lord's name in vain.

Mild "Cuss" Words Shocked Us

But I really believe there is more swearing sandwiched into the farmer's conversation than with any other class of men. At least I, who was brought up in town, never heard so much of it as I have since I made my home in the country.

I spent eight years of my school life in city schools, and I remember how shocked we were when we happened to overhear the mildest of "cuss" words.

Since I have lived in the country I

have had an opportunity to observe three different district schools, and I find that not only the boys but even the girls will occasionally use words that it seems impossible they could even have heard.

And this community is considered exceptionally prosperous and refined.

Can anyone tell me what we few, who do care what kind of talk our children hear and use, are going to do about it? We can't keep our children by themselves; in fact, we don't want to, as we want them to have friends outside of the home circle. We realize that otherwise they cannot grow mentally.

It isn't just the wickedness of it, for to me it seems like a really serious sin. But the coarseness and vulgarity of it, as well as the utter uselessness! Yet the man who does not swear is the exception rather than the rule.

An Unbelievable Situation

"To bite the hand that feeds them!" It is literally that. Cursing the Maker of the very things for which we should send up a thankful prayer every day of our lives!

My 1915 Book free Here It Is-Read! Act!

My better than ever, bigger than ever, book of bargains for 1915 and price reducing sliding scale schedules on gasoline engines and cream separators printed in four colors with special gasoline engine, manure spreader, cream separator, auto truck, elevator, carpet and rugs and vehicle color work; thousands of illustrations of farm and household necessities, implements, building material, wagons, buggies, power transmission goods, saddlery, sewing machines, curtains, stoves, complete line of high class furniture, kitchen cabinets, dairy supplies, pumps, incubators, etc. This great book will save you money. You are sure to buy something within the next few weeks on which we can save you money. Get my prices and learn all about my 1915 price reducing sliding scale schedule before you spend another dollar for anything for the farm or household. A postal addressed to me now will bring this big book. Just say what you are in the market for and it will be sent you by next mail.

Galloway's Sanitary Separator

This new Galloway Sanitary perfect skimming cream separator is made so good in our own factories that I will send it anywhere in the United States without an expert to set it up, to any inexperienced user for a 90-day free trial to test against any make or kind that even sells for twice as much and will let the user be the judge. It's the most modern—the most sanitary—the most scientific—the cleanest skimmer—the most beautiful in design of any cream separator made to day and I have seen them all. I want you to know all about this wonderful separator that is sweeping the field before it.

\$4250
FOR 500 POUNDS CAPACITY
90-DAY FREE TRIAL
TEN-YEAR GUARANTEE

Andrew Yost, West Liberty, W. Va. says: "I received your separator in first class shape and like it fine. It is easy to operate and was easy to put up. I saved \$42.00 and have a good separator as sold for \$86.00."

Galloway Spreaders From \$64.75 Up

NEW LOW DOWN NO. 8 \$8250

Let me tell you about its special patented features; about its light draft, its all steel gear and how it is built of heavy channel steel, trussed like a steel bridge, superior in every respect to new-fangled freaks of heavy draft that eat you up for repairs. K. Foust, Ashley, Ohio, says: "I am more than pleased with the spreader. It has proven all you claimed it to be and more. By buying from you, I saved \$21.80 and got just what I was looking for."

Zenas Spicar, Monmouth, Ill., says: "The new No. 8 spreader which I received from you is satisfactory in every way. Works well on all kinds of manure and gives no trouble of any kind. I like it better than any spreader I ever saw. First, because, I think it reduces the above price according to the number of wheels and can be used in the winter as well as summer. Second, it is light in draft. Third, it is neat in appearance, well painted and costs about \$30 less than many others."

More Power 6H \$9875 For Less Money 6P

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Trapping Hens by the Hundreds

An Experience of Value to the Man With Only a Few

A NUMBER of poultry-keeping farmers have told FARM AND FIRESIDE readers what the trap nest is doing for them when a few dozen or several score hens are kept. Now comes the opinion of the manager of a poultry farm where hundreds of fowls are kept and all the layers are trap-nested throughout the year.

Mr. A. J. Kyle, manager of a New Hampshire farm, thus describes his use of the trap nest.

I believe thoroughly in trap-nesting. My nests are simple and substantial. They do not get out of order and cost me about 30 cents each. I use 30 nests to 100 hens, and with properly constructed houses and practical methods one man can trap-nest 2,000 hens.

The nests are not hard to keep clean, at least the kind I use are not. I have seen some, however, that would require a machinist to clean and keep in order.

For a small flock I believe the trap nest used at the Connecticut Experiment Station egg-laying contests to be equal to any of which I have knowledge.

You Can't Tell a Layer by Her Looks

I have several hens in my flock with big egg records, but I defy any man to pick them out by their shape and looks. I do not keep short-bodied, dumpy hens in my flock. Such are culled out in the fall. Along in March my trap nests tell me which are not real hens. Sometimes the best-developed, long and deep-bodied hens do not pay their keep. These are sold at once, as poultry is high in March.

This knowledge furnished by the trap nest alone pays for the work of trap-nesting, in my business.

Then there are fewer broken eggs and no egg-eating where trap nests are used.

My trap-nesting does not end in the spring, for I want records for the whole year. I cannot guarantee a setting of eggs to come from a pen of 200-egg hens or cockerels or cocks to be from 200-egg matings unless I trap-nest, and this is the stock that is in demand to-day.

It may not be possible for the average farmer with a few hens to trap-nest the

year around, but I think it pays if he can do so. If he cannot spend the time to trap-nest, at least through the fall and winter, he should buy stock from someone who does, to use for improving his flock.

I find it a great help in trap-nesting to use celluloid leg bands with large numbers. I open the nest door, and as the hen walks out take her number, pick up the egg, set the trap, and close the door all in a moment's time.

The hens are taken out of the traps at 7 A. M. when they are watered, at 9 A. M. when they get their dry mash, and 11 A. M. when they are fed; at 1 P. M. when they get their green stuff, and at 4 P. M. when they get their last feed for the day. Occasionally we find a hen in the trap at night when their morning scratch feed is given them. Worked in this way it makes no extra trips.

We have tried the usual methods of picking the best layers without trap-nesting, and found the ways generally recommended to take more time than to trap-nest, and they do not give satisfactory results.

With a few hens and unlimited time I have no doubt a person can pick most of the best layers, but few of us have the time to stand around in the morning and at night watching to see which hens come off the roost first and go to bed last at night. It is also something of a task to go over several hundred hens and feel of the "laying bones."

"Hen Sense" Follows Trap-Nesting

"Hen sense" can be acquired quicker and easier by the trap-nest method than any other. But after all it's common sense that counts in this as well as in all other lines of business. It may take years to increase your egg average, but it takes only a year to spoil a good laying strain. So we must use every precaution and know just what we are using for breeders. I have the best evidence that it pays me to trap-nest.

I have found that hired help I have employed have taken, as a general rule, a greater interest in the welfare of the hens when they were trap-nesting them. Children, too, like the work.

Some of our pens have been tended part of the time by a girl of fourteen years, and I believe she was very accurate, and I am sure she enjoyed the work.

After 25 Years—Success

By B. F. W. Thorpe

IMPROVEMENT of the laying quality of hens by means of trap-nesting breeding stock, as discussed in the columns of FARM AND FIRESIDE, has aroused a lot of interest among poultrymen in every part of the country.

Here are the views of a farmer-poultryman who has been keeping hens for a quarter of a century and trap-nesting his breeding stock for a dozen years.

These views given by Mr. L. A. MacCumber, are backed by his experience during this time.

My start in trap-nesting stock was made about a dozen years ago, and previously, for a period of about equal length, I had not made much headway in improving the laying qualities of my hens.

I then purchased eggs at \$5 a setting from a poultryman who had trap-nested his breeding stock for fifteen years. I found that my pullets hatched from the eggs of the trap-nested stock, started laying at five months old and continued through the fall and winter months, and furnished me the golden eggs I had been striving for. Previously I had not been able to get fall and winter eggs only from an occasional hen.

Since getting my start with trap-nested stock, I have made use of the trap nest to keep my hens up to a satisfactory productiveness.

Not the least of the advantages when using trap nests is the opportunity to get the children interested in better layers.

If the boys and girls are furnished a breeding pen of pure-bred chickens, egg-record sheets, leg bands, and trap nest, and a chance to have a definite portion of the proceeds from their work, you can expect some good results besides keeping the children interested and alive to the importance of improving farm methods.

Three to five dollars look like big money to the average poultry keeper to pay for a clutch of hatching eggs. But a year and a half later, with fair success, four or five dozen pullets can be expected to be on the laying job as a result of the investment.

These pullets can be counted on to produce double the number of fall and winter eggs laid by average scrub hens, providing care is taken in getting eggs from vigorous stock that has egg-contest records to back up the claims of the breeder.

Keep in mind the fact that the inherited quality of heavy laying must come from pedigreed breeding, and particularly through the cock bird that is the son, grandson, etc., of a line of heavy layers.

Fifty Feeds for a Cent

By Alfred A. Jefts

SPROUTED OATS are undoubtedly good succulent feed for hens, but I find dried beet pulp for my use much to be preferred when feeding a flock of 300 layers.

For my hens I soak the beet pulp overnight just as is done when feeding dairy cows. A 5-quart measure of the beet pulp makes a half-bushel when soaked. I then mix it with sufficient dry-mash grain so that it will not be sloppy to feed. This quantity makes enough for 300 hens for the noon feed at a cost of 6 cents (for the beet pulp) or (put differently) from dried beet pulp 50 hens get enough succulence for one cent a day.

I find the beet pulp will take the place of cut clover or alfalfa and give equally good results.

In this section of the country many poultrymen are trying the dried beet pulp, and after giving it a trial they continue to use it on account of the small amount of labor connected with the feeding of it.

Dried beet pulp contains about four

times as much protein as fresh mangels, sugar beets, or turnips, and one third as much carbohydrates—starchy material.

Dried beet pulp retails from a cent to a cent and a quarter a pound in ton lots.

The Hen is No Joke

THERE are still farmers who consider the hen as a means of income a joke.

Judged from these figures made public by the Southern Railway Company, Tennessee hens are "jokers" worth cultivating.

(One shipping point (Morristown, Tennessee) consigned 325 cars of eggs in 1914, containing 130,000 cases, or 46,800,000 eggs—almost enough for half an egg apiece for one breakfast for our entire population.)

In addition to the eggs, 175 cars of live poultry and 53 cars of dressed fowls were shipped from the same point.

The total value in 1914 of the poultry products shipped from this poultry center is reckoned at over \$2,000,000.

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Growing Trees as Elevators

By Fred Telford

IT IS commonly believed that as a tree grows it elevates the lower branches and any other thing firmly attached to it. As a result, curious stories like the following circulate:

A Canadian farmer built a barn on willow posts set in the ground. The next spring happened to be wet, and he noticed that the horses had trouble in stepping up to the floor on entering. Finally it dawned upon him that the willow posts, which by this time had put out branches and leaves, were growing and elevating the whole barn.

The process continued until the floor was some nine or ten feet high. Then he put in another floor at the ground level.

At the time the story was told this second floor was four feet from the ground, and the farmer was hoping for a wet season so that the elevation might continue until he could put in a third floor.

It is impossible to take this tale seriously, but many folks believe stories with as little foundation. Sometimes a hog-tight fence is attached to green posts. In a few years the owner notices that good-sized pigs can crawl underneath it, and often he concludes the green posts have grown and elevated the whole fence.

This elevation, however, happens also with seasoned posts, and is due to another cause. Water expands when it

freezes and in the ground the expansion cannot be downward or sidewise, so it must be upward. Consequently, every time the ground freezes the posts are pushed upward a fraction of an inch. When thawing occurs, the weight of the fence is not sufficient to push them back.

Thus every freeze means a slight elevation, and in the course of three or four years the fence may no longer be hog-tight.

In the same way wheat is lifted out of the ground in the early spring when the ground freezes for several nights in succession and thaws in the daytime.

Farmers and city dwellers alike believe that a growing tree elevates its lower branches. Otherwise, they say, how is it that a three-foot cherry tree in a few years has not a branch within four feet of the ground? If elevation really occurred, however, it is difficult to see how we could ever have a low-headed tree; and that it actually does not occur is shown by careful observation spread over a number of years. The lower branches gradually die as they are shaded by the upper ones, and in the course of time drop off. This natural pruning can be seen in all its stages at the same time in any fairly dense forest. Here it is easily seen that only branches in the light continue to thrive and live.

No branch is elevated to any extent after it is a year old.

Indiana Recommends These Wheats

By M. L. Fisher

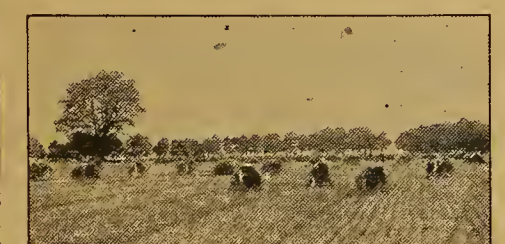
DURING the past thirty years 250 differently named varieties of wheat have been tried out in Indiana.

The trials are made by sowing the varieties in narrow strips, long enough to contain one-twentieth acre. Every fifth strip is planted to the same variety, known as the standard variety, with which the other varieties sown are compared.

Throughout all these tests the Michigan Amber has been the standard variety.

Among the many varieties which have given good results and which may be recommended for Indiana conditions are the following: Rudy, Farmer's Friend, Mealy, Winter King, Poole, Harvest King, Grains-o'-Gold, Michigan Amber, Red Wave, Reliable, Fultz, Egyptian Amber.

All of these varieties have red kernels and are of the kind favorably received by millers for the making of flour. Some are bearded, while others are smooth.



The variety-test field in Indiana

In the testing on the station farm a wide variation was found in the yielding power of the different varieties.

This is doubtless due partly to the difference in yielding power and partly to soil adaptation. For example, the Kharkof and Turkey Red, both hardy and hard Russian varieties, have not given as good results as the varieties mentioned above,



Some of the varieties used in the tests

From left to right: Michigan Amber, Egyptian Amber, Farmer's Friend, Rudy, Red Wave

but in some other sections of the State they have given excellent results. It is the practice of the station to recommend these varieties especially for rich black soils, such as the prairie soils of the western part of the State.

While all of the above-mentioned varieties are excellent for Indiana, the seed of some is not available, as they are no longer grown. Instead of dropping good varieties for the sake of those newly introduced which in one particular season give better results than the old and tried kinds, we need a few varieties which give good results through a series of years, and which can be depended upon to give returns every time.

The South in Clover

By O. A. Thomas

THE rotation of crops is a new thing in many places here in Virginia and throughout most of the South. The idea seems to be to plant corn and tobacco, or corn and cotton, trusting to commercial fertilizer and the Almighty to make a good crop and a little money.

Most of our lands stand in immediate need of improvement. The old idea has been to "turn out" the exhausted fields for a few years for Nature to improve them. We have left things too much to Nature, and have failed to recognize that our so-called worn-out land responds wonderfully to a little kindness.

The generally poor condition of the soil and the high price of hay throughout the region, suggests a rotation that will restore humus and fertility rapidly and also produce hay as one of the principal market crops. In the rotation recommended below, tobacco and cotton are left out, not because they are considered less important, but because of the desire for diversity; which, by the way, is the best method of forestalling another cotton glut.

A short tobacco crop last year helped to save the tobacco men from very low prices. I expect cowpeas and crimson clover to be of great help. Crimson

clover sown in the corn has often proved a failure because of drought, but with the 1-horse drill, which will drill the clover seed between the corn rows deep enough to resist the dry season in August, the outlook is much improved.

For a considerable portion of the South no better rotation can be suggested for the rapid improvement of the land than the following:

Plow and lime the land in the winter, using about 1,000 pounds of ground lime per acre. Plant corn at the proper season, and sow crimson clover in the corn about the 1st of August. Turn down the crimson clover about the 1st of the following May, and sow the land to cowpeas. When the cowpea hay has been harvested give the stubble one disking, which usually makes a very fine preparation for oats or wheat, and in this sow grass and clover seed for the hay crop that is to follow the grain.

Or the grain crop can be left out and the grass and clover seed sown, without the nurse crop, directly following the pea-hay crop. Such a rotation will mean the arrangement of our farms into fields of about equal size, and of a number equal to the number of years in the desired rotation.



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blackened or discolored, can be easily renewed without the expense of cleaning or removing the old surface. A coat of CAMPBELL'S GROUND COLOR, a coat of CAMPBELL'S GRADING SURFACER and a final coat of CAMPBELL'S VARNISH STAIN in any wood color, does the work. You can easily do it yourself.

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Make Feeding Easier

Do it by Clipping the Frills From the Fancy Systems

By Philip M. Marsh

BETWEEN the feeding systems prescribed for us farmers by experiment stations and the "uninspired" feeding methods of the ordinary farm, there is a great deal of difference in expense, work, and results obtained.

The experiment stations' systems generally produce far better results than ordinary methods of feeding, and cause more work and expense.

It is claimed that the better results greatly offset the higher cost—but is this always true?

It seems that in seeking the ideal for results our stations have too often neglected the question of practicability of their feeding systems, of their comparative cost and feasibility. We know that the ordinary, unscientific way does sometimes produce results and often at the minimum of cost for feed and labor. We also know that the average farmer has neither the time nor the temperament to fuss with complicated feeding systems.

The Hen Herself is a Scientist

We have to throw away many systems which are excellent theoretically, but very cumbersome and expensive for practical use.

For this reason we must seek a system based on the scientifically known necessities for the animals. This system must be simple and the ingredients cheap and obtainable.

Some of our poultry systems as recommended would have us mixing seven or eight different feeds and a different combination for each age of chick. Often several of such feeds are not obtainable.

It isn't necessary to do all the directing of growth or production; Nature sees to a good deal of it, and there is such a thing as going so far in helping Nature as to make the job complicated and expensive.

We need to feed the laying hen and the milch cow a different ration from the breeding biddy and the cow with calf, but this ration can be varied roughly with practically as good results as if we did it *à la* scientific program.

Variety is Very Essential

The growing chick or calf will get there all right if it has a variety of food, whether this food is compounded according to "Henry's Feeds and Feeding" or not.

What we can use on the general farm is general principles, not minute application of the principles.

The use of scientific feeding principles is justified only in special cases—for instance, where a man is making a life study and specialty of one thing.

Seventy hens kept in warm, open-air quarters, fed strictly in the Maine Station way, kept clean and healthy, and given the very best of care, are right now on my neighbor's farm, doing almost nothing and have been doing that for months.

Do you think they would have done terribly worse under somewhat less scrupulous care? No.

I believe in "the happy medium" between the ignorant feeder and the scientific crank. I believe in science, for it is a real stepping stone to this belief, but average farm conditions require that we clip some of the frills from the highly developed feeding systems.

This is What I Would Feed

Here is the mash I would feed to chicks after the first week or two, up to old age as layers, without change:

- 2 parts finely ground alfalfa meal, clover meal, or wheat bran.
- 1 part corn meal.
- 1/2 part bone meal.
- 1/4 part linseed meal.

[When chicks are kept confined where plenty of insects are not obtainable, skim milk or some animal food like meat meal, fish scrap, or the like should be furnished. —EDITOR.]

For breeders I would add another part of alfalfa meal, and for fattening birds, another part of corn meal, interspersed with milk, charcoal, shells, and hard grains according to judgment.

This is a mash which is simple, cheap, obtainable almost everywhere, and efficient. It has all the necessary ingredients, enough variety, and from it the changes necessary to the occasion can be made.

The growing chick will assimilate from it the necessary food for growth without having its ration arranged for its size, and the laying hen can produce plenty of eggs from it.

After we know what we need from science, let us simplify, not complicate, our feeding systems.

Don't Set Freak Eggs

DID you ever notice how much more vigorous and growthy is the plant coming from large plump seeds of corn, wheat, beans, radish, lettuce, etc.?

The same law holds good with chickens hatched from good-sized, well-shaped eggs.

Eggs that have sufficient size to furnish plenty of material to develop a vigorous, perfect embryo chick, and room for it to expand, will insure the chick's ample strength to cut and burst its shell prison.

Select not the over-sized irregular-shaped egg, but those of good size and as uniform in shape, color, and strong in shell as possible.

Why the Hens Didn't Lay

A Story in Five Parts

Part IV

Past Her Prime



"DO YOU ask why my laying is lame?"

Clucked a matronly ten-year-old dame.

"Just between me and you

I should be a pot stew, So when the time comes I'll be game."

Part V will appear next issue

DUCKS are good watchdogs for the poultry yard. No matter what time of night the thief may come, the ducks will quack.

SUDAN GRASS seems to be a good pasture crop if a farmer is willing to sow his pastures every year. It is especially promising for the dry-farming regions. At Dodge City, Kansas, with only about four and a half inches of rainfall during the summer—in fact, in a summer of almost steady drought—Sudan grass furnished over seven weeks' pasture per acre per cow. It kept green long after buffalo grass had died.

Homesick Corn

WILLIAM WINGETT of Thurston County, Nebraska, believes his home-grown seed corn is better than seed brought from a distance. Tests showed the shipped-in seed to give yields of from 46 to 76 bushels, while the home-grown seed yielded from 71 to 79 bushels to the acre.

How many of our readers have had experience on this point? And how long does it take the shipped-in seed to get used to the new conditions so as to feel at home and do its best?

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Washington's Logged-off Lands

By Joel Shomaker

Ex-President Washington Logged-off Land Association

AT THE present time, and under existing conditions, I do not know of any community where men without means can go upon logged-off lands, clear the tracts of stumps and logs, and make a living, much less pay the taxes, unless some invisible source of money supply comes to their assistance.

The logged-off land law of the State of Washington is not in effect because it is a dead letter, not suited to conditions, and has been rejected, by overwhelming majorities, when submitted to the voters of Clallam and King counties.

A law was framed by somebody and passed at the last session of the state legislature. It provided for the organization of counties or smaller divisions into districts, the issuing of bonds by such districts, and the clearing of lands for ultimate use of farmers.

But that law had so many faults that it would not stand before the scrutiny of intelligent farmers and landowners. It gave the county commissioners the right to purchase lands for \$20 an acre that might be worth less than one fourth of that amount, and at the same time gave that body power to condemn land near towns or cities worth \$100 an acre, and get it for one fifth that amount.

Wanted—a Real Statesman

I have more than 200 acres of logged-off land, with choice water frontage, right at a wharf, and having a good steamer service to Seattle and Tacoma, yet I do not know of any bank or mortgage company doing business in the State that would consider it good business to loan me or any other owner of such lands sufficient money on twenty years' time to clear and improve that land, or any portion of it, to the point where it would be a producer of cereals, grasses, or fruits.

We hope to get some system of rural credit that will enable the people living on logged-off lands in western Washington to get the use of money for clearing and improving those lands. The legislature is in session, and possibly some

THE picture page published a few issues back about clearing land by char-pitting inspired many comments. But fully as important as the methods used—of which char-pitting is but one—is the statesmanship required to finance the job.

This letter by Mr. Shomaker paints the situation so clearly that we have secured his permission to publish it.

sound thinking agriculturist may bring up a measure that will help the people.

We are not ready, and I hope never will be, for freak legislation that practically brands a man a criminal because he owns land. We are not ready now, and I hope never will be, for any laws that attempt confiscation of property rights and interests just because political agitation favors such results.

There are probably 3,000,000 acres of logged-off lands in twenty counties of

western Washington that should be converted into farms, orchards, and gardens without delay.

Of the logged lands available for cultivation we have so far cleared and partly improved only 7 per cent, the remainder lying in the condition of black stumps and burned logs left by the commercial loggers.

The State of Washington has been importing eggs and poultry, pork and beef, butter and cheese, and various other distinctly farm products at the rate of about \$30,000,000 worth every twelve months. If the lands, or even a small per cent of the best tracts, were cleared and put under proper cultivation, the State would be a shipper of such products instead of an importer.

Many devices for getting out stumps have been tested in various districts, with varying reports as to their value. Some people use stump pullers, others try the char-pit plan, while a few, having the money to spend, utilize dynamite and donkey engines.

All Methods of Clearing Are Costly

It matters little what methods are used in stump clearing, the man who owns the land must have the use of money at a low rate of interest and on long time, or he will fail. It takes money to buy clothing for the family, food for man and beast, tools, machinery, and other necessities while the stumps are in the ground and until they are out and burned, the land plowed, and crops matured.

As for methods of burning stumps, I have never seen anything yet that took them out for less than about \$5 each, acre for acre, nor have I visited any considerable area of land where it could be cleared and put under profitable cultivation for much less than \$150 an acre.

That New Crop

MANY are interested in the new forage crop—Sudan grass.

It has done wonders in some places, and men are asking, "How will it work for me?" In the drier sections of the country it is proving a blessing. It is believed it can be used with success in other parts too.

FARM AND FIRESIDE has already told some things about it. In the next issue a Texas man tells how a group of Texas men successfully sold their crop of Sudan grass seed, and why.

The "why" is the important part of the story.

Look for the next issue.

Not All Bees Are Busy

By A. F. Bonney

A COLONY of bees, commonly called a swarm, is composed of a great many worker bees, which are undeveloped females; a queen, which lays all the eggs, and is a ruler only in name, and in the summer and early fall a number of drones, which are perfect males.

There is never more than one queen in a hive. This is so near true that the exception merely proves the rule.

A foreign queen being introduced into a hive will certainly be killed by the reigning queen; and while a worker bee will not sting a queen, those in a hive

the hive so soon as they fail, and die outside, while their life is a short one at the best. A matter of forty days in the working season, though they may live from fall until spring when idle.

The drone bee is a perfect male. There may be a hundred or a thousand drones in a hive. They gather nothing, and would starve in a short time if honey were not obtainable in the hive. They mate on the wing, and their life ends at that instant.

All efforts to mate bees in confinement have failed, which renders improvement of the species problematical.

So soon as the honey flow ceases, regardless of the time of year, the drones are killed off, though there may be a few somewhere in a big yard all winter.

A curious thing about bees is that once mated the queen never again leaves the hive except to accompany a departing swarm.

Bees will not allow bees from another hive to come into the one they occupy, but baby bees and drones may and do go anywhere with impunity. Of course there are exceptions to this rule, for it has been truly remarked that "bees do nothing invariably."

One of the most curious things about the bee family is what is called parthenogenesis. If a queen fails to mate she will in time begin to lay, but the eggs will produce nothing but drone or male eggs, which will hatch into perfect males.

Moreover, if a hive becomes hopelessly queenless, one or more worker bees will begin to lay eggs. These eggs are capable of producing perfect males.

IF NOT cotton, then what? The Texas Department of Agriculture says that among the best money crops for the South, besides cotton, are peanuts, cowpeas, silage crops, and live stock.

PERFECTLY made concrete should be water-proof, but it is not often so made. A water tank may be water-proofed by an application of cement and water mixed to the consistency of thick paint and put on with a brush. Two coats are better than one. Another water-proofing preparation is made by mixing five pounds of alum, two gallons of water, and a pound of lye. Several coats should be applied with a brush.



The three types—the worker, the queen, and the drone. This article tells the value of each

will smother and worry an intruder so as to make victory for their own queen almost certain.

It has been noted when two queens are fighting that if both have simultaneous opportunity to sting, neither will—a provision of nature to perpetuate the bee family.

There may be 50,000 or more bees in a hive at the height of the season, and as few as 200 or 300 at the beginning, especially following a hard winter. These are in very truth the workers, for they feed the babies, clean the hive, carry water (and a vast amount is used during the breeding season), bring in pollen, or bee bread, gather nectar (which is put into the cells and then fanned by the workers to drive off all the moisture, save about 20 per cent).

The bees also attend the queen most assiduously, for Her Ladyship when laying eggs has no time even to eat or wash her own royal face.

The bees also bring in a resinous substance known as propolis, with which they varnish the inside of the hive and stop all cracks, making their home water-proof.

Being perfect socialists, the bees leave

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The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature and particulars as to reduced railway rates to Superintendent Immigration, Ottawa, Canada, or to

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Make the Ailing Ones Healthy and Expel the
Worms — GILBERT HESS { Dr. of Veterinary Science
Dr. of Medicine

I urge you to see to it right now that your work horses are put in prime condition for spring and summer work, so that when the sun shines they will be rid of their old coat, full of stamina and ready for business. And don't overlook the spring pig crop—the mortgage lifters. Start them off free from disease—free from worms. Be sure, also, that your milk cows are thoroughly conditioned for the long, heavy milking season, and that those with calf are vigorous and fit. Remember, your stock have been idle and on dry feed for the last few months—they're pretty liable to be out of fix—rough in the hair, constipated, troubled with dropsical swellings and stocky legs, but the most common ailment of all, especially among hogs, is worms—worms.

Dr. Hess Stock Tonic

A Splendid Conditioner A Sure Worm Expeller

It will tone up your stock, enrich their blood and help to put them in shape for spring. Being both a doctor of medicine and a veterinary scientist, I formulated Dr. Hess Stock Tonic especially as a conditioner. It contains tonics for toning up the general system, laxatives for regulating the bowels, diuretics to remove dropsical swellings and vermifuges that expel the worms. By all means feed Dr. Hess Stock Tonic to your hogs now—it will positively rid them of worms. Feed it to your cows also.

So sure am I that Dr. Hess Stock Tonic will put your stock in a thriving condition, make the ailing ones healthy and expel the worms, that I have told my dealer in your town to supply you with enough for your stock, and if it doesn't do as I claim—if it doesn't pay you and pay you well—return the empty packages and get your money back.

Sold only by reliable dealers whom you know—I save you peddler's salary and wagon and team expenses, as these prices show: 25-lb. pail \$1.60; 100-lb. sack \$5.00; smaller packages as low as 50c. Except in Canada, the Far West and the South.

If not at your dealer's, write direct to

DR. HESS & CLARK Ashland, Ohio

Another Way to Save Expense

By John Y. Beaty

HAVE you ever been bothered with mice in the hay? Then you will appreciate the value of the method of H. L. Hughes of Sonoma County, California. Mr. Hughes runs all of his hay through a feed cutter and blows it into the mow. Mice do not work in chopped hay enough to do any damage.

More than this, the chopped hay can be stored in much less space than either loose or baled hay. Then, too, the loss is less when the hay is fed. This is especially true when the hay is coarse. The waste in hay that is a little over-mature before it is cut can be largely prevented by chopping. The stock will eat the chopped hay up clean when they would waste almost half of the coarse stalks if the hay were fed whole.

The feed chopper is not expensive, and it doesn't cost much more to put the hay up in this way. The extra cost is more than offset by the saving in the hay that would not be eaten if it were fed whole.

H. R. Timm, a dairyman of California, also practices chopping his hay before storing.

Alfalfa is chopped for the winter feed of dairy cows. With nearly 300 cows to feed, Mr. Timm has to adopt every plan that will save feeding cost.

PEARLS are selling at half price in India because of the war.

BERMUDA grass flourishes in sunshine, but will not stand very much shade. Don't use it in a woodland pasture.

Blood Tells Here

THE picture shows two Missouri mules bred by a reader of FARM AND FIRESIDE. The mules are of the same age, and were sired by the same jack. The one to the left is out of a draft mare, while the other is from a small pony mare.

Up to the age of two years these mules were of about the same size and were matched as a team. When the picture was taken a few months ago the mules were four years old, and you can see how much larger the one to the left is.

That mule weighs 980 pounds, while the other weighs but 740.

Mr. Tooloose, the owner of these mules, says the large one is nearly twice



They are mules, of course, but all mules are not alike. This article points to the difference in this case

as strong as the other, and there is no telling what a fine mule he may become. "But the other one," he says, "is just a little bit of a scrub and never will be anything else."

The smaller one is also quick-tempered and inclined to be ugly. A few days before the picture was taken he kicked the front door off an automobile that tried to pass too near him.

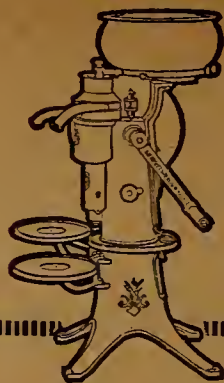
Metal Hog Houses

ARE the new metal hog houses practical? In answer to this question the Iowa Station announces the outcome of some interesting tests.

A metal house is cheaper than a well-built wooden one, and is also lighter, which makes the house more easily portable. Tests conducted last March showed a much greater range of temperature in the metal houses than in those of wood. The difference was fifteen degrees greater in the metal houses. In all cases the metal houses were colder shortly after midnight, and warmer about noon, than were the wooden ones.

Hogs kept in the wooden houses made a total gain of 55 pounds as against 46 pounds' gain in the same length of time in metal houses.

The size of hog houses used were 6x8 and 5x7 feet floor space, and the shape was the common A type. The Iowa report gives the impression that the metal houses are less desirable than the wood.



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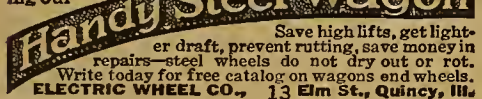
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Write for Actual Figures
Send your name and address and get actual figures that show the possibilities for making money from your calves.
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Her Sheep Money

This Woman Does What Any Woman Can Do

DEAR FIRESIDE EDITOR: Why don't more women raise sheep? In two years my flock has netted me 341 per cent. My only loss by death has been two lambs. The yearlings I now have gave 14 pounds of wool during last May.

They are good grade Lincolns and Shropshires. I bought nine of each, and raised one sheep which was a cross.

Fifteen sheep cost about as much as nine cows. The cows would yield a larger income than the sheep, but would require more care.

My flock needs 12 acres of pasture in summer. The winter feed is stover.

I cannot understand why more farm women do not become shepherdesses—unless it's because they are alarmed by the failures men make and forget that a woman can of course do much better. What would be the use of being women at all if we couldn't outdo the men?

Here are the figures and transactions shown by my ledger:

DEBIT	
Sept. 10, 1912—To 10 sheep.....	\$40.00
Dec. 9, 1912—To 8 sheep.....	42.25
To expense of shearing, 1913 and 1914	3.90
Total	\$86.15

CREDIT	
June 4, 1913—By 132 lb wool @ 18c	\$23.76
Oct. 4, 1913—By 6 lambs, 630 lb @ 6c	37.80
Nov. 29, 1913—By 9 lambs, 650 lb @ 6 1/2c	42.25
By 3 sheep	14.90
May 20, 1914—By 173 lb wool @ 22c	38.06
Aug. 15, 1914—By 5 lambs, 500 lb @ 7c	35.00
Sept. 19, 1914—By 10 lambs, 820 lb @ 7c	57.40
Dec. 19, 1914—By 5 lambs, 370 lb @ 6 1/4c	23.12
By 1 sheep	3.90
By 5 yearlings	24.00
Jan. 1, 1915—By sheep on hand (15)	67.25
Total	\$367.44
Expenses	86.15
Profits	\$281.29

Ignore men's comparative failures, dear Fireside farm women. Take courage, for this is a woman's experience, and you can equal or excel it.
ALICE SALWAY, Indiana.

The above letter was received with many others shortly after we printed the experiences of several people with small flocks of sheep. This particular letter presented so many possibilities that we decided to print it in order that all of the Farm and Fireside family could enjoy it.—Editor.

Rain—What It May Mean

THERE is such a thing as too much rain to be comfortable. The average rainfall in Cherra Punji, India, is about 500 inches a year, and has been as high as 905 inches. That would cover a 6-story building if none of the water ran off. But even in this country remarkable rainfalls have occurred. In the single month of January, 1909, over 71 inches of rain fell at Helen Mine, California. Rainfalls of over 10 inches in one day have also occurred occasionally in the United States. An inch of rainfall is equivalent to 113 tons of water per acre, or nearly 1,000 barrels.

The influence of rainfall on sheep-raising is remarkable. In Australia, where the annual rainfall is from 8 to 10 inches, they can graze about 9 sheep per square mile. With 13 inches of rainfall the same area will support 96 sheep; and with 20 inches of rainfall, 640 sheep.

These figures are furnished by J. W. Smith, an Ohio weather observer, who says also that for every increase of rainfall during July in Ohio amounting to one inch, the increase in the value of corn alone amounts to over \$2,000,000. Three days of hot, dry, windy weather will evaporate an inch of water, so it's important to protect the soil moisture with a good dust mulch before hot or drying weather sets in.

Where the Feed Went

THE U. S. D. A. took twenty cows and tried the effect of ticks on their milk yield. They found that cows with a light "dose" of ticks gave about four fifths as much milk as those with none, and cows heavily infested gave less than half as much. It took just as much work to care for the tick-infested cows, and the ticks took over half of their feed.

When the South quits feeding ticks and begins to feed cattle, let the corn belt look out!

The Supremacy of the De Laval Cream Separator

37 Years of Leadership

Supreme in Skimming Efficiency
Over 35 years of experience and thousands of tests and contests the world over have demonstrated the De Laval to be the only thoroughly clean skimming cream separator, under all the varying actual use conditions, favorable as well as unfavorable.

Supreme in Improvements
This has been the greatest factor in De Laval success. Not a year goes by but what some improvement is made in De Laval machines. Some of the best engineers in America and Europe are constantly experimenting and testing new devices and methods, and those which stand the test are adopted.

Supreme in Construction
This applies to every part of the machine—to the bowl, the driving mechanism, the frame and the tinware. The De Laval patent protected Split-Wing Tubular Shaft Feeding Device makes possible greater capacity, cleaner skimming and a heavier cream than can be secured with any other machine.

Supreme in Service
With its worldwide organization and with agents and representatives in almost every locality where cows are milked, no stone is left unturned by the De Laval Company to insure that every De Laval user shall get the very best and the greatest possible service from his machine.

Supreme in Durability
The De Laval is substantially built. The driving mechanism is perfectly oiled and the bowl runs at slow speed, all of which are conducive to durability and the long life of the machine. While the life of other cream separators averages from three to five years, a De Laval will last from fifteen to twenty years.

Supreme in Satisfaction
De Laval users are satisfied users, not only when the machine is new, but during the many years of its use.

Supreme in Sales
Because they are supreme in efficiency, construction, durability, improvements, service and satisfaction, more De Laval Cream Separators are sold every year than all other makes combined.

Order your De Laval now and let it begin saving cream for you right away. Remember, that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

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It makes them fresh and full of life and vigor to clip them in the spring before the work begins. When the heavy winter coat that holds the wet sweat and dirt is removed they get more good from their feed, are healthier and work better. They are more easily kept clean and their improved appearance greatly adds to their selling price. It also pays to clip the flanks and udders of your cows—you get clean milk, free from impurities that can't be strained out.

Clip with the Famous Stewart Bearing Machine

It turns easier, clips faster and closer and stays sharp longer than any other. Gears are cut from solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade. Get one from your dealer or send \$2 and we will ship C. O. D. for balance. Money and transportation costs back if not satisfied.

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\$2 Wheat

At this writing, wheat is selling for \$1.35 and \$2 is predicted. Corn and other Food Crops will advance in sympathy. You want to get your share of the advance, and you want it in 1915. To do this, you must get a better and a quicker growth. Don't expect your crops to grow quickly and heavily and bear firm, heavy grain, large mealy potatoes and sound vegetables, without giving them a **quickly available** supply of Phosphorus, Potash and Nitrogen. There's a lot of fertility in your soil but it's locked up—only slowly absorbed by plants—and the actual feeding period (60 days for most crops) is not long enough to allow abundant absorption. Cultivation, a supply of humus, and liming are important, but even they are not sufficient. Drill in some

A A Brand Fertilizers

—and get bigger crops this year—at a good profit on the investment. Quickly available but non-leaching. A different brand for every need. Absolutely reliable. Used by the hundreds of thousands of tons in the South and East in growing cereals and other staple crops.

Try-A-Bag Cover one acre for \$1.50 to \$3.00. See for yourself the value of available fertility. Make every acre worth two. Get the best results from your cultivations and rotations. We'll gladly assist you in selecting the right brand. Get our agency proposition and carload order inducement. Write for our valuable books, "Plant Food" and "The Problem of Fertility in the Middle West." Both are free. We've some commonsense ideas to offer you. Write to nearest branch today.



The American Agricultural Chemical Co.
Cleveland Cincinnati Detroit Buffalo Baltimore New York

A Natural Apple Man

By E. A. Lagergren

I HAVE been interested in the various discussions of what the future of the apple market is going to be. While it does appear to some that there will be too many apples in a few years, have we any reliable way of forecasting what the future will be?

Ever since I was a boy I have heard this overproduction talk, yet I cannot recall a single instance where any great calamity has resulted from too much of any one staple, especially if it is good to eat.

During my boyhood days back in Kansas I made a solemn vow that when I became a man I was going to raise all the fruit I could eat and have a surplus for those who do not ordinarily get it. It seems like the older I get the more fruit I want. I believe it true with most of us.

What if we do raise 125,000 carloads of apples in 1919? Counting 500 boxes per car, that gives us 62½ million. This is a whole lot less than a box apiece, not counting what will be shipped abroad.

I shall not go into the marketing details, but I hope to see the time come when everyone can have apples to eat the same as potatoes. It hasn't been so long since lots of us had to do without things that are common now.

I well remember during Cleveland's

administration that wheat sold for less than 50 cents per bushel and corn for 12 cents. Farmers said there was an overproduction and they would have to raise something else. I'll venture to say that there is twice as much wheat raised now as there was then. Wheat sells for twice as much now.

Of course people can do without fruit while bread is a necessity, so how are we to judge the future years?

I have even heard it said that the chicken business was being overdone.

I do not expect to get a thousand or more dollars per acre from my trees.

I do not think we should expect it either.

The fellow at the other end has always paid too much for his fruit.

The poor are obliged to do without fruit most of the year, and that isn't right.

I simply expect a fair return for my labor.

I like orcharding, and when a man plants trees he plants in hope.

I expect to raise better fruit than the other fellow, and I believe that well-colored, fine-flavored apples will always sell. There may be lots of them, but we shall learn how to distribute them. We'll never get anywhere if we keep forever changing from one thing to another.

How to Get Grapes

PROFIT from the grape requires health and vigor of roots, cane, and leaves; plenty of plant food to grow the fruit and new wood for next year's crop.

Most important of all for the current year's fruit is correct pruning.

The pruner must learn just how much fruit the particular vine to be pruned can be expected to mature and still develop strong canes and fruit buds for next year's crop.

The beginner should keep the following things in mind:

1. Old wood never bears fruit again.
2. That the wood which grows from the pruned vine will bear fruit this year and furnish the bearing shoots for next year's crop.
3. If no pruning is done, the vine will

The trouble, however, is less with varieties than with the ways of growing them and handling the fruit. Too many plants in the matted rows result in many and medium-sized berries.

In starting a bed put the varieties that are free runner makers 2 or 3 feet apart in the rows, and if necessary remove all the later runners. Plants grown on something like a hill system give large and fine fruit.

The choice of varieties is often a local question, as some sorts do well in some sections and fail in others. A number of varieties, however, seem to give satisfaction over a wide range of territory, and can be more safely recommended in a general way.

Among them we have Early Ozark, an early, good-sized, good-colored, good-flavored berry that should find favor in any market. Senator Dunlap is another. Beder Wood is good. We have found Gandy, or Gandy's Prize, a profitable very late berry, but rather of light color and worthless for canning. Where Brandywine succeeds it is almost ideal, except the large calyx and large core. It is particularly adapted for starting from potted plants in August, and will give very large, high-colored and high-flavored berries.



Do it in the early spring

bear a dozen clusters of grapes where there should be but one.

4. By pruning off nine tenths of the wood and leaving from 30 to 50 buds to the vine, the yield of high quality fruit will be increased tenfold.

Have a Grape Arbor

ON CROWDED home grounds where the space is lacking for a regular row of grapevines grown on the common grape trellis, a grape arbor for six or more vines to supply the needs of the family is often a very convenient thing.

It can be made quite attractive, more by the leafy covering and the display of the fruit, of course, than by the arbor itself.

The latter may be a cheap and simple affair, consisting of two rows of good, straight and, if possible, painted posts set 6 or 8 feet apart and connected by latticework or even wires on the sides (outside) and overhead. In constructing such an arbor you may consult your own taste and the lumber you have on hand, also your pocketbook.

A grapevine can be trained on any support at will or fancy, and will bear fruit in abundance. Select the varieties best suited for your locality. Concord and Niagara are reliable in many sections.

In hot summer days a nice grape arbor, if provided with table, seats, or hammock, makes a cozy retreat for the tired man or woman, excellent for resting and reading.

By all means have a grape arbor.

Better Strawberries

By T. Greiner

A REALLY good basket of strawberries is the exception rather than the rule in our markets.

There is room for improvement. Always has been.

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For the benefit of our big family there has been established in our editorial office, an Advertisers' Information Bureau.

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Why Maples Die Young

By Charles A. Scott
State Forester of Kansas

A READER in southwestern Kansas reports that a number of his maple trees have died. The trees are about twenty years old and take two or three years to die after the first indication of disease. The bark splits open first and then the trees split through. The leaves fall early in the autumn of the year, when the trouble begins, and do not leaf out again on those branches.

Maple trees sometimes lose their leaves early in a dry season on account of the leaves drying up and falling off. Another trouble that is common as a maple-tree pest is a form of scale which injures the vitality of the trees. The scale can be combated by spraying the trees in the late winter with a lime-and-sulphur or kerosene-emulsion spray.

The pigeon horn-tail borer is another pest that works in the wood and contributes to the death of the tree, as does also the rustic borer which works in the cambium layer and sapwood. There is no way to combat the borers after they once enter a tree.

The soft maple is not a hardy tree in Kansas and some of the corn-belt States, and is subject to injury by sun scald. This injury is the result of alternate thawing and freezing of the wood just inside the bark during the early spring. After suffering from sun scald the tree is less resistant to the attacks of fungi and insects.

Fully 75 per cent of the maple trees in Kansas that are from twenty to forty years in age are either dead or in a dying condition to-day. An examination of the barks, twigs, and leaves of these trees will help to determine just what the cause of death is. The best remedy is to replace these trees with hardier longer-lived trees of more desirable species.

TRAMP the snow down about the orchard tree. The trampled snow presses down the grass and weeds and prevents this litter from harboring mice.

Rutabagas for the Table

By T. Greiner

THERE are corn-belt farmers who like the taste of rutabagas, but do not succeed in raising them with a good sweet flavor.

It is a very easy thing to raise good brittle flat turnips, such as Purple Top Strap Leaf, in any kind of good soil, from sand to strong clay loam, soil that has a fair supply of decaying organic matter, and the later we grow these turnips, usually, the sweeter and brittler they are.

We often grow good ones, both for the table and for stock, by scattering a little seed broadcast in the cornfield at the last cultivation in July.

To grow nice brittle Swede turnips or rutabagas, however, is not quite so easy. They require a longer season of growth, and are more particular as to the character of the soil.

The soil should have a considerable proportion of sand in its make-up, and plenty of organic matter. Lime should be applied if there is the least tendency to sourness, showing deficiency in lime. We always give the preference to a piece of ground on which no turnips, cabbages, cauliflowers, or even radishes, rape, mustard, etc., have been grown for several years.

This for heading off any possible dangers from attacks of clubroot, root maggots, and perhaps other fungous and insect enemies.

I have grown a nice crop of Laing's Improved Purple Top, an early rutabaga variety, on an old strawberry patch, a gravelly loam plowed after the strawberry picking season, and grown from seed sown after middle of July. The rows were made 2 feet apart, and the plants thinned to from 8 to 12 inches apart in the rows. In this case all the cultivation was given with wheel hoe and hand hoe.

For larger-scale operations I would put the rows a little wider apart, and use the horse cultivator. If the crop is to be grown from seed sown in open ground, the seed may be sown along in June, up to early July; but many prefer to grow the plants in seed beds (in open ground) and transplant to the field late in June or during July, the proper distances apart.

The best and brittlest growth of all turnips and rutabagas is made in the cooler and moister weather conditions after the heated season. These vegetables do not like excessive heat and cannot stand much dry weather.

At times they are attacked and badly injured by green lice, the same that is liable to attack cabbages. Applications of superphosphate or mixed fertilizers often show marked benefits.

POTASH

is food for thought as well as for crops this year.

When shipments were interrupted by the war, it was estimated that there was enough Potash on hand in the United States to provide two and three per cent Potash in mixed fertilizers for this spring's trade. Some manufacturers had more than enough for these percentages.

Since then minor sources of Potash have been fully utilized, and additional shipments from the usual source have been and are still being received.

The supply is below normal, but this need not prevent farmers securing some Potash in their fertilizers, nor should it lead farmers to decide not to use fertilizers.

There is no reason to return to the out-of-date goods without Potash, although some authorities may try to "wish" them on us.

We have not used enough Potash in the past. The largest annual import of Potash was only one-seventieth of the Potash taken from the soil by our 1914 corn crop and only one-fifteenth of the Potash lost every year in drainage water.

Spring crops use from two to ten times as much Potash as Phosphoric Acid. Get as much Potash in the fertilizer as possible. A few firms are offering to furnish from four to ten per cent.

There is no substitute for Potash. It may be harder to get just now, but **POTASH PAYS.**

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The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Nine

THE Woodruff District had become a seething caldron wherein enmities, prejudices, and ignorance boiled and splattered. It was all because Jim Irwin, once a farm hand, became suddenly and accidentally elevated to the position of school teacher. Jim insisted that culture and efficiency are the same thing, and he set about making his pupils into good farmers. The county superintendent, his old sweetheart, Jennie Woodruff, tried him on a charge of incompetency, but was obliged to acquit him upon the showing his pupils made in an examination in the textbooks he was supposed to neglect. A professor from the state agricultural college, respectful to Jim's new methods, invited him to lecture at Farmers' Week, but he remained nevertheless a prophet without honor at home, where his only champions were his old employer, Colonel Woodruff, and his pupils.

XXIII

The Birth of an Idea

MARCH came in like neither a lion nor a lamb, but was scarcely a week old before the wild ducks had begun to score the sky above Bronson's Slew, looking for open water and badly harvested cornfields. Wild geese, too, honked from on high as if in wonder that these great prairies on which their forefathers had been wont fearlessly to alight had been changed into a disgusting expanse of farms. If geese are favored with lives as long as story bids us believe, some of these venerable honkers must have seen every vernal and autumnal phase of the transformation from boundless prairie to boundless corn land. I sometimes seem to hear in the bewildered trumpeting of wild geese a cry of surprise and protest at the ruin of their former paradise. Colonel Woodruff's hired man, Pete, had no such foolish notions, however. He stopped Newton Bronson and Raymond Simms as they tramped across the Colonel's pasture, gun in hand, trying to make themselves believe that the shooting was good.

"This ain't no country to hunt in," said he. "Did either of you fellows ever have any real duck-shooting?"

"The mountings," said Raymond, "air poor places for ducks."

"Not big enough water," suggested Pete. "Some wood ducks, I s'ppose?"

"Along the creeks and rivers, yes, seh," said Raymond; "and sometimes a flock of wild geese would git lost, and some bewildered, and a man would shoot one or two, from the tops of the ridges, but nothing to depend on."

"I've never been nowhere," said Newton, "except once to Minnesota—and—and that wasn't in the shooting season."

A year ago Newton would have boasted of having "bummed" his way to Faribault. His hesitant speech was a proof of the embarrassment his new respectability sometimes inflicted upon him.

"I used to shoot ducks for the market at Spirit Lake," said Pete. "I know Fred Gilbert just as well as I know you. If I'd a kep' on shooting I could have made my millions as champion wing shot as easy as he has. He didn't have nothing on me when we was both shooting for a livin'. But that's all over now. You've got to go so fur now to git decent shooting where the farmers won't drive you off that it costs nine dollars to send a post card home."

"I think we'll have fine shooting on the slew in a few days," said Newton.

"Humph!" scoffed Pete. "I give you my word, if I hadn't promised the Colonel I'd stay with him another year I'd take a side-door Pullman for the Sand Hills of Nebraska or the Devil's Lake country to-morrow—if I had a gun."

"If it wasn't for a passel of things that keep me hyah," said Raymond, "I'd like to go too."

"The Colonel," said Pete, "needs me. He needs me in the election to-morrow. What's the matter of your ol' man, Newt? What for does he vote for that Bonner and throw down an old neighbor?"

"I can't do anything with him!" exclaimed Newton irritably. "He's all tangled up with Peterson and Bonner."

"Well," said Pete, "if he'd just stay at home it would help some. If he votes for Bonner it'll be just about a stand-off."

"He never misses a vote!" said Newton despairingly.

"Can't you cripple him some way?" asked Pete jocularly. "Darned funny when a boy o' your age can't control his father's vote! So long!"

"I wish I could vote!" grumbled Newton. "I wish you could! We know a lot more about the school and Jim Irwin bein' a good teacher than Dad does—and we can't vote. Why can't folks vote when they are interested in an election and know about the issues? It's tyranny that you and I can't vote."

"I reckon," said Raymond, "that the old-time people that fixed it thataway knowed best."

"Rats!" sneered Newton the iconoclast. "Why, Calista knows more about the election of school director than Dad knows."

"That don't seem reasonable," protested Raymond. "She's prejudiced, I reckon, in favor of Mr. Jim Irwin."

"Well, Dad's prejudiced ag'inst him—er, no he hain't either. He likes Jim. He's just prejudiced against giving up his old notions. No, he hain't neither—I guess he's only prejudiced against seeming to give

up some old notions he seemed to have once. And the kids in school would be prejudiced right, anyhow!"

"Paw says he'll be on hand prompt," said Raymond. "But he had to be p'swaded right much. Paw's proud—and he cain't read."

"Sometimes I think the more people read the less sense they've got," said Newton. "I wish I could tie Dad up! I wish I could get snake-bit and make him go for the doctor!"

The boys crossed the ridge to the wooded valley in which nestled the Simms cabin. They found Mrs. Simms greatly exercised in her mind because young McGehee had been found playing with some blue vitriol used by Raymond in his school work on the treatment of seed potatoes for scab.

"His hands was all blue with it," said she. "Do you reckon, Mr. Newton, that it'll pizen him?"

"Did he swallow any of it?" asked Newton.

"Nah!" said McGehee scornfully.

Newton reassured Mrs. Simms and went away pensive. He was in rebellion against the strange ways grown men have of discharging their duties as citizens—a rather remarkable thing, and perhaps a proof that Jim Irwin's methods had already accomplished much in preparing Newton and Raymond for

raisin bait ready for the pocket gophers in the lower meadow. They'll be throwing up their mounds by the first of April."

"Not them," said Mr. Bronson, somewhat mollified: "not before May. Where'd you get the raisin idee?"

"We learned it in school," answered Newton. "Jim had us study a bulletin on the control and eradication of pocket gophers. You use raisins with strychnine in 'em—and it tells how."

"Some fool notion, I s'pose," said Mr. Bronson, rising. "Bnt go ahead if you're careful about haudlin' the strychnine."

Newton spent the time from 12:30 to 2:30 in watching the clock, and twenty minutes to three found him seated in the woodshed with a penknife in his hand, a small vial of strychnine crystals on a stand before him, a saucer of raisins at his right hand, and one exactly like it, partially filled with gopher bait—by which is meant raisins under the skin of each of which a minute crystal of strychnine had been inserted on the point of the knife. Newton was apparently happy, and was whistling the "Glowworm." It was a lovely scene if one can forget the gopher's point of view.

At 3:30 Newton went into the house and lay down on the horse-hair sofa, saying to his mother that he felt kind o' funny and thought he'd lie down a while. At 3:45 he heard his father's voice in the kitchen and knew that his sire was preparing to start for the scene of the battle between Colonel Woodruff and Con Bonner, on the result of which hinged the future of Jim Irwin and the Woodruff School.

A groan came from Newton's lips—a gruesome groan as of the painful death of a person very sensitive to physical suffering. But his father's voice from the kitchen door betrayed no agitation. He was scolding the horses as they stood tied to the hitching post, in tones which showed no knowledge of his son's distressful moans.

"What's matter?"

It was Newton's little sister who asked the question, her facial expression evincing appreciation of Newton's efforts in the line of groans, somewhat touched with awe. Even though regarded as a pure matter of make-believe, such sounds were terrible.

"Oh, Sister, Sister," howled Newton, "run and tell 'em that Brother's dying!"

Fanny disappeared in a manner which expressed her balanced feelings—she felt that her brother was making believe, but she believed, for all that, that something awful was the matter. So she went rather slowly to the kitchen door, and casually remarked that Newton was dying on the sofa in the sitting-room.

"You little fraud!" said her father.

"Why, Fanny!" said her mother, and ran into the sitting-room, whence in a moment, with a cry which was almost a scream, she summoned her husband, who responded at the top of his speed.

Newton was groaning and in convulsions. Horrible grimaces contorted his face, his jaws were set, his arms and legs drawn up, and his muscles tense.

"What's the matter!" His father's voice was stern as well as full of anxiety. "What's the matter, boy?"

"Oh!" cried Newton. "Oh! Oh! Oh!"

"Newt, Newt," cried his mother, "where are you in pain? Tell Mother, Newt!"

"Oh," groaned Newt, relaxing, "I feel so awful!"

"What you ben eating?" interrogated his father.

"Nothing," replied Newton.

"I saw you eatin' dinner," said his father.

Again Newton was convulsed by strong spasms, and again his groans filled the hearts of his parents with terror.

"That's all I've eaten," said he when his spasm had passed, "except a few raisins. I was putting strychnine in 'em . . ."

"Oh, heavens!" cried his mother. "He's poisoned! Drive for the doctor, Ezra! Drive!"

Mr. Bronson forgot all about the election—forgot everything save antidotes and speed. He leaped toward the door. As he passed out he shouted, "Give him an emetic!" He tore the hitching straps from the post, jumped into the buggy, and headed for the road. Skillfully avoiding an overturn as he rounded into the highway, he gave the spirited horses their heads and fled toward town, carefully computing the speed the horses could make and still be able to return. Mile after mile he covered, passing teams, keeping ahead of automobiles, and advertising panic. Just at the town limits he met the doctor in Sheriff Dilly's automobile, the sheriff himself at the steering wheel. Mr. Bronson signaled them to stop, ignoring the fact that they were making similar signs to him.

"We're just starting for your place," said the doctor. "Your wife got me on the phone."

"Thank God!" replied Bronson. "Don't fool any time away on me. Drive!"

"Get in here, Ez," said the sheriff. "Doc knows how to drive, and I'll come on with your team. They need a slow drive to cool 'em off."

"Why didn't you phone me?" asked the doctor.

"Never thought of it," replied Bronson. "I hain't had the phone only a few years. Drive faster!"

"I want to get there, or I would," answered the doctor. "Don't worry. From what your wife told me over the phone I don't believe the boy's eaten any more strychnine than I have—and probably not as much."

"He was alive, then?" [CONTINUED ON PAGE 26]



His muscles were tight, his eyes fairly bulged from their sockets as he screamed, "Oh! Oh! Oh!"

citizenship. He had shown them the fact that voting really has some relation to life. At present, however, the new wine in the old bottles was causing Newton to forget his filial duty and his respect for his father. He wished he could lock him in the barn so he couldn't go to the school election. He wished he could get sick, or poisoned with blue vitriol, or something, so his father would be obliged to go for a doctor. He wished . . . well, why couldn't he get sick? Mrs. Simms was about to send for the doctor for Buddy when he had explained away the apparent necessity. People got dreadfully scared about poison. . . . Newton mended his pace and looked happier. He looked very much as he had the day he adjusted the needle-pointed muzzle on his dog's nose. He looked, in fact, more like a person filled with deviltry than one yearning for the right to vote.

"I'll fix him!" said he to himself.

XXIV

Newton the Strategist

"WHAT time's the election, Ez?" asked Mrs. Bronson at breakfast.

"I'm goin' at four o'clock," said Ezra. "And I don't want to hear any more from anyone"—looking at Newton—"about the election. It's none of the business of the women an' boys."

Newton took this reproof in an unexpectedly submissive spirit. In fact, he exhibited his very best side to the family that morning, like one going on a long journey, or about to be married off, or engaged in some deep, dark plot.

"I s'pose you're off trampin' the slews at the sight of a flock of ducks four miles off as usual?" stated Mr. Bronson challengingly, suspicious of mischief.

"I thought," said Newton, "that I'd get a lot of

The Farmers' Lobby

Taking Our Own Medicine

By Judson C. Welliver

A YEAR ago it was costing, roughly speaking, 4 cents to get a bushel of wheat from New York to Liverpool, England.

Now it is costing, roughly, 16 cents. The war did it, of course. What are we to do about it? A year ago it was costing about 30 cents to ship 100 pounds of cotton that same trip.

At the time of this writing it is costing about 80 cents.

That is, one-half cent per pound has been added to the cost of getting cotton abroad, while cotton is worth less to the producer than in many years.

Twelve cents a bushel has been lopped off the value of wheat to the farmer in order that the steamship man may get a higher toll for hauling it.

More than this, the condition is likely to be worse with the increase in the demand for American products and the extension of the war area. Any naval success by the German allies of such extent as to give them a chance to contest for control of the seas would send rates still very much higher by reason of increasing the danger of shipping in the bottoms of a belligerent power.

For instance, at the end of January news dispatches told of German submarines in the Irish sea intercepting, seizing, and sinking cargo ships. It was reported that the Germans were prepared to draw a cordon of such commerce destroyers about the British Islands and shut up the kingdom. That meant, if it could be accomplished, that British and French ships would be unable to continue in business; the mere threat of a serious effort to accomplish it caused insurance rates and cargo charges to go up once more.

At a time, in short, when we need ships more than ever before the ships are not to be had, and the charges for them are higher than ever.

All the warring world begs for America to feed and otherwise help it, and America wants to do it.

But how shall we without enough ships?

There's the shipping question, as it gets right down close to our national business situation; and it gets rather closer to the farmer than to almost anybody else, because the farmer is the chap whose products—grain, flour, cotton, meats—the foreigner most urgently needs just now.

It's curious how utterly uncivilized civilization acts when war starts.

This Certainly Affects Our Interests

As soon as war starts, the whole fabric that civilization has so painstakingly built up in peace crumbles to pieces. The very strength that it had acquired in peace becomes its weakness.

A nation at war assumes the right to destroy the commerce of her enemy. So a nation in command of the sea announces that certain things shipped to the enemy will be regarded as contraband.

First, arms and ammunition and related necessities of actual warfare.

Second, articles which pretty obviously are to be used in making arms and munitions; as, for instance, copper, used in making shells, and rubber used for shoeing automobiles.

Then there is a long list of things that are denounced as "conditional contraband," as foodstuffs, or perhaps cotton; articles that may be intended for use by the army, or perhaps by the civil population only. If captured, these articles will be tried in the prize court of the power capturing them; and if it is decided that they were intended for military use they will be confiscated.

Why does a country like the United States submit to such impositions on its commerce? Why do we permit England to seize the copper which we are selling to Germany?

Because when we're at war we play the game under the same rules ourselves.

The law of contraband has been hundreds of years in development; but our own Civil War saw it written into more definite form than ever before, and the Government at Washington wrote it that way. Cotton was the great wealth of the South. All the world wanted it. So long as the South could send cotton to Europe and get gold for it, and with that gold buy guns and ammunition, so long the South could keep on fighting.

So the North declared cotton contraband, and declared a blockade of the ports of the South. As fast as they could be built, naval vessels were sent to Southern ports to make that blockade

In the Spirit of Fair Play

MR. WELLIVER, in talking about R. F. D. carriers, states that "a man who does three hours' easy work gets \$1,200, same as the man who does nine hours' heavy work."

Does Mr. Welliver know that to get the \$1,200 the R. F. D. carrier must have a route at least 25 miles in length, and the shorter routes are paid less in proportion to length? Does Mr. Welliver know that to cover 25-mile routes, day in and day out, requires that the R. F. D. carrier must have at least two horses, and equipment of wagon, sleigh, robes, blankets, stable, and fixtures, an expense of hay, grain, bedding, etc., and shoeing repairs?

If Mr. Welliver were an R. F. D. carrier, how much of his \$1,200 would he have for his pay for the year's work, after deducting all expenses, repairs, losses, and depreciation?

I am not an R. F. D. carrier; I am writing simply in the spirit of fair play for all, and with the desire that our mail service be improved, not hampered.—W. A. JAMES, Massachusetts.

effective; and after that, a blockade-running ship trying to haul cotton away to Europe, or to bring in supplies from Europe, got short shrift: she was taken before a prize court, condemned and confiscated, cargo and all.

Sauce for our Civil War goose is now being served as sauce for our European war gander.

The rules we made then are applied against us by the European allies in control of the sea.

They would be applied in the same way by Germany and Austria if they chanced to dominate the sea.

If we protest, they say, "Don't you recollect what you did to us under this same rule, back in 1864?" We remember, and we have to take the medicine.

A Rule That is Working Both Ways

The ability to blockade and starve out the Confederacy enabled the North to win the Civil War.

Now the ability to blockade and starve out Germany and Austria is largely relied upon by England and her allies to win the present war.

It's a poor rule that doesn't work both ways.

When the present war opened, Germany had a great merchant marine on the oceans, hauling goods back and forth, for us among the rest of the nations. In a few days those German ships had all scuttled to the nearest neutral ports. They didn't dare go out lest British cruisers capture them.

For many generations this whole barbarous system of treating private property on the sea in an entirely different way from private property on land had been getting on the nerves of civilized people. So, during the period when The Hague peace congresses were making people think of the possibility of attaining some measure of international civilization, an effort was initiated to reorganize the system somewhat. A conference of powers was held at London, and a scheme drawn up to which the assent of the nations was asked.

Under the old rules a ship bearing a belligerent's flag could not be sold to a neutral after war began; such a ship, if seized after war had begun, would be confiscated regardless of the neutral flag. Likewise, a ship transferred from a belligerent's to a neutral flag before war had been started was regarded with suspicion, on the ground that the transfer might have been made in anticipation of possible war, to avoid its internment or capture.

"Sold in Good Faith"

The London convention agreed that a ship transferred sixty days or more before war began should be regarded as having been sold in good faith, and this presumption should hold unless affirmative evidence should be produced in the prize court to prove that the transfer was in fact not in good faith, or was made in order to avoid the consequences of the war. It was further agreed that transfers made within a short time after the opening of the war should be regarded as legitimate, provided the new owner could prove that the transfer was not made for the purpose of avoiding the consequences of the war.

The London convention was not ratified by most of the maritime powers, but on the outbreak of the present war some announced they would be bound by its general principles. This brings us down to present conditions.

German ships are interned in ports all over the world. The world's trade needs

them, especially the trade of the United States, for at best there are none too many ships to handle the traffic; and when a huge tonnage is tied up in this way, just at the moment when we want to sell an unusually large volume of goods, there's no way to get the goods moved.

In July, 1913, ships aggregating 5,709,000 tons cleared from American for foreign ports. That was about normal. In July, 1914,—the last month before the war,—the cleared tonnage was 5,600,000. Then, with the warring powers threatening to seize enemy vessels and all contraband, and with German ships interned, the tonnage fell off rapidly and steadily, until in December, 1914, the tonnage cleared was only 3,300,000.

We Lost

That is, a loss of 42 per cent in tonnage at a time when we needed more of it than ever.

No wonder ocean freights went skyrocketing. It was reported that the rate on grain per bushel, New York to Rotterdam, was three fifths of a cent on July 1 last; on January 19, 1915, it had gone to 6 cents; that is, the increase was 900 per cent.

Cotton, New York to Rotterdam, had gone up from \$1.25 to \$10 the bale. And so on.

From Savannah the rate of cotton went up from \$1.10 a bale before the war to \$5.25 a bale on shipments to Liverpool, \$11.25 to Havre, and \$15 to Bremen. It is not difficult to observe that the British were using their control of the sea and of shipping to benefit themselves; they were making their rate only about half as high as that for their ally, France, and one third as high as for their enemy, Germany; yet cotton was not held to be contraband.

The shortage of ships to carry the tonnage is accounted for partly by the internment of enemy vessels, and in part by the fact that France and Great Britain have been forced to take a vast number of merchant vessels for use as transports, tenders, supply vessels, and the like.

Under these circumstances the Administration proposed to buy some ships of its own to carry our shipments abroad. Legislation was introduced providing that it could invest up to \$30,000,000 in the stock of a corporation which might buy ships to be operated under the American flag.

The Government was to own not less than fifty-one per cent of this corporation's stock, and a shipping board of five men, two being the Secretary of the Treasury and the Secretary of Commerce, the other three appointed by the President, were to manage the government interest.

Center of Storms

This legislation promptly became the storm-center of all congressional interest.

One group of people opposed it because it meant a huge experiment in government ownership, which they regarded as bad on general principles. They said the Government would have to operate the ships, at times, at a loss and foot the bills; and the Administration admitted it expected this, but thought the general benefits to commerce would justify it.

The Administration said it expected to sell these ships, later, to private owners; it was only buying them to meet the exigency of the war.

To this the opposition replied that it was a confession that the ships were to be bought in order to avoid the consequences of the war; and under the Declaration of London this would make them, if they were enemy ships, liable to seizure.

"But we don't intend to buy enemy ships," retorted the administration spokesmen when backed into this corner. "Then you can't get any ships; there are none for sale," replied the opposition.

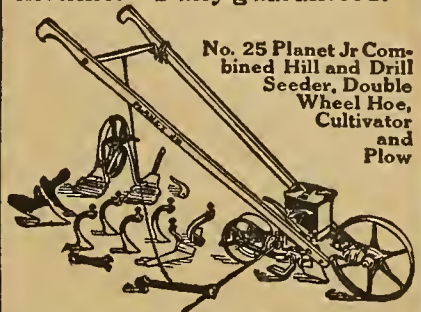
And there the argument stood. "Every time you buy a ship you buy a quarrel," declared Senator Root.

"No; we'll make sure there is no quarrel before we buy," retorted the Administration.

And so the matter stands unsettled. About the only thing right sure seems to be that rates are outrageous, that they are expected to be much worse in the near future, and that their excesses are skimming the cream off the profits of the great foreign trade that the war is bringing to this country.

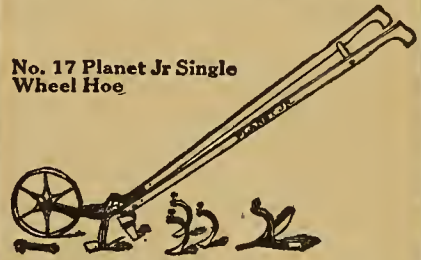
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Is There a Phonograph in Your School?

Reasons Why There Should Be

By Manthei Howe

THE U. S. Rural Organization Service has put its seal of approval on "the movies" as an educational factor in rural life. It now remains for the country school to adopt the modern educative twin of the movies—the phonograph.

But some canny farmer remarks: "Yes, yes, that's another one of those flumdidde fads. It's getting so nowadays that boys and girls are being taught everything but reading and 'riting and 'rithmetic. Now you come along and want to get a phonograph into the country school. What do we need music for auyhow? What's the good of it?"

Why have music? Answer it yourself. Why do you have music in church? Why do you put musical numbers on your grange program? Why is even a wind-broken old organ a source of pleasure in a household? Why are singing schools such fun? You know the answer. Bless you, music is no fad! It has grown up with man and is as old as man. From the time primitive man beat his ceremonial music on the tom-tom and gathered the tribes to the call of the drum, we have had music growing up alongside and expressive of the stages in the civilization of a people. Music is a natural mode of a racial self-expression, and you may depend on it that our individual opinion is not of much value when it comes down to anything so fundamental as taking music out of the schools. We need it there, and we shall always have music of some kind there. Whether it is good, bad, or indifferent depends on the natural and trained ability of the pupils and the teacher.

What is Music Worth?

"How much will the phonograph cost?" pursues the hard-headed man who prides himself on always knowing just where he stands.

Well, wait until we get through dealing with the educative value of the talking machine in the school. Not that the instrument will be lower in price by that time, but in dealing with school problems it is good to get some other perspective than just the dollar-and-cents point of view.

Of course, first of all there is the cultural side of music. Music is in all truth expressive of a nation's civilization, and if we do not bestir ourselves we are going to find our young people familiar with only one crude kind of melody—the primitive, strongly accented ragtime. Ragtime is all right in its place, but it should not be the sole extent of the child's musical training, no more than the Alger and Henty books should constitute his literary ideal. So, placing good music before the child and helping him to a musical appreciation should be one of the earnest aims of the school.

Do you remember the tuning fork that teacher used to strike on the desk and then all the Johnnies and Marys sounded do, or do, mi sol, the smaller ones carefully imitating teacher? Now that is all right if the teacher happens to have an ear for music, or if she has true pitch. If she has not, then the young children are imitating tones and voice production that are all wrong. Can you see much chance for musical appreciation to develop in a school that is trained by a tone-deaf teacher? Can the blind lead the blind?

Records the Children Will Like

Any fair-minded critic will acknowledge that we cannot expect the teacher to embody all the talents. She cannot be a mathematician, an artist, and a songstress, nor is it practicable to have a special music teacher in the rural school. So why not solve the problem by hiring a well-qualified teacher who does know the bed-rock principles of reading, 'riting, and 'rithmetic, and then install a phonograph that can teach musical appreciation and voice culture?

There are records adapted to all grades for teaching songs by imitation. The kindergarten children and the wee tots of the lower grades are taught to sing such delightful child songs as the following, which are only a small part of the list: Rain Song, by Smith; Mother Goose Song, by Elliot; Little Bird, by Neidlinger; Kittie and the Bow Wow, by Neidlinger.

Those who know how much children enjoy the Riley-Gaynor songs will be glad of this way of presenting this music to little children, in a faultless manner. The Jap Doll, The Gingerbread Mau, Robin Redbreast, The Bobolink, The Oriole, and The Blacksmith



Infant's First Hood

Directions will be sent on receipt of four cents and a self-addressed stamped envelope. Address Evaline Holbrook, Farm and Fireside, Springfield, Ohio

are always favorites. For advanced grades and the high school all the famous voices, opera selections, arias, and oratorios that have delighted music lovers in Europe and America are available. Not until you go into the matter thoroughly and look over the catalogues can you have any appreciation of the vast strides a school can make in music when it is helped by a phonograph and a wise selection of records.

Take the talking machine which by this time we hope you have decided to put in the school in your district and slip on it any of these records: The Day is Done, by Balfe; Ave Maria, by Bach-Gounod; The Rosary, by Nevin; Quartet from Rigoletto; Good Night Beloved, by Pinsuti; Annie Laurie; Believe Me if All Those Endearing Young Charms; Bonnie Doon; Drink to Me Only With Thine Eyes, and Lo, Here the Gentle Lark. Listening carefully to these melodies will do more to develop intelligent musical taste and culture than a dozen average school teachers can accomplish even though they are doing their best.

Learning to Speak in Public

Talking machines assist discipline. That is an established fact. Stroug military marches, marked rhythms, make for order. A noisy, restless morning that bids fair to spoil the school day may be transformed by a few minutes of calisthenics to the accompaniment of the phonograph. All physical drills are better for being done in time to music. Counting one, two, three, four while you stretch out your arm and bring it back with a slap to the chest is about as much fun as exercise and diet to reduce the weight. The same exercise in time to a stirring march becomes fun and the best kind of play. It is none the less effective discipline. Folk dances and games to the accompaniment of music will make recess just what its name implies. The phonograph is being extensively used in this way in the city schools, and it ought to have an even broader field in the rural schools.

Not every teacher is a skilled story teller, but you can depend on the talking machine for story-telling too, if you care to. In our training class at college the girls were always delighted when we heard that Miss Georgene Faulkner was to tell stories. We used to settle down contentedly and forget school troubles in listening to Miss Faulkner's inimitable stories. When they were finished we used to sigh and wish that all "kiddies" might have a chance to hear those tales. Story-telling was not a talking-machine accomplishment at that time. Now we have eight or more records of stories told by Miss Faulkner. Among these you will find the fascinating old friend Goldilocks and the Three Bears, Three Billy Goats Gruff, The Little Red Hen, and Mother Goose Jingles.

Can't you remember the Friday afternoons or the fête days when we spoke pieces? There can be no doubt of the value of self-expression for the child. We realize that he needs all the training that we can give him in the correct method of speaking in public. There is a real value in being able to get up and

express your thoughts in public. Your memories of grange or farmer-institute meetings will recall many times when, goodness knows, you had a message that you wanted to give, but you were everlastingly certain that if you once got to your feet the memory of what you had intended to say would follow your heart to the bottom of your boots. If you did manage to stammer something it was not what you intended to say, and as far as the sense of it was concerned you were lazy. The right kind of school training will correct much of that abnormal stage fright. But such school training is worthless without some first-class example of public speaking and orations.

Most children hear two classes of public speakers—the Fourth of July orators and the minister. Neither can serve as a fine example to imitate. The teacher is usually no more satisfactory. Half the time the older boys believe that these orations and pieces are only a snare of the devil designed by the teacher to focus attention on the length of a fellow's legs and wrists. Let those boys listen to a fine interpretation of Lincoln's speech at Gettysburg. This and Webster's reply to Hayne as given by Harry Humphrey will awake in the boy an interest and a respect for dignified public speaking.

As examples of good recitations let them listen to Frank Burbeck give Abou Ben Adhem, Barbara Frietchie, or for stirring emotional speaking, The Charge of the Light Brigade recited by Rose Coghlan.

Every modern youngster—it makes no difference if he lives on the farm or in the city—demands that if the teacher makes a statement she has to "show him" before he will accept it. When you tell the child that the English language is beautiful in its simplicity, that the English of Shakespeare is wonderful in its choice of words and shades of meaning, the modern youngster will cock his eye skeptically and wonder how you make that out. Shakespeare as read by the teacher and the class does not impress him as remarkable English.

A Program for Social-Center Night

Let him take as his goal the selection from Hamlet by Ben Greet, or Antony's Address Over the Body of Caesar by Frank Burbeck. Perhaps he would choose Shylock's Rebuke from the Merchant of Venice. Any of these fine specimens of the English language will very satisfactorily show the doubting Thomas that Anglo-Saxon is wonderful and virile. That public speaking demands brains, patience, and training will be borne in upon the boys and girls, and they will be encouraged to make an effort to read as they should read.

Then there is the grange meeting and the social-center night at the school. Can you think of anything that would please an audience more than a series of songs like these?

The Lass With the Delicate Air.
Ben Bolt.
The Old Oaken Bucket.
Good-By Sweet Day.
Scots Wha Hae Wi' Wallace Bled!
Kathleen Mavourneen.
Loch Lomond.
When Johnny Comes Marching Home.
Old Kentucky Home.
Home Sweet Home.
The Lost Chord.
Old Black Joe.
The Rosary.
The Watch on the Rhine.
And Lang Syne.
Sweet and Low.
Blue Bells of Scotland.
The Last Rose of Summer.
Just Before the Battle, Mother.
Old Folks at Home.

How Much It Will Cost

There are two models of the talking machine put out especially for school use. They are light enough so that they can be moved from the schoolroom to the playground. One comes at \$60 without the records; the other model sells for \$75. Not so much in dollars and cents after all, not when you compare it with the cost of the implements that the up-to-date farmer has on his farm. It is a lopsided logic that preaches improved implements to work the farm and any old equipment for the rural school. The music-loving country child should be given cultural opportunity, especially when this can be done at the moderate cost of a phonograph.

"The man that bath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils."

Safety First With This Year's Chicks—Continued from Page 9

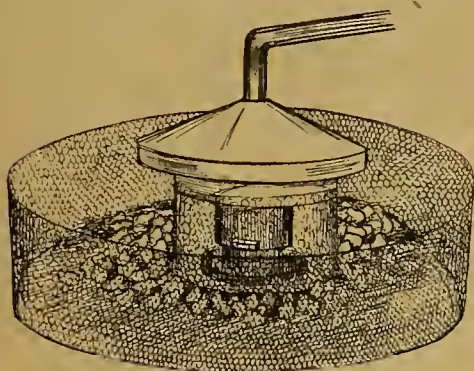
and on the road to recovery. A stone jug filled with hot water will accomplish the same results. Or a hot bath followed by the above recommended treatment is even more efficient.

Lice and Mites

When you see a sitting hen uneasy and constantly picking at her feathers, examine her about the head, neck, and wings for lice. You will most likely find them. Nearly everyone has his own favorite lice and mite remedy. A little of a mixture of powdered sulphur and lard well rubbed in on the hen's head, under the wings, and around the vent is good; and these ingredients are usually on hand.

Always use clean nests for every hen, and sprinkle insect powder in the hen's feathers before you set her, also mix some through the nesting material.

A cheap effective lice powder can be made by mixing three parts of gasoline and one part of crude carbolic acid (90 per cent strength), and gradually stirring into this mixture enough plaster of



When cold they "draw up" to the stove just like folks

Paris to take up all the moisture. Most of the commercial lice powders are also good.

To powder a hen, hold her by the legs upside down and work the insect powder well into every part of her plumage. For lice on young chicks the sulphur-vaseline ointment is good, also the powder above described and most of the standard lice powders. A great help in controlling the lice menace is to build your coops and houses of material that can easily be whitewashed and give no

A Trap's a Trap

BOTH men agree on that. We refer to the two men whose letters we have just been reading. We expect to print their letters next issue.

Both men say it takes time to trap-nest your hens.

But they don't agree on all points. That is the reason we are printing both letters. You will be as inter-

ested as we have been in noting on what they agree and on what they disagree.

They are both every-day, practical poultrymen, interested in making money from their birds, and so they are asking for their own benefit, as you no doubt are,

HOW MANY EGGS SHOULD A HEN LAY?

hiding place for these pests. Brushing or painting the roosts with kerosene or stock dips is also a good plan every time you clean out the hen house.

Incubator and Brooder Mistakes

An incubator is an excellent thing to have on hand if only to hatch out the eggs neglected by sitters that leave the nests and will not return. Such things are constantly occurring where many chicks are hatched by hens. An incubator will save the loss of deserted eggs, but do not be discouraged if the eggs fail to hatch on the twenty-first day. Keep the incubator running till the eggs have had a total period of incubation of twenty-three or twenty-four days.

The unjustified criticism of artificial incubation by persons who have either used poor machines or failed to run them properly should not carry much weight. To get as good results with incubators and brooders as with hens you have to know as much as the hen and give the machine the benefit of your brain.

The main thing with brooders is to so plan the chickens' quarters that they cannot get out of reach of the heat, nor yet should they be given any chance to overheat themselves. Inch-mesh wire netting arranged in a large circle around the brooder will keep the chicks from huddling in cold corners.

Brooding Systems Are Legion

There is no end to hovers, brooders, and brooding systems, and to describe a quarter of them would require a book.

They all can be classified according to capacity as:

First, brooders intended for one or two hen-hatched clutches, and from that up to 100 to 200 chicks. These are usually heated with a lamp.

Second, those that will take care of 200 to 1,000 or more chicks, heated by coal, gasoline, or oil stoves.

Third, those heated by hot-water pipes which may extend through a long brooder house and have an unlimited chick capacity.

Many of these different brooding arrangements have been much improved of late. A painstaking poultryman can now find just about anything he wants in the way of brooders and incubators; and, what is more to the point, can get results from their use if he is willing to do his part intelligently.

Wholesale Chick-Brooding

A big gain in labor-saving in brooding chicks is now getting much favorable attention by means of a simple brooder-stove system that does not enclose the chicks in any hover or compartment. The stove has a hood that deflects the heat downward and outward in every direction.

The chicks simply gather around the stove when they want to sleep or rest, as near as comfort dictates. The temperature near the stove is sufficiently high so that there is no tendency for the chicks to crowd or pile up. When too warm they simply move farther back. This plan of brooding allows unobstructed ventilation, and is simplicity itself since 1,000 to 1,500 chicks or even more can be kept in a suitable room, say 16 feet square for 1,200 to 1,500 chicks,

until they are feathered. With this plan even less labor is necessary than is required in taking care of one or two hover brooders holding 100 to 200 chicks apiece.

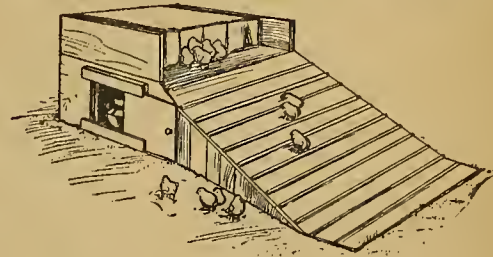
The experience is given in our January 30th issue of one of our contributors who is in position to speak authoritatively. His experience on this subject is worth careful reading.

Brooding Indoors or Out

Of course, more fuel is required with this plan of stove-brooding than where the heat is confined in a brooder or hover of the enclosed type. But the gain in labor-saving and better ventilation more than makes up for the additional fuel for poultrymen doing a business which makes heavy demands on their time.

My experience strongly favors brooding chicks in an enclosed building or covered shed until after all the cold storms of spring are past rather than running out on the ground.

A roomy indoors run with tight floors, kept covered with a generous carpet of



It's up-stairs to bed in this home-made brooder

clean dry litter, such as sawdust, shavings, or cut straw, keeps the chicks dry, safe, busy, comfortable, and away from infectious diseases that lurk in the soil.

With rat-proof floors and walls, wire-screened windows kept open for abundant sun and ventilation, cats, dogs, weasels, hawks, and crows are out of the game. Green feed and animal food can be supplied with much less effort than it takes to make constant war on chicken enemies.

Sick People Made Comfortable—By Hilda Richmond

DURING the happy getting-well days every patient has time in a hospital to absorb much instruction without effort, and the lessons she learns ought to bear fruit all the rest of her life.

I blush with shame to think common sense did not teach me long before many of the lessons I had to wait to acquire at a sanitarium, but when I see amateur nurses nowadays making the same mistakes that I once made I feel that I was not alone in my ignorance.

Giving medicines was the first lesson I assimilated. The quiet nurse with the dose appeared at the right moment and without a word it went down. There was no talking about medicine time at all. The patient simply opened her mouth and the dose disappeared.

I once tried to persuade a mother that she was wasting her child's strength by coaxing the peevish little one to take her medicine instead of calmly forcing it down, but a look of scorn was all I received for my pains. The sufferer was burning with fever and gasping with pain, but there sat the mother kissing and caressing her and saying, "Darling, if you won't take this medicine you can't get well." Anyone who has witnessed a

similar scene can imagine the condition of the child at the end of the struggle.

Next in order came the knowledge that hospitals depend upon simple remedies even more than homes do. This was quite a shock to me, as I had imagined that they resorted to drugs for everything.

Heat is used in almost every trouble, and there are dozens of hot-water bottles always in service. I learned that I had been ignoring two of the greatest agencies for relief in the world by not using hot water and dry heat.

A little sponge bath for a tired patient, a full bath for a fever-sufferer, and dozens of local baths will give relief and save the dosing some amateur nurses think necessary, and hot applications will often induce sleep. To be sure, there are many cases when nothing but drugs will quiet the patient, but for all common cases tucking the body up warm in bed with plenty of hot blankets and hot-water bottles for the "cold spots" will answer nicely.

I never allow a visitor to sit where the patient has to strain her eyes to see her. This eye-strain is one of the most annoying things that can happen in a

sickroom. I make sure there is no "crack" along the edge of the window to let in light, and I pin the curtains to the window and get rid of that long streak of light which so attracts and hurts a patient's eyes.

Regularity has a large place in my sickroom system. Baths, rests, medicines, nourishment, run like clockwork, and the result is a satisfied patient. Well people can wait with passable patience if the meal is fifteen minutes late, but a peevish sick person is apt to regard a late meal as nothing short of a calamity. A bath delayed an hour or two means nothing to a hearty person, but to a peevish invalid wanting a nap immediately after the bath the delay is tiresome in the extreme.

Sometimes I am tempted to believe that the most important lesson I learned was that sick people like to do things for themselves occasionally. Of course the patient must show a desire to do the little tasks before the privilege is granted, and of course he must not be allowed to overexert himself, but an hour alone with a letter or something of the kind will do a sick person a world of good.

To have everything done for one is a

burden in sickness, particularly when the well-meaning nurse continually says: "Isn't there something I can do for you? I wish I could do something to make you more comfortable." I was so happy to be allowed to worry the peeling off an orange and put my own stamps on my letters and cut my own meat at the hospital that then and there I resolved to allow every sick person in my home ever after a measure of liberty.

I even go away and allow the patient a little solitude. I used to think that would show neglect; but, on the contrary, it shows common sense. Placing a little handbell within reach of the invalid, I stay invisible an hour or two, taking an occasional peep when the patient cannot see me.

I found out how to make the most of makeshifts in a home, how to use small blankets instead of big ones, how to use chairs to prop up sick people, how to use an old-fashioned rocking-chair in getting a patient from one room to another, and how to make a bed without wrinkles. All these and many other useful bits of information come back to me as I am called upon to care for more or less serious diseases in my home.

Mail-Box Publicity—By C. R. Weidle

IHAVE just finished stenciling the name of my neighbor's farm upon his mail box. His farm being situated so as to afford a fine view over Lake Erie, my neighbor has named his farm "Lakeview Farm."

On my own mail box I have the name "Valley Farm," as our farm is situated in a valley with the land gently sloping from north and south.

The farm name is stenciled on the lid of the mail box, and the name of owner on the front of the box.

I have two sets of brass stencils and use 1½-inch letters for the farm name, and 1-inch letters for the owner's name. The brass stencils are interchangeable and lock into each other. Any name wanted can be put together.

The two complete sets of stencils, in-

cluding figures, periods and \$ signs, cost me about \$1.75. They come handy for marking signboards, crates, etc.

I make my own letter paint, using boiled linseed oil and lampblack, making the paint so thick that it will not attempt to run out of the can if upset.

Unless the paint is very thick, there will be trouble in the paint running and blurring the letters on the metal mail box.

Few farmers realize how interesting it would seem to the traveling public, especially strangers, if each farmer had an appropriate name for his farm printed on his mail box, or other conspicuous place, with his own name underneath.

Every farmer can find a fitting name for his farm, centering it upon some important feature or event.

The name of farm may also be printed upon letterheads and farm stationery.

The farm name on bushel crates and other packages often seems more appropriate than the owner's name.

I am making a signboard to be attached to the back of my mail-box post with a piece of iron 5/16x1¼ inches. The signboard is 14x20 inches, with the corners taken off, and is being painted a steel color, same as the galvanized mail box.

The board will be held in position a little above the top of mail-box post. About an inch black border made with black paint will be painted around the outer edge of the board and also across the center of the board.

At the top of the upper half section of the board "For Sale" will be printed. At

the top of the lower half section, and just below the black stripe running through the center of board, "Wanted" will be printed.

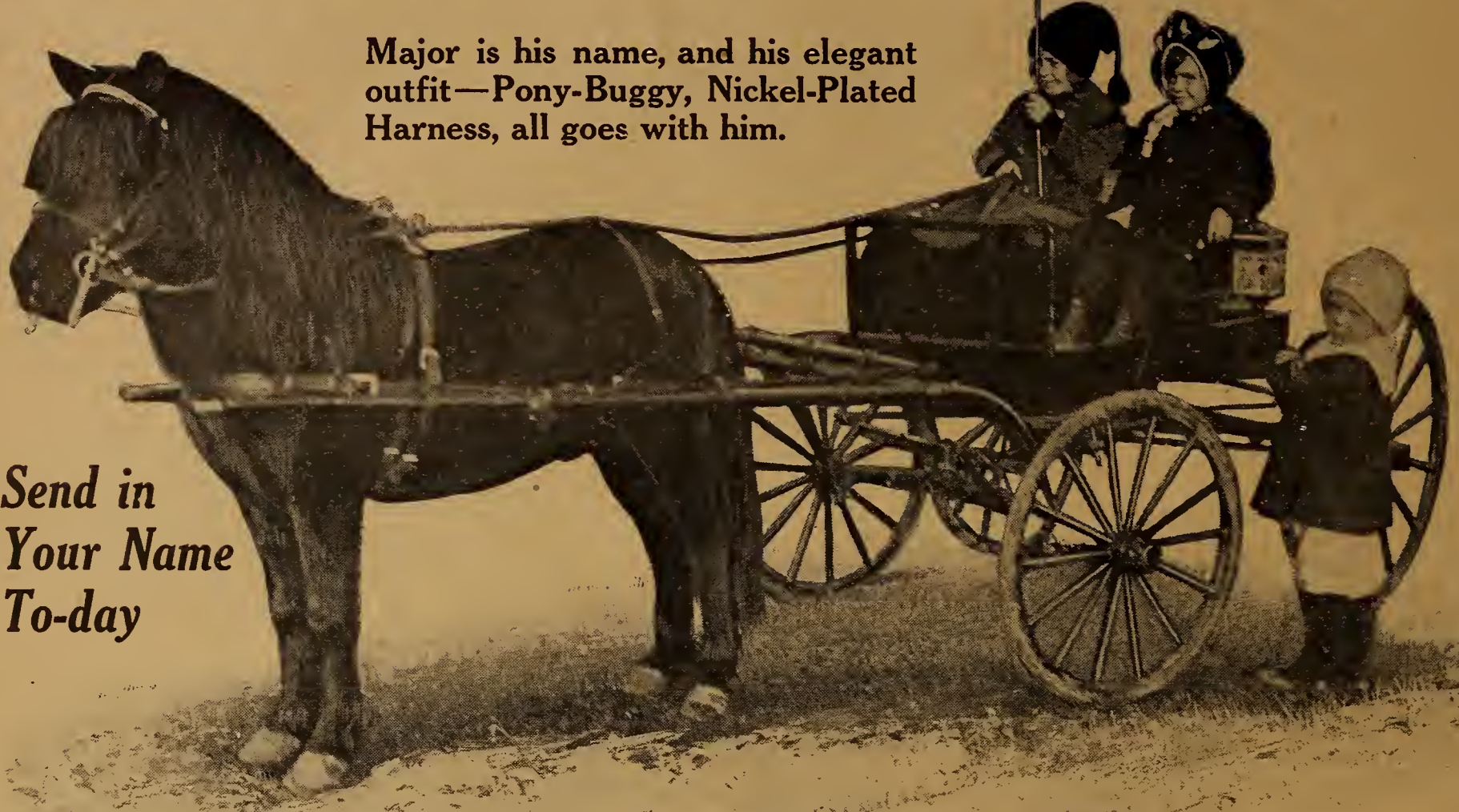
Anything for sale or wanted on the farm can be written or stenciled in the proper space with such material as can be easily erased. This notice will show plainly on the steel-colored paint.

THE house centipede is the subject for Farmers' Bulletin 627. This creature lives on bugs and insects, travels at great speed, and sometimes darts directly at people, but will not bite except in self-defense. Ammonia will relieve the wound. To speed this unwelcome guest sprinkle pyrethrum powder near water pipes and moist places, where it breeds. Kill full-grown centipedes with a broom.

Do You Want This Pony?

Major is his name, and his elegant outfit—Pony-Buggy, Nickel-Plated Harness, all goes with him.

Send in
Your Name
To-day



Major Will Be Given to Some Lucky Boy or Girl

FARM AND FIRESIDE'S Annual Spring Pony Offer is now open to all our boy and girl readers. Don't you want to win "Major," the beautiful Shetland pony shown in the picture above? Then here is the chance of a lifetime. The Pony Man of FARM AND FIRESIDE is going to give "Major" and his handsome buggy and nickel-plated harness to some boy or girl. Wouldn't you just love to be that lucky boy or girl? You can if you try hard enough. What fun it would be to go driving every day this summer. How you will enjoy going out for a gallop every morning, taking all your boy and girl friends for a drive! Just think how delightful it would be to

have "Major" to take you to school, or to neighboring farms or the village. The thing for you to do right away is to send your name and address in to the Pony Man, so that he can tell you how to become a member of the Pony Club and a sure prize-winner. Read the names of the boys and girls who have won FARM AND FIRESIDE ponies. Anyone will tell you that the Pony Man can afford to give away ponies to deserving boys and girls in order to get more people in your neighborhood acquainted with FARM AND FIRESIDE, the National Farm Paper. This paper has a reputation for fair and honest dealing that is almost forty years old.

Here Are the Names of a Few Winners of Our Prize Ponies

The Pony Man Has Given Away More Than 100 Shetland Pony Outfits to Boys and Girls

- BONNY—won by Leonard Foreman, Osceola Mills, Pa. DAISY—won by John Kielen, Madison, Minn. TRIXIE—won by Irma Musante, New London, Conn. SPOT—won by Tom Clark Pennington, London, Ky.



- HUSTLER—won by Gladys Stone, Duquesne, Pa. BILLY—won by Herman Morton, Kernersville, N. C. TEDDY—won by Viva McNutt, Vandergrift, Pa.
 GINGER—won by Hannah Swain, Huntington, W. Va. DICK—won by Daryl Porterfield, Emlenton, Pa. FUZZY—won by Allen Webber, New Carlisle, Ohio
 LITTLE JOE—won by John Korp, Farrel, Pa. BEAUTY—won by Wilbur Corey, Auburn, N. Y. WUZZY—won by Marguerite Lawson, Hopkinsville, Ky.
 DANDY—won by Delmont Whalen, Burgettstown, Pa. JACK—won by Virginia Jamison, Iola, Kansas PETE—won by Lena Purchell, Halcottsville, N. Y.

Read How to Join the Pony Club and Be a Sure Winner

PRIZE FOR YOU SURE

You are sure to win a handsome prize, if you become a member of the FARM AND FIRESIDE Pony Club, and you will not have to invest a single cent of your own money. FARM AND FIRESIDE is one of the oldest and best farm papers. You are absolutely safe in accepting the promise of such a big, well-established paper. Besides "Major" and his complete outfit, 500 elegant Grand Prizes and thousands of dollars in cash will be distributed to the lucky club members. You will be surprised at how easy it is to win one of the FARM AND FIRESIDE ponies. Hurry up.

Send in Your Name To-day

HOW TO WIN MAJOR!

No child owns a handsomer and more desirable pony and outfit than "Major" and his elegant buggy and harness. You will have every reason to feel mighty proud if you win him. We have sent ponies to boys and girls in almost every state in the Union, and will deliver "Major" and his outfit to your very door, all charges prepaid, if you win him. You should write the Pony Man at once. Simply write your name and address on any piece of paper and send it to the Pony Man, FARM AND FIRESIDE, Springfield, Ohio, or fill out this coupon and send it along. The Pony Man will be glad to send you a Membership Certificate, together with a picture of "Major" and the other prizes, and everything necessary to start right in and become a pony-winner. Send your name now. Don't wait. Just as soon as you send in your name and address, the Pony Man will tell you all about it and send you a big list of other lucky boys and girls who have won ponies. All you have to do is to send in your name and address. Remember this will not cost you a penny to join and you will not be under obligation to do a single thing.

Write Your Name and Address and Send This Coupon To-day

Mail This Pony Club Coupon To-day

The Pony Man,
Farm and Fireside, Springfield, Ohio.

Please send me, by return mail Membership Certificate in your Pony Club. I wish to learn how to win "Major" and want you to save a place for me in the club. I will try to help FARM AND FIRESIDE all I can and be a good member of the club.

Name _____
 Town _____
 R. F. D. _____
 State _____

Patterns for the Early Spring Sewing

Practical School Clothes and Comfortable Underwear



No. 2737 No. 2552 No. 2735
Practical New Clothes for the Small Boy



No. 2590 No. 2734 No. 2531
Attractive Simple Designs for the Small Girl

PATTERNS shown on this page may be obtained from either of the following pattern depots: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City, or Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

In taking measurements for children's patterns, pass the tape around the fullest part of the chest well up under the arms.

These patterns are cut according to the very latest methods. They are simple and easy to use, and will be found satisfactory in every way.



No. 2687

No. 2737—Boy's Suit with Short Russian Coat

2 to 8 years. Material for 6-year size, three and three-fourths yards of twenty-seven-inch, or two and one-fourth of forty-five-inch, with one-fourth of contrasting. The price of this pattern is ten cents

No. 2552—Child's Coat in Two Styles
6 months to 8 years. Material required to make this coat for a child of 4 years, two and one-fourth yards of 36-inch material. The price of this pattern is ten cents

No. 2735—Boy's Blouse Suit with Straight Trousers

4 to 8 years. Material for blouse in 6-year size, one and three-eighths yards of thirty-six-inch, or four and one-eighth of thirty-four-inch material. Pattern, ten cents

No. 2687—Nightgown with Gathered Elbow Sleeves

32, 36, 40, and 44 bust. Material for 36-inch bust, nine and one-fourth yards of twenty-six-inch, or four and one-eighth of thirty-six-inch material. Cotton crepe is used considerably for simple every-day gowns, as it launders so well. This pattern is ten cents



No. 2689—Princess Petticoat Perforated for Short Combination

32 to 46 bust. Material required for 36-inch bust: for combination, two and one-fourth yards of thirty-six-inch material; for petticoat, three and one-half yards of thirty-six-inch material. The price of this pattern is ten cents



No. 1642

No. 2590—Long-Waisted Dress: Double-Flounce Skirt

4 to 12 years. Material for 8 years, one and one-half yards of forty-two-inch material, with one yard of forty-two-inch plain material, and seven-eighths yard lining. The price of this pattern is ten cents

No. 2734—Girl's Dress with Large-Armhole Jumper

6 to 12 years. Material for 8 years, three and three-fourths yards of twenty-seven-inch, or two and one-half yards of forty-two-inch, and one and one-fourth of thirty-six-inch for guimpe. This pattern is ten cents

No. 2531—Belted Coat with Sailor Collar

2 to 12 years. Material for 8 years, two and three-eighths yards of thirty-six-inch, with one-half yard of contrasting material for trimming. The price of this pattern is ten cents

No. 1642—French Chemise with Plaits at Back

32 to 42 bust. Material for 36-inch bust, five yards of twenty-two-inch material, or two and one-half yards of thirty-six-inch material. The price of this pattern is ten cents



No. 2569—Fitted Open Drawers: Knickerbocker Style

22 to 36 waist. The price of this pattern is ten cents



No. 2552



No. 2737



No. 2735



No. 2689



No. 2687



No. 2590



No. 2734



No. 2531



No. 1642

No. 2691—Closed Drawers with Envelope Lap

22 to 36 waist. Drawers may be made in an hour, of nainsook, long cloth, or crepe de Chine. The price of this pattern is ten cents

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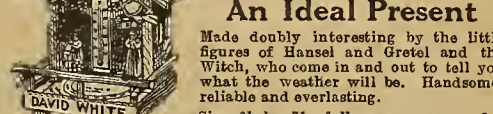
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Days That Are Different

The Happiness of Childhood is Made Up of Little Special Things

By Alice Crowell Hoffman

IN CHILDHOOD it seems ages from one holiday to the next.

Grown folks are often surprised at the rapidity with which one Christmas trips after another, but the little ones are always wondering how long it will be till Santa comes again.

The handboards along the road of childhood are ever pointing ahead to some realm of delight, some day that shall be different from the innumerable days that are alike. These handboards are scattered at long intervals along the journey of the year, and it is only fair to the little travelers that older folks do not wilfully or carelessly knock any of them down.

What Kind of Mother Are You?

The handboards pointing toward Thanksgiving and Christmas and Easter are not often overlooked because older folks have a personal interest in these great Christian holidays; but those pointing to Hallowe'en, St. Valentine's Day, and birthdays are often left to weather until they are passed by unnoticed. Someone has lost an opportunity to make a little one happy, and childhood is robbed of a joy that by right belongs to it.

Many mothers do not take any notice of these lesser holidays because they think they are too busy. The child who told her troubles to her old rag doll might have given her Martha-like mother a lesson in true values:

"Mary got her birthday cake and we didn't. It's hard luck, Dolly, but I guess there's nothing to be done as long as Mamma likes cleaning better than cake."

Some mothers do not think that the planning and extra work involved in celebrating the minor holidays call for an adequate response:

"Children are so unappreciative," said a woman to a friend. "I baked a cake for Joyce's twelfth birthday, iced it beautifully, and decorated it with the most cunning candy roses and candles. When the cake was brought on the table she looked at it critically and said, 'Why didn't you put two rows of roses around it? The one in Wesson's window is decorated that way!'"

"Had she always shown a disposition to criticize her birthday cake?" inquired her friend.

Let the Children Work With You

"Well, really this is the first birthday cake she has ever had," confessed the mother. "You see, I never thought much about it until I saw the eagerness with which your two little lads helped decorate their birthday cakes. They seemed to get a world of enjoyment out of it, and I felt that we had missed something by letting Joyce's birthday anniversaries go by unnoticed. I meant to begin, but I guess I've waited too long."

"Oh, no," interrupted her friend brightly, "it's never too late to begin, but don't make the mistake of beginning alone. Next year let Joyce help. Get her interested, and you'll agree with me that it pays after all."

So many folks are guilty of this mistake. They painstakingly work out their ideas and bring them to the notice of the



child who naturally looks at things from a different angle. If he fails to respond effusively at once, the whole realm of childhood is branded as ungrateful. Since children are primarily interested, not as much in the finished product as in the process of its manufacture, why not call them to aid in the preparation for the days that are different?

"One of the happiest memories of my childhood," said a woman, "is twined about the hearts that Mother let us cut from bright red paper. They were much like the ones that are sold in shops, but

to me they will always be different because we all gathered around the table and vied with each other in producing the neatest specimens. After we had done our best, Father and Mother, acting as judges, selected the ones that were to be used for decorating the Valentine table. Their judgment was governed more by their hearts than by their heads, for in no other way could one account for Baby Ruth's jagged specimens appearing side by side with Brother Tom's perfect ones. I let my little folks carry out the same idea for Washington's



birthday, and we all feel that the Father of His Country is more real to us because of the hatchets and cherries that adorn our table on February 22d. Even Billy, who is too young to understand, coos with delight and tries to appropriate to himself all the hatchets and cherries that fall within his reach."

The Wisdom of Nonsense

Hallowe'en is another holiday at which some older folks look askance because they do not enter into its spirit. If one does not like the pranks that are played, let him meet the children halfway and direct the spirit of fun that roams through this weird night. There is no holiday which offers so many games in which the whole family can join. Some years ago I saw a father and his son ducking for apples, and I have never been able to decide which of them enjoyed it the most. The element of mystery appeals strongly to all, and no one wants to get too old to enjoy a bit of real nonsense. Let the children make jack-o'-lanterns for the family party. The candlelight that gleams from their weird countenances will shine far down the years.

The inalienable right of every child is happiness. Some are defrauded of their birthright through thoughtless misunderstanding and selfish near-sightedness of those who love them. Many people suffer all their lives because their mothers lacked the broader vision that can sometimes be guilty of omitting to scrub the oilcloth, for the sake of making ready the birthday cake.

Housewife's Club

"WHAT would you do if things were always boiling over and you had to wash the dripping pan of your gas range every day?"

"I'd keep two thicknesses of newspaper on the pan." M. K. S., Washington.

"I can't keep the corners of the rooms clean. What shall I do?"

"Cut an old whisk broom into a point." G. H., Massachusetts.

"Father has a stitch in his side and the hot-water bag leaks. What can I do?"

"Fill it with heated sand or salt." W. D., Kansas.

"The baby afghan I crocheted is six inches wider at one end than the other, and I haven't time to make another."

"Square it up with a ruler, stitch around it on the machine, and bind it with satin ribbon." P. S., Iowa.

I have collected a set of covers from lard buckets, coffee cans, and so forth, which fit into the bottoms of my different cooking utensils. When wishing to cook slowly and thoroughly and yet preclude all danger of burning, I invert the right-sized cover in a saucepan before placing in it the matter to be cooked and can calmly attend to other things, knowing there can be no scorching.

H. G., Washington.

The Brown Mouse—Continued from Page 20

"Alive and making an argument against taking the emetic," replied the doctor. "But I guess she got it down him."

"I'd hate to lose that boy, Doc!"

"I don't believe there's any danger. It doesn't sound like a genuine poisoning case to me."

Thus reassured, Mr. Bronson was calm, even if somewhat tragic in calmness, when he entered the "death chamber" with the doctor. Newton was sitting up, his eyes wet, and his face pale. His mother had won the argument and Newton had lost his dinner. Haakon Peterson occupied an armchair.

"What's all this?" asked the doctor. "How you feeling, Newt? Any pain?"

"I'm all right," said Newton. "Don't you give me any more o' that nasty stuff!"

"No," said the doctor, "but if you don't tell me just what you've been eating, and doing, and pulling off on us, I'll use this," and the doctor exhibited a huge stomach pump.

"What'll you do with that?" asked Newton faintly.

"I'll put this down into your hold and unload you, that's what I'll do."

"Is the election over, Mr. Peterson?" asked Newton.

"Yes," answered Mr. Peterson, "and the votes counted."

"Who's elected?" asked Newton.

"Colonel Woodruff," answered Mr. Peterson. "The vote was twelve to eleven."

"Well, Dad," said Newton, "I s'pose you'll be sore, but the only way I could

see to get in half a vote for Colonel Woodruff was to get poisoned and send you after the doctor. If you'd gone it would 'a' been a tie anyhow, and probably you'd 'a' persuaded somebody to change to Bonner. That's what is the matter with me. I killed your vote. Now you can do whatever you like to me, but I'm sorry I scared Mother."

Ezra Bronson seized Newton by the throat, but his fingers failed to close.

"Don't pinch, Dad," said Newton. "I've been using that neck and it's tired."

Mr. Bronson dropped his hands to his sides, glared at his son for a moment, and breathed a sigh of relief.

"Why, you darned infernal little fool," said he, "I've a notion to take a lame strap to you! If I'd been there the vote would have been eleven to thirteen!"

"There was plenty votes there for the Colonel if he needed 'em," said Haakon, whose politician's mind was already fully adjusted to the changed conditions. "Ay tank the Woodruff District will have a junanymous school board from dis time on once more. Colonel Woodruff is just the man we have needed."

"I'm with you there," said Bronson. "And as for you, young man, if one or both of them horses is hurt by the run I give them I'll lick you within an inch of your life. . . . Here comes Dilly driving 'em in now. . . . I guess they're all right. I wouldn't drive a good team too fast for any young hoodlum like him. . . . All right, how much do I owe you, Doc?"

[CONTINUED IN NEXT ISSUE]

EW

The Cup of Life

By Alice Dooley

OH, WHAT is life worth if 'tis not for another?
When we dip in the deep well of life for a draft
If the cup is not held to the lips of a brother
'Twill change into bitterness while it is quaffed.

Drink deep, then; begrudge not your soul its full measure
Of happiness; sing like a bird if you're gay.
But whether you're happy or sorrowful, treasure
The chance to give happiness, just for a day.

Tested—1,000 Potato Varieties

By J. R. Lawrence

WHEN I was a boy I used to think that there were two kinds of potatoes; namely, little ones, or the kind my mother made me peel, and big ones, the kind she peeled when dinner had to be got ready in a hurry.

Since then I have found many other sorts.

In all, I have found and grown over 1,000 commercial varieties of potatoes. A few of the thousand, not many, have been found adaptable to many sorts and conditions of soil and climate. By far the larger number are not worth bothering with unless they can be grown under ideal conditions as to climate and on the very richest potato soils.

It is safe to say that out of the thousand varieties I have grown there are not over thirty worth the attention of the American growers. I had 135 varieties on trial the past year here in York County, Maine. The list embraced the best ten of the older sorts, such as Early Rose and Beauty of Hebron, and the very cream of the newer sorts introduced by American and foreign seedsmen in the last eight or ten years.

The best showing was made by the New Russet, put on the market by a New York seedsmen. This is a potato of Carman type, flat-round as to shape, and matures about with Carman No. 3. I never dug tubers in the twenty-five years of my experience that turned out as uniformly as did these Russets.

You have heard, of course, the expression, "as like as two peas in the same pod." This might thus have been said of my crop of Russets. No small and no large ones in the lot. I weighed 100 of them eighty days after digging. They all ran about 9 and 10 ounces each. Russets have a netted skin, white flesh of good quality. My yield was over 450 bushels per acre.

Scotch Rural is another good sort, flat-oval in shape, that came to me from a Wisconsin seedsmen. This is a handsome potato of the type the English

growers rave over. It has a smooth golden skin, flesh inclined to yellow, is of good quality, and a good cropper, but perhaps not the best of keepers.

Big Four and Lowell Green Mountain are much alike, some say identical. These are the very highest developments of the Green Mountain type of potato. I would advise the trial of these varieties whenever the Green Mountain is the type of potato called for.

Bear in mind that these varieties have the characteristic shape, or rather lack of fixed shape, of the original, and also the lack of uniformity, a characteristic of the Green Mountain potato.

Bethel Beauty is a very handsome white potato, an extra yielder, and is similar in shape to the Green Mountain, but the quality is only fair.

The Moreton has a yellow skin and tinted flesh. In reality it is a late Green Mountain, fair in quality and a good yielder.

Comet and Roxbury were practically the same as Carman.

Manistee is a red or rose-skinned Green Mountain. It is a rose seedling, but not of rose type, and lacks uniformity as to size and shape. Manistee is a big cropper of best quality.

Banner, Gold Coin, Pat Murphy, Million Dollar, Bell's Late, and Carman No. 3, with all those named above, gave me a yield of 400 to 480 bushels per acre on light soil to which had been applied a high-grade potato manure.

Two of the old standard sorts, namely Early Rose and Beauty of Hebron, gave yields very close to 400 bushels per acre, and are of finest quality.

As stated above, the Russets in this test made the best showing of the year.

The Perfection proved to be still as good as any other early variety, and the old-fashioned Bliss Triumph is still the very earliest potato grown, though not of extra good quality. It will usually outyield Noroton Beauty, and leads considerably in early maturity.

3498 Letters In Six Days

They came from every state in the Union—not a state missing—in response to one single article in THE COUNTRY GENTLEMAN.

Within a month nearly 10,000 of our readers wrote the Department of Agriculture at Washington, asking for the bulletin referred to in our article.

The official in charge of this governmental department says: "What the people want nowadays, especially those who read the agricultural journals, are facts told in the least possible space. I thought you would be interested in this one illustration of how your feature articles are received by the public. Every state in the Union has been heard from."

Ten thousand letters in one month about one article gives some idea of the value of a wide-awake farm weekly to wide-awake farm people.

You need this up-to-date fact paper in your farm business!

Incidentally—Is there any farm problem that is bothering you? THE COUNTRY GENTLEMAN will solve it.

Any problem about management, crops, feeding, markets, orchards, chickens—any farm question at all—will be answered for any reader of THE COUNTRY GENTLEMAN personally and promptly by mail. We have more than 100 experts to perform this service for you absolutely without charge.

Ordinarily THE COUNTRY GENTLEMAN sells for five cents the copy or \$1.50 the year. But—

To put this big national farm weekly at once into half a million farm homes, the next 13 issues of THE COUNTRY GENTLEMAN will be mailed to your address for 25 cents—less than two cents a copy!

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Ten-Second Topics

Farm News From Official Sources for the Person Whose Time is Money

A NEW method of growing corn has given good results in dry-land sections of western Kansas. The rows are 7 feet apart instead of 3½ feet, but the plants are twice as thick in the row. The yield was over double that of adjoining fields planted the old way.

JAPAN exports canned crabs.

RUSSIA imports more than twice as much harvesting machinery as she makes.

A GOOD way to secure ice for farm use is to dam the nearest creek and make your own ice pond.

GREAT BRITAIN, France, Germany, and Austria have all agreed that cotton is not contraband of war.

JAPAN has manufactured condensed milk since 1892, but she still imports \$1,000,000 worth of it a year.

PERFECTLY fresh wheat flour produces a creamy loaf of bread. Flour from old wheat causes the bread to be grayish in color.

TO ATTRACT birds to the home, provide four things—protection, nesting places, food, and water, unless Nature already supplies them.

AFRICAN woolless sheep seem to thrive in Porto Rico. These sheep have black skins and brownish hair. They nearly always drop twins.

THE U. S. Consul at Calgary, Canada, says the remarkable development of western Canada has been made largely on borrowed capital.

GERMANY permits some merchant vessels to enter and leave North Sea ports, but they must do so in clear weather and only in the daytime.

DOCTOR PEARL, the noted poultry authority of Maine, says that a hen's egg is similar to the human skull with regard to variations in size and shape.

ZINC-CLAD nails are nails heavily coated with zinc in a bath of the molten metal. The manufacturers say these nails weather better than ordinary gal-

vanized ones which get only a thin coating by an electrical process. Tests of zinc-clad nails are now under way.

TO FIGURE that the value of manure from dairy cows pays for the labor is incorrect. The manure about pays for the labor of feeding and care, but not for the milking.

AN ENGLISH farm accountant concludes after thorough study that you cannot determine the cost of any one farm product without knowing the cost of all the others.

AN IOWA STATE expert has been conducting automobile institutes in thirty Iowa towns this winter. He demonstrates the best ways to care for and operate machines.

BECAUSE of the scarcity of wheat the Austrian authorities are requiring bakers to use potatoes as an ingredient in bread. But even potatoes are scarce, and thirty bakeries have closed in one city.

OF FIFTY farms in Montana, the twenty-five more profitable ones had four important sources of income, while the poorer farms averaged about two. The better farms were stock and grain farms. Most of the poorer farms produced only grain.

"How long have you lived on this farm?" That was a question asked in the last census. More than half of all the farmers said they had been on the farm they were on less than four years. Share tenants move the most, and owners the least.

THE largest raft of logs ever floated on the Pacific Coast was conveyed from British Columbia to Puget Sound. It contained a million feet of cedar. The raft was 100 feet long, 70 feet wide, drew 20 feet of water, and stood 15 feet out of water.

SECRETARY OF COMMERCE REDFIELD points out the value of prompt reports on foreign commerce. Consequently the government printing office now prints the Daily Consular Reports in ten hours instead of four days, as previously; 300 consuls supply the information.

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Mail to us now and start at once.

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More Women Will Read This Issue of the WOMAN'S HOME COMPANION Than Ever Read an Issue Before

FOR forty-two years the *Woman's Home Companion* has been growing greater month by month. This issue—the Spring Fashion Number—will have the largest circulation of any issue ever published. More women will select their spring hats and gowns from its fashion pages, printed in colors; more families will read its short stories by famous authors; more boys and girls will find joy in its colored cut-outs than ever before.

Have you seen the *Woman's Home Companion* recently? Do you know that there are sixteen separate departments in it to help and interest and entertain you? Wouldn't you like to see this Spring Fashion Number—the best of all?

You May Have a Copy By Asking For It

The *Woman's Home Companion* is published by the publishers of FARM AND FIRESIDE. It belongs to the same great Crowell Publishing Company family. If you have not seen a copy recently, if you would like to have a copy of this number for your own, you may have it by simply asking for it. Your name and address on a postal card will bring it to you. This is a family courtesy which the publishers are glad to extend to you. They want you to know the *Woman's Home Companion*; to be one of the thousands of new readers who month by month are making the *Woman's Home Companion* grow.

Dozens of New Hats and Gowns

Think of walking down Fifth Avenue, New York, and seeing the scores of spring hats and gowns displayed in the fashionable stores! Think of making your choice from all of these!

That is what the Fashion Number of the *Woman's Home Companion* offers you. From the hundreds of new hats and gowns that are shown in the fashionable stores, the fashion editors of the *Woman's Home Companion* have chosen the best. Page after page of charming costumes, many of them reproduced in full color, fresh from the fashion center of the world. In your own home you can have these loveliest spring designs all laid before you and with *Woman's Home Companion* patterns you can duplicate for yourself the most stylish gowns at only a fraction of the store cost.

Expert Advice About Your Baby

Have you a baby in your home? Would you like to spend an hour talking with the greatest baby specialist in the United States? Would you like him to give you his advice about baby's food, baby's clothes, baby's care and health? Are there questions you would like to ask him? Are there any problems on which he could help you?

The Better Babies Bureau of the *Woman's Home Companion* offers you the advice of the most successful baby specialists. For the cost of a two cent stamp you can have their best advice. You can come to them as often as you care to; you can bring as many problems as you want. This is part of the service that the *Woman's Home Companion* offers you, and one of the reasons why its circulation grows so fast.

Four Novels and 75 Short Stories

Do you like love stories? Margaret DeLand, the famous author of "The Iron Woman," has written for the *Woman's Home Companion* the foremost novel of the year. When it is published later as a \$1.50 book it will be one of the great books of the season, but you can read it first in the *Woman's Home Companion*.

And you can read three other novels too, by your favorite story writers—writers who have made the *Woman's Home Companion* famous the country over for its fiction. Four complete novels and 75 short stories—six in every single number. That is the sort of entertainment that the *Woman's Home Companion* offers and another reason why its circulation grows so fast.



She Cut Her Household Expenses in Half

Her name is Mrs. Larry. She is a real woman. She discovered that her household expenses were too large; that they left her no spare money at all, so she started out to see how her expenses could be cut and she discovered ways of cutting them almost in half.

Would you like to make your household money go farther than it does? Would you like to have a little more money in the bank at the end of the year? Then read Mrs. Larry's Adventures in Thrift. It is one of the helpful practical series of articles in the *Woman's Home Companion*. When you have read it you will understand another reason why the circulation of the *Woman's Home Companion* grows so fast.

There are more than 75 pages in this March Fashion Number of the *Woman's Home Companion*.

Are you interested in clothes for your boy or girl or your growing daughter? Before you spend a penny for their spring clothes you should see the beautiful designs which the fashion editors have selected.

Do you love fancy work? There is page after page of new knitting and crocheting and embroidery designs.

Are you interested in redecorating a room of your house? The *Woman's Home Companion* will help you to do it tastefully and at a modest cost.

Do you like to read about interesting people? The men and women who are doing great things in the world are pictured every month in the *Woman's Home Companion*.

More than seventy-five pages of entertainment and help waiting for you.

Just Write Your Name on a Postal Card

Just take a postal card and say, "I should like to have you send me a copy of the Spring Fashion Number of the *Woman's Home Companion*, which you offer me as a reader of *Farm and Fireside*." Sign your name and address and drop it in the mail.

The publishers make you this offer, first because you are one of the great family who read the Crowell Publications—*Woman's Home Companion*, *The American Magazine*, *Farm and Fireside*—second because when you have seen one copy of the *Woman's Home Companion* you will want them all.

By its fashions, its household helpfulness, its good stories, and its entertainment for every member of the family, the *Woman's Home Companion* has won its way up through forty-two years. And it will win you. Ask for this Spring Fashion Number, and see!

THE WOMAN'S HOME COMPANION

Published by The Crowell Publishing Company, Springfield, Ohio

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WITH THE EDITOR

At COOLFONT FARM
February 27, 1915

SOMETIMES the capacity of the human soul for indignation seems all too small. Mine is when I read the following letter from Mr. Paul Matthes of Crawford County, Missouri.

I know my readers will be stirred as I was.

I am sending this letter as a call for help.

I have been a reader of FARM AND FIRESIDE for about four years.

I like the paper very much, and I appeal to it and its editor and its readers for help.

Four years ago we bought forty acres of timber land for a home. We now have made a nice farm out of the place, but after four years of work and hundreds of dollars of expenditure we have no home, and not enough money to buy one. We do not own the farm. The deed we holds calls for the adjoining forty, which is a rockpile with only four acres of good land on it.

The land agent showed us the wrong land because no one would buy the rocky forty which he had for sale—and we did not find out the wrong he had done us until four years after we bought it.

There is nothing to do but to move, and that soon. This reminds me of that engineer's family from Chicago who called on you for help. They wanted a home on the farm but had no money, or not much. There came some replies from farmers, and one from a man who had a big farm with plenty of tools but had no one to take care of the place. He wanted one or two families to take charge of the place and work it on shares.

There Are Three of Us

Now, Mr. Quick, would you be so kind as to find a little space for this letter in FARM AND FIRESIDE? I know there are a good many people in the big FARM AND FIRESIDE family that own big farms with stock but for some reason or other are unable to work them.

There are three of us. We know how to farm, and we are willing to work. We do not want to go back to the city, but as we must go somewhere any kind of a proposition will be considered. Having lost home and all through a land swindler, we must start all over again. I think you know what that means.

I can imagine what it means; and most of us who have ever helped to open up a new farm—and I have done so—can imagine what it means. It means that every square rod of the lost farm is the grave of a hope. The house built with so much anticipation of happy life in it—who can fail to realize something of the feeling of the wife, the child, and the husband and father when it suddenly is brought home to them that not one stick or stone of it belongs to them. The flower beds will bloom for someone else, or be torn up by swine or overrun by weeds. The lilacs, roses, peonies, and honeysuckles that were ours yesterday are the property of someone else tomorrow.

A farm is not a piece of land only: it is a cradle for our very flesh and bones, and the source from which the blood of our children and our children's children will come. The bread, the meat, the clothing all lie in that soil, crowding up for us and the generations to come. Cheerful fires for winter, cakes and apples for the family circle, books to read, great thoughts to think, strength for the solution of the problems of the soul, the raw material of life itself—all these lie there in the fibrous furrows which are ours.

And because we forgot to have a survey made, because we trusted a fellow man, because there are men who are too cowardly to commit murder and therefore kill people indirectly, this wonderful thing—our farm—is no more.

It is a good thing for us all that thought cannot kill, especially for that swindling land agent. After all, he had

to rob himself of everything which a real man holds of value before he reached the point of robbing this family—for a commission on the sale of a rockpile!

What shall we say to Mr. Paul Matthes? I have already written him a letter, but that can do him no good. Nobody but himself can do him much good.



The men who have farms and nobody to work them are not very plenty. Generally there is something wrong with these far-off opportunities. If there were not something wrong with them they would not lie open to the first good man with muscle and a knowledge of farming to come along. However, there may be such places open. We shall see.

Generally, however, a man can do best for himself by staying where he is, and fighting it out on a line he understands. I should think the man whose land Mr. Matthes occupies would feel like giving a chance to the family which made a home of it.

We know what kind of person the man is who deceived him for a real-estate dealer's commission, or the blood-money for a forty-acre rockpile which he may have owned himself; but I should like to hear of the man on whose land Paul Matthes and his family worked for four years to make a home.

Did he know of the mistake?

If so, why did he not interfere?

Does the law of Missouri allow an owner to look on for four years while such a mistake is in existence and get the benefit of it?

If I were Mr. Matthes I should take legal advice on this.

And if that owner is any better than the land agent, and I know there can't be two such men in one county, he ought to be willing to give Paul Matthes a chance. Mr. Matthes owns the rocky forty—with four acres of good land on it. With the forty he has improved he would have eighty acres, more than half of which would be good land.

I call upon this owner whose land Mr. Matthes has been working and improving to come forward and let us know what he is willing to do.

Most Men Are Just

I think he will probably give Mr. Matthes a chance to rent the land on easy terms when he realizes the situation, or to buy it on such payments as can be made.

This would be just. And I have found most men just when they are once given a chance to think things out.

And, then, there are those four acres, and the thirty-six acres of rocks. Can't any of you wise intensive farmers tell Mr. Matthes how to handle the four acres of good land and the thirty-six acres of rocks so as to make a living and some profits out of them?

What can this man do? Can he take that rocky forty and do as well with it as the Nebraska man, Arnold Martin, did with his twenty-one acres? Martin is said to make more money on the twenty-one acres than most owners of a quarter-section in that same region. Let's hear from the man with an answer to the Paul Matthes riddle.

I used to know a man out West who got mad when his hogs got in the corn. "I wish to gosh," he would yell, "that I had a lump of thunder with a handle on it!" I wish I had one for that land swindler every time I think of the case of Paul Matthes.

And if every reader of this will think of Paul Matthes and his misfortune when buying land it will save many a repetition of the tragedy.

Herbert Quick

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If any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers.

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

FARM and FIRESIDE



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Vol. XXXVIII. No. 12

SATURDAY, MARCH 13, 1915

Published Bi-Weekly

Their New Crop

Texas Farmers Sell Sudan-Grass Seed by Unusual Methods

By W. D. Hornaday

WESTERN Texas is fortunate in being the headquarters of an organization called the Lubbock Sudan Grass Seed Association. Here's the story:

That part of Texas where the growing of Sudan grass and a variety of other farm products has obtained a stronghold was only a few years ago in the heart of the cattle-grazing country—the land of short grass and a vast unfenced and undeveloped domain.

For many years, and up to within the last decade, the little town of Lubbock had the distinction of being more than one hundred miles distant from the nearest railroad point. To-day railroads radiate out of it in four directions; prosperous communities of farmers have been established within easy hauling distance of these lines of transportation, and a wonderful transformation of the former ranch region has taken place.

The altitude of the Lubbock section is about 3,000 feet, which makes the climate specially suited for practically all of the crops that are adapted to the more northern latitudes of the Middle West. The country is open prairie, just undulating enough for effective drainage. The average rainfall was about 22 inches per annum for a period of the last twenty years. An inexhaustible supply of pure water underlies the county, and it is available for irrigation purposes.

An Important Crop

Sudan grass is grown, however, without irrigation.

Some of the results would point to its being the greatest drought-resisting forage crop known.

A few sample packages of seed found their way into the hands of farmers in Lubbock County, and in 1913 about 25 acres of it were planted.

Despite the low rainfall, a remarkable yield was obtained from two cuttings per season, each cutting averaging about 1 1/2 tons an acre of high-grade forage. Part of the first year's crop was threshed in ordinary wheat threshers, an average yield of about 500 pounds of grain an acre being obtained.

The demand for the seed for planting purposes was so great that much of it sold for fabulous prices, ranging from \$2 to \$5 a pound.

In addition to individual purchases of seed by farmers of Lubbock County, F. E. Wheelock, mayor of Lubbock, bought 2,000 pounds in the spring of 1914 and distributed it throughout the county in small packages.

Enough of the seed from this and other sources was obtained to plant more than 3,600 acres in that county. Reports of the success that had been met with there the year previous in growing the new forage crop had spread to other parts of Texas and other States, and many inquiries for seed began coming in.

Mr. Wheelock saw an opportunity for the growers of Lubbock County to supply what promised to be an enormous demand for the seed at good prices. To do this the absolute purity of the product must be safeguarded and established. To make and keep a stable market for the seed the adoption of extraordinary precautions was necessary. Mr. Wheelock and others with whom he talked on the subject agreed that this could not be done except by means of a co-operative organization of the growers.

The matter resolved itself into concrete form at a mass meeting of the farmers concerned, which was held at Lubbock on July 11, 1914. At that gathering the whole situation relating to the growing and marketing of the prospective crop was carefully discussed.

A working plan was drafted and an organization of 135 growers, representing a total of about 3,500 acres of Sudan grass, all in Lubbock County, was effected.

The organization has as its active basis a committee of seven men, five of whom are officers of the association and two are without other official positions.

It was in carrying out its method of insuring the purity of the seed during the growing period that the association accomplished what was perhaps the most

ordinary fanning mill, which took out all small and imperfect grains and chaff. The charge for winnowing was 15 cents a hundred pounds.

The planting season of the Sudan grass seed was May 15th to June 1st. Practically all of it was sowed in drills, each seed being 18 inches apart and the rows 36 inches wide. Two to three cultivations were given the crop. Two cuttings from the same planting were obtained, but the seed was obtained from the first crop, which was cut about one hundred days after planting.

The grass is cut by an ordinary corn binder, and is put in shock like wheat. It remains in the shock ten to fifteen days; then it is threshed.

The yield of seed from the first cutting runs all the way from 400 to 1,000 pounds an acre. The average yield is about 500 pounds an acre. This is obtained from a seeding of about 6 pounds an acre.

Each Sack is Labeled

The plan under which the Lubbock Sudan Grass Seed Association operates, aside from its crop-inspection features, is that each individual grower makes a contract with the central committee of the organization for the latter to sell his seed. When threshed and winnowed the seed is placed in sacks that are furnished by the association. Each sack holds 100 pounds of seed, and bears upon it the trade-mark of the association, and the guaranty of the purity of the contents. Written in black chalk upon each sack is also the name of the grower. This is done in order that in the event any possible complaint as to the quality of the seed should be received it could be properly traced and suitable action taken against the offending grower.

The season's total yield of Sudan-grass seed of the farmers who belong to the association was approximately 1,500-

000 pounds. The selling season began immediately after the crop was harvested, and was to continue until all the seed was disposed of.

The association fixed a scale of prices for the seed as follows: One pound to ten pounds, \$1 a pound; 11 to 25 pounds, 95 cents a pound; 25 to 50 pounds, 90 cents a pound; more than 50 pounds, 85 cents a pound.

Each contract of sale contains a printed and signed guaranty.

In carrying out its selling plan the association appointed agents in many different parts of the country. These agents were paid a commission.

From the net amount which the association receives 10 per cent is deducted to pay running expenses.

The first year of the association's operations will close July 1, 1915, and at that time whatever money is left in the treasury from the 10-per-cent assessment that was levied for meeting running expenses will be pro-rated among the members on an equal basis.

It is claimed that, even should there be such a big falling off in the price of the seed as not to warrant the grass being grown specially to meet the demand for planting purposes, the grain has high value as a stock feed.

While more than three fourths of the 1914 yield of Sudan grass in the United States was grown in Lubbock County, small acreages were successfully tested in Illinois, California, Missouri, Mississippi, Tennessee, and Virginia.

In general appearance Sudan grass is like Johnson grass. The seeds, too, are as nearly alike as are Mammoth clover and Red clover seeds. The Sudan plant, however, has a broader leaf and a small, delicate, non-spreading root. Unlike Johnson grass, it dies, root and all, when frost comes.



Seed-gathering on the Lubbock farms. Where Johnson grass thrives the danger of sowing impure seed should be recognized. Make sure that you get the seed you want

important part of its plan. The fact that Sudan grass belongs to the sorghum family causes it to mix readily with Kafir corn, milo maize, cane, Johnson grass, and perhaps some other variety of grasses. Many farmers who planted Sudan grass also grew Kafir corn, milo maize, and sorghum.

It was to prevent hybrids of these plants from obtaining a foothold in the Sudan fields, and thus making the grass seed impure, that the association kept employed five inspectors at \$3 a day each and expenses to visit each farm at frequent intervals during the growing season.

The Inspection Was Rigid

The rules of inspection were extremely rigid. This is shown by the fact that of the 3,500 acres owned by the 135 growers who belong to the association about 1,000 acres of the crop were condemned as impure, and none of this hybrid-tainted seed was handled by the association.

If a sprig of Johnson grass was found in a field before it had taken on pollen the owner was required to cut away the Sudan grass for a distance of 30 yards around the menacing plant.

If the Johnson grass seed had pollinized, a part and sometimes all of the field was condemned.

Similar action was taken when other sorghum plants were discovered.

Each farmer belonging to the association paid all the cost of growing and harvesting his own crop, up to the time the seed was placed in the warehouse.

The cost of threshing the 1914 crop was one-half cent per pound.

Before being sacked the seed was run through an

The "Broody" is Conquered

The Wits of 1,500 People in This Headwork Contest Are Against Her
All These Methods Are Humane

Roost She Must



WITH narrow boards and wire netting I made a crate 3 feet wide, 5 feet long, and 2 feet high. I provided convenient receptacles for water and feed and hung green feed up inside the coop.

The bottom of the coop I made of round poles set 1 inch apart. As the coop is set up from the ground on corner legs the hen must clasp the bottom poles with her feet. There is no place to hover; she must roost. Place this coop under shelter from sun and rain, and you know your hen is comfortable till she is ready to lay, which will be before long.

MRS. MARY E. DAVIDSON.

"Old Yaller" and the Clock

SOME years ago I was endeavoring to break up a sitting hen, but my efforts were in vain. "Old Yaller" continued to sit.

Finally I took a small alarm clock and set it so it would go off in a few minutes. I placed it in one corner of her nest and watched. It went off. And so did "Old Yaller." She left the nest and stood dazed for one horrified instant and then with one squawk she ran out of the henhouse and flew over the park fence and began to hunt for bugs in the grass.

She not only stopped sitting but she stopped clucking, and in a short time began to lay. I have since tried this method on more than one hundred broody hens with complete success.

R. L. MUNGER.

A Lesson on a Slate

AS SOON as I find a broody hen I lift her off the nest and place a piece of roofing slate in it. If the slate is too large to go in, lay it on top.

The hen usually sits on it until bedtime, then leaves it and goes to roost. Sometimes one will come back the next day, but after that she gives it up. Even a hen with the sitting fever can't warm a piece of slate.

MRS. R. T. GIFFORD.

Just a Side-Hill Coop

IMPPLY set a roomy coop on a steep hillside, put a roost in it, and shut the cluckers up. They can't sit up or down hill comfortably, so they stand on the ground or occupy the perch. I feed and water them; no starvation or abuse.

In two or three days I let them out of the coop cured and happy. It is easier to break them up at the beginning than to let them get established in their broody notion.

CAROLINE A. MILLER.

Lunch-Counter Disturbance



TAKE about fifty sticks about 2 feet long and 2 inches in diameter, and pile them up so as to make a small square enclosure. Put your broody hen inside and place a weight on top of the enclosure to make it firm. Then put in several

quarts of grain and see that there is some left after the broody hen has eaten all she wants.

Let the rest of the poultry have access to this coop. They will reach in from the outside trying to get the grain inside. The chickens will line up all around the coop and stay there all day long. Their constant reaching through the open spaces will keep the broody hen in an anxious condition, and the more persistent she is in sitting the more she will resent the intrusion of the other hens' heads. From one to four days of this will cure her of her broodiness.

S. R. GRABILL.

Our Menagerie Method

PUT obstinate broody hens in a pen with small harmless animals, such as kittens or pet rabbits. The hens soon get over their broodiness. Give plenty of fresh water, but feed sparingly so they will be rather hungry when released.

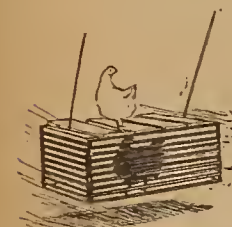
MR. AND MRS. T. L. DRAKE.

Change of Company

OUR chicken yard is divided into several pens in each of which is a rooster and ten hens. When a hen becomes broody we simply transfer her to the next yard and she soon begins laying again.

LUCY S. WILLIAMS.

A Day in a Swing



TAKE a bushel potato crate and fasten a wire on each end long enough to reach the rafter in the chicken house so that the crate will be about 4 inches off the floor. Nail two or three slats across the top of the crate, leaving one loose at one end. Put the broody hen in the crate and fasten slat down.

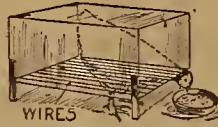
The hen moving in the crate will start it swinging and the fowls in the room will jump up on the crate occasionally, making it quite uncomfortable for the old biddy trying to keep her balance and at the same time trying to warm up the cold slats of the bottom of the crate. We have had them give up after just one day of swinging.

ARTHUR BURNS.

FIRST PRIZE in this contest has been awarded to "Roost She Must," by Mrs. Mary E. Davidson of Oregon, and Second Prize to "Old Yaller and the Clock," by R. L. Munger of New York.

Where several persons sent the same method, which happened in many cases, preference was given the one written up in the most interesting way. These are the most humane and practical of the 1,500 letters received.

A Cool Gridiron



ACROSS the open side of a box stretch smooth wires 3 inches apart. At the corners nail legs as illustrated, so the box will stand 3 inches from the ground, wire side down. Make an opening in the top large enough to admit a hen.

The hen can stand or walk but cannot sit, and in a short time will not try. Put the box in a clean, grassy place, with feed and water within reach. In the sketch the box is made to appear transparent so you can see how the wires are arranged.

PATTIE G. HALLUMS.

Three Days Out

WHEN Biddy stops laying and sits upon the nest, I take her out of the chicken yard and let her roam at will and lonely about the orchard. At first she storms furiously along the wire fence, clamoring to get back, using all the "fowl" language in her vocabulary. After a while, finding her efforts futile, she quiets down, walking aimlessly around.

She receives regular rations of food and water. At evening she again storms the fortress, but is unable to gain admittance, so finally she goes to roost in a tree. In about three days she is completely "broken up" and ready to be returned to the chicken yard.

MRS. M. F. WARD.

Bow Necktie Stops Sitting



THE best thing I have found is a red necktie tied around the broody hen's neck bow-fashion. It's the best cure of all. She won't be content to sit on her nest. She will be too busy admiring her necktie.

MRS. E. F. JOHNSON.

She'll Avoid a Stew Kettle

PLACE an old iron stew kettle about half full of water in the nest and your broody hen won't bother it any more. I learned this by accident and have found it the best way of all.

MRS. JENNIE McLAUGHLIN.

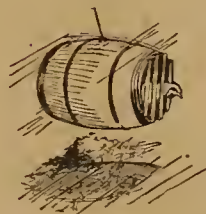
Tick, Tick, Tick, Tick

USING incubators to hatch all my chicks, I was confronted every year by the problem of breaking up broody hens, especially since I am keeping the heavy breeds.

I had been unable to break them up quickly and satisfactorily until last spring, when I tried the following method with the best of results: As soon as a hen wants to hatch I take an old watch which has a loud tick and put it in the nest under the hen. She will at once become nervous, and will stay on a nest only a few days at the most.

J. A. REID.

A Keg Cure



TAKE a nail keg, put a strong staple on the outside, midway between the ends, and with a wire suspend the keg from a rafter or other convenient support.

Put your broody hen in the keg and fasten slats over the ends. I take out both ends so as to give plenty of air and light. When she has busied herself for twenty-four hours trying to keep the keg from tilting she will be all through with her desire to sit.

A. L. PUTNEY.

Leave It to Teddy

PUT a small Teddy bear in the nest. I have never known this to fail. An old Teddy bear will do, though a new one can be bought for a small sum.

HARRY R. WEAVER.

Henyard Blindman's Buff

TAKE a piece of dark heavy cloth 7 inches square. Fold it in the middle and make it into a long bag. Put it over the hen's head, first cutting a hole in one corner of the bag to let her bill stick through. With a small safety pin fasten the bag around the neck so it will not slip off.

Put the hen on the ground. She will not be able to find a nest, and in from twelve to twenty-four hours will give up her desire to sit. I have had no trouble with broody hens since trying this method.

GEORGE E. HAMILTON.

Let Them Roost Over Water



SECURE a water-tight tub, put two inches of water in it, and then make a rack of 2-inch roosts cleated together 9 inches apart. Then set this on legs 3 inches long. Provide feeding receptacles.

Put your hens in this tub and cover it. They will get on the roosts. The confinement so close to the water usually cools Biddy's ambition to sit within forty-eight hours. I keep Plymouth Rocks, and my strain are quite broody. I have found this method the best of the many I have tried.

THOMAS E. GILKEY.

Medicine That Cures Broodiness

SHUT up your sitting hen in a coop, put six drops of tincture of aconite in a pint of water and give it to her to drink. Feed nothing but bran. This breaks broody hens up in less than three days. Aconite is also an excellent remedy for colds and for fowl pneumonia, for which give one-drop doses in a teaspoonful of water every two hours.

F. E. MCKEE.

Let Her "Merry-Go-Round"

MAKE a coop about 16 inches square, with slatted sides and bottom. Cover the top with boards, at the same time providing a door for putting in the hens.

Now take a half-inch rope about 12 feet long. Tie it securely around the coop with the knot on top. Put in your broody, throw the free end of the rope over a branch of a tree, and pull up the coop so it is 3 feet above the ground. Give the coop a few whirls, which will twist the rope (but not too fast).

After a time it will untwist of its own accord. Do this several times a day. The hen will cackle from the exhilaration of the strange experience, and she will finally cease to cluck. This will not injure the finest hens.

M. M. NEWMAN.

Stake Her Out

IN A COOL, shady place, away from the rest of the flock, drive a small stake flush with the ground. Drive a nail part way into the top, and to it fasten one end of a strong cord 3 feet long. To the other end fasten a piece of cotton cloth 1 1/4 inches wide and 12 inches long.

Wrap this twice around one of the hen's legs above the foot, and tie in a square knot. Place within reach a large dish of fresh cool water and green succulent food. At night cover her with a box.

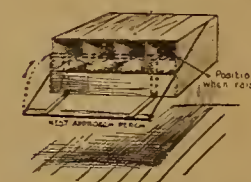
V. L. DALLY.

She Can't Cover the Eggs

IHAVE never known this method to fail. Take a strip of cloth, put it around her wings next to the body, and draw the wings up just enough so the hen can't put them down to cover her eggs. Tie in that position. Give her her liberty and she will soon go to laying.

M. E. AUSTIN.

No Roosting in Nests



THE sketch shows my system for breaking up broody hens. There is no confinement; the hens have their liberty at all times. At night when I gather the eggs I draw up the nest-approach perch. That shuts off all hens for the night, no roosting on nests. When I close the henhouse for the night I drop all nest-approach perches, and everything is ready for the next day.

G. W. WILLIAMSON.

Entertain Them in Park

BUILD a small park. Mine is 12 by 16 feet and completely covered with wire netting. Put in a pole for a roost, and over the roost put a strip of roofing to keep out the storms.

Put your broody hens in this park and treat them as though they were your best friends. I will guarantee that in four to six days they will come out smiling ready for business. This simple and easy plan has cured my broody hens for the last four years.

A. D. GEORGE.

Gentleman Company

IHAVE a small wire pen with a roost in it, but no nest. I keep a rooster in that pen. I call him Old Dan Tucker, and whenever I have a broody hen I put her in that pen and feed her well. In a few days I turn her out and she will soon go to laying.

MRS. J. W. HARTWELL.

Roly-Poly Method



TAKE a box big enough to hold the hens you have to put in. Remove the sides and replace them with laths so the hens have plenty of air. Then bore a 2-inch hole in each end, in the center. Put a pole through the box, and support the ends of the pole on two posts driven into the ground so the box can swing freely between them.

Have a door in the top to put your hens in. Let them try to keep their balance in this for three days and they will be over their broodiness.

CLARENCE WISCHMEYER.

E W

Are Your Hens Good Layers?

Two Poultrymen Who Don't Agree, Here Give Their Experiences With the Trap Nest on Their Farms

WHAT is the proper place for the trap nest? Is it appropriate for general use, or only for unusual purposes? If used, what results may be expected, and how shall these results be interpreted for breeding purposes?

These questions lack adequate correct answers in nearly every poultry business. To-day we hear and read so much about the wonderful results possible in egg production by means of trap-nesting. We are told so often that the trap-nest record of a hen is the surest means for selection, and that we must trap-nest our hens in order to "select the sons of the heaviest layers" for breeding. It is little wonder that we either turn to or look to the trap nest as the ultimate means of success in breeding.

Where It Fails

By Philip M. Marsh

A considerable number of poultrymen have to some degree adopted the trap nest; few of them have stopped to consider or study the possibilities or meaning of trap-nest records. As a result, trap-nest education is very varied and confused. This article is intended to explain the possibilities and proper handling of the trap nest from a scientific standpoint, and to point out its reasonable place in the poultry industry.

First, let us consider two general factors affecting egg-productiveness. They are:

Inherited characters {
 Inherited constitutional strength.
 Inherited degree of fecundity.

Both of these factors have to do with egg-laying. Neither can be disregarded in the finest of selective breeding, but were one to be thrown aside it must be that of the degree of fecundity, for without constitutional vigor a bird cannot be a profitable breeder.

Trap-nesting has to do with the degree of fecundity, a matter indeterminate from outward appearances. It is the general presumption that the trap-nest record of a hen shows her inherent ability to produce, and is her "stamp" of worth for breeding. Constitutional strength is shown upon examination of a fowl for vigor, strength, general health, and the desire to work. Examination of a fowl will also reveal some of the signs of a great layer, which are depth and length of body, width between legs, white shanks, bedraggled and hard-worked appearance.

In seeking for results from trap-nesting among the poultry workers, one may find a great variety of results, methods, and opinions. The most general method is that of selecting the heaviest laying birds for breeders (of late) mating with a son of a very heavy layer. Great success is claimed for this method in many instances, and there are just as great failures which are unrecorded or not believed in.

We can obtain little satisfaction from these breeders' trials.

Raymond Pearl has furnished a very reasonable temporary solution of the problem. When taking charge of the poultry work at the Maine Station, Pearl found before him the records of nine years of selection for egg production. For nine years, hens with records of 150 or more eggs were selected to breed with males whose mothers had laid 200 eggs or more.

The Hens Did Not Lay as They Should

Surely this method, if a proper one, should show at the end of nine years an increase in the egg productiveness of the flock.

But during the experiment the general tendency in production was downward instead of upward. The yearly records follow:

Year	Birds Completing Year	Average Prod.
1899-1900	70	136.36 eggs
1900-1901	85	143.44
1901-1902	48	155.58
1902-1903	147	135.42
1903-1904	254	117.90
1904-1905 (50-bird pens)	283	134.07
1905-1906	178	140.14
1906-1907	187	113.24

This in itself should be enough to convince the unbiased that selecting by the above method is wrong, or at least that it is not certain to increase the production of the flock. But Pearl goes farther than this. He says:

"Temporary improvement might be expected to follow this plan of breeding in about 50 per cent of all flocks in which it was tried, and a temporary decline in the other 50 per cent. This appears to be the actual state of the case. Some practical poultrymen have obtained improved yields for a time. They attribute the improvement to the selection, and are enthusiastic believers in the gospel of the trap nest. Other equally competent poultrymen have failed to get any improvement, and have discarded the trap nests, though sometimes clinging firmly to the theory of breeding which their own experience has shown to be practically inadequate."

Continuing the study of the breeding problem, Pearl found that in the same flock used for the nine-years

WHAT A RUMPUS among the chickens and chicken men the trap nest is stirring up! It's a fortunate rumpus too.

From Australia to California, the long way around, hens of every breed, strain, hue, and feather are competing for egg honors.

There are two opposed chicken camps in this trap-nest controversy. On one side are the egg-sign enthusiasts who believe that even a novice after a little coaching can select the hens and cock birds by observation that are best for breeding purposes, and by following out this plan of selective breeding can build up a heavy-laying strain.

The other camp contends that it requires not only observation but systematic trap-nesting of the hens previously selected by outward signs to secure birds for the breeding pens that will perpetuate their heavy-laying qualities and required vigor as well. In other words, pedigreeing by performance.

Here are the views of two practical poultrymen belonging to these contending camps.

mass selection there were "pedigree lines," or strains, in which the egg productiveness was uniformly high, low, and mediocre, and which bred true to this character.

As examples of such strains note the following two strains—one high, one low, each breeding true to high and low production through three generations:



These hens (of the business type of Wyandottes) have been carrying off a good share of the honors in the three American egg-laying competitions. Plymouth Rocks and Rhode Island Reds of similar type are doing the same trick. Does this not prove that there is an egg type?

CASE I—HIGH PRODUCTION LINE

	1st Gen.	2d Gen.	3d Gen.	4th Gen.
Hens	1	2	5	23
Av. No. of eggs, Nov. 1 to Mar. 1	62	62	61	57.74

CASE II—LOW PRODUCTION LINE

	1st Gen.	2d Gen.	3d Gen.	4th Gen.
Hens	1	13	4	3
Av. No. of eggs, Nov. 1 to Mar. 1	33	17.5	22	9.67



These Wyandottes (of the roly-poly, snowball type) fill the eye at the poultry shows, but have not made good in the egg-laying competitions. The same holds true with the Orpingtons and other of the general-purpose breeds

The males used were individuals carrying either high or low fecundity inheritance, and so "jibed" with the hens they were mated with. These instances in the Maine Station flock are in no way exceptional. They show that probably in every flock of hens there are low and high lines, the separation of which—the high lines retained and the low lines culled out—would mean a wonderful increase in egg production of the average flock and a decided increase in any well-cared-for flock not bred for these high-fecundity lines.

The logical conclusion from these experiments is that:

1. "Breeding the heaviest layers" may or may not increase flock production, and if it does increase production it is only temporary.

2. The only sure way now in sight for increasing egg production by selective trap-nest breeding is the pedigreeing of each individual and the separation of the high-production lines.

The pedigreeing of birds in order to select high-production lines, requires not only trap-nesting but trap-nesting several successive generations, "tagging" each egg to be used for hatching with name or number of mother and father, and the marking of each chick from these eggs as they hatch.

It Will Take Four Years of Work

Three years or four years of this sort of work should furnish a good basis for the selection of the high-production lines and the discarding of the mediocre and low-production lines.

With the selected birds at hand the breeder may profitably discard trap nests, and breed from his stock with the assurance that their high-productive qualities will be passed on from generation to generation.

Now comes the question, Is such work profitable or possible to the average working poultryman? It means three or four years of careful, accurate, painstaking work. Trap-nesting alone means a great deal of work.

It is estimated that one man can, by all-day work, take care of 400 to 500 trap nests for 2,000 to 2,500 hens.

For the average poultryman whose flocks are not so large it means a much greater expense per hen unit than where flocks are very large. It means that either he or one of his family become restricted to the work

of liberating the hens and recording the eggs laid every two or three hours. It means, during the breeding season, the separate marking of each egg to identify its mother and father, and the continuance of this individual information to the newly hatched chicks. It means an interference with regular routine work and a high quality of accuracy.

Were trap-nesting the only way to improve production, the above method and its painstaking details would be justifiable to every breeder of poultry. But there is a much commoner, simpler, and perfectly sure method which is known and in part practiced by the great majority of poultry breeders. This is the method of selection from appearance for vigor, health, length and depth of body, and the "sense of the laying hen."

An intimate acquaintance with the flock and careful

watching throughout the year will indicate which are the desirable breeders. The ideal should be a combination of the proper shape and size with exceptional vigor and busy appearance.

Practically all 200-egg hens are very long-bodied birds, and this point should be remembered.

Select the bird which has length and depth of body, large red combs, bright eye and erect carriage, which is first to the feeding trough and last to the roost.

To indicate the worth of the above method the writer on this plan once selected 77 breeders from 130 birds. The first 28 birds were selected chiefly for color. The other 49 were selected chiefly for the desire to work and move about, general health and strength, moderate size and length of body.

The 77 selected hens were separated from the others, and the first day outlaid the culls by 63 per cent. They kept the speed up day after day until the writer became satisfied that the selected birds were really better layers, and that this method was O. K.

We must not fail to give the trap nest its place. It is indispensable in experimental and egg-record work, and in the hands of a philanthropist may work a great good to many flocks. Or, if one desires to spend three to four years in securing a pedigreed flock with no immediate returns from his efforts, he will produce an excellent strain of layers which will certainly transmit their high-producing qualities.

Tom Barron has spent twenty-five years of his life in perfecting his laying strains. They transmit with surety now, for they have behind them many generations of heavy-laying birds. But who can say that his methods would have justified themselves alongside of twenty-five years of selection for exceptional strength, vigor, and so forth?

It is obvious that the average poultryman, desiring immediate and profitable results from his breeding selection, has no place for the trap nest upon his farm.

NOTING accounts in FARM AND FIRESIDE of hens that had lived to a green old age leads me to advise you that we have a White Wyandotte hen nine years old that laid 100 eggs in 1914. She also has a trap-nest record of 200 eggs in less than ten months, and score cards from reputable judges score her 95 or better.

It Wins for Me

By W. H. Hobson

For several years we have had our chickens in charge of employees and tenants, and while we knew that No. 2262 (her band number) was spry and active we naturally supposed that her laying days were over; and when last spring we decided to spend the summer on the farm we took her with eleven others, not for the eggs we expected her to [CONTINUED ON PAGE 18]



Rubber Footwear Made Very Much Stronger by a New Patent Pressure Process

The United States Rubber Company has invented and patented a new pressure process for vulcanizing heavy service rubber footwear.

This process greatly strengthens the rubber compound and welds all the pieces of each rubber boot or shoe into one composite whole.

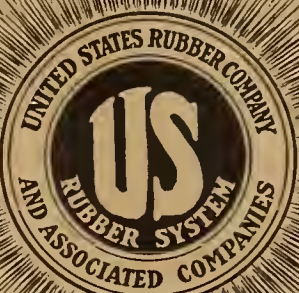
It is where the various pieces join that ordinary boots are apt to first show wear. The new patent pressure process overcomes this. It makes the joints of a boot just as strong as any other part.

As a result boots vulcanized with the new patent pressure process wear very much longer than other boots.

Nearly all reliable dealers sell United States Patent Pressure Process Heavy Service Rubber Footwear. If your dealer has none, write us, telling what kind of boots you wear and we will see that you are supplied. Look for the U. S. seal—insist upon it.

United States Rubber Co., N. Y. City

Look for this Seal



on heavy Rubber Footwear

South Carolina Backs Up

By F. Werber, Jr.

THE article headed "South Carolina Again Secedes" is probably misleading. A more appropriate heading would have been "South Carolina Again Secedes, But Promptly Recedes," as the act of the State legislature referred to by you was repealed, probably during the brief period between the date you printed the paper and the date it reached us.

In October, 1914, it was thought that similar action would be taken by all the cotton-growing States. It was thought that act would lead to diversified farming and would dethrone King Cotton in the South, "a consummation devoutly to be wished for." I have never seen a copy of the act in question, excepting

that which you publish. My understanding of the act as gathered from the South Carolina press, however, is that it was limited to the year 1915.

The recent "Five-Day Governor" of that State, Mr. Smith, is reported as having expressed the wish that the law should not only be not repealed but that it should be re-enacted permanently.

When it was found that the other cotton-producing States were unwilling to "secede," it was recognized that this law in one State alone would have no effect upon the price of cotton, that it would work a hardship upon the citizens, especially the small planters of South Carolina, and the act was repealed.

IT IS true that the South Carolina Legislature passed a law restricting the acreage of cotton which might be grown by the farmers, and that Governor Cole Blease signed it. Now, however, the regular session of the same legislature has repealed the law, and the new governor, Mr. Manning, approves the repeal. The passage of the act is said to have cost the State \$60,000. All of which shows that it's as easy to scare a flock of legislators over a precipice as to do the same thing with a flock of sheep.—Editor.

Ways to Reduce Fire Risks

By George B. Case

THE fire risks that some of us run are appalling. Go out and look around, forgetting everything but the things that are apt to start or spread a fire. Then see if you can't reduce the danger about 500 per cent.

When you are through with this job, stop and think of the things you do right along that are dangerous. See if you can't get along without doing many of them, and try to do the others in a less dangerous way.

About some buildings there is 'loose hay, straw, or chaff. Around others where engines or automobiles are housed, cans of waste, grease, and oil may be found. A spark, a glowing ember, or an overturned lantern in such places will start a fire instantly, whereas a fire would have been impossible if the place had been cleaned up.

A Walking Stick of Dynamite

The inveterate smoker is about as dangerous as a walking stick of dynamite. It makes me shudder to see a man smoking around the farm buildings. One man I know never will forget the way he

was run off the farm when I caught him smoking a cigarette while stacking hay. Another dangerous practice of which the average man is guilty is that of carrying ordinary matches loose in his pockets. He should carry either safety matches or keep the ordinary kind in a metal box.

On most farms the lantern is still the usual light for working about the buildings after dark. A good way to keep it clean and safe is, first, to take out the burners and clean them by boiling in strong soapsuds. This will keep the ventilating passages of the burner working properly. Then wipe all leaking or spilled oil off the base.

String a wire along behind the horses and cows high enough so that no switching tails or a man's head will strike a lantern hung to it.

Put a few short sliding hooks on this wire so the lantern can be hung to throw light wherever needed.

Never set a lantern down; either hold it or hang it up. Then when it is accidentally struck it will swing instead of upsetting.

He is Proud of Allen County

"HOW is your county government?" you ask. I am happy to say that no such conditions exist here as you refer to.

Every bit of the mouey is paid out for the purpose for which it is levied and collected.

There was some change of officers the 11th of January, but the retiring ones had done their duty so faithfully that there was not a hint of suspicion as to their records.

We have over 30 miles of rock road that has been built at intervals of some few years, as the tax money was collected, so that the taxes have not been burdensome. A number of good bridges have been built, and the poor have been cared for.

Yes, dear editor, we are proud of our county government, we are proud of our county—that it is in the State of Kansas, and that Kansas is a part of the United States.

Our people are trying to obey the laws of our land.

We have stamped out the open saloon, and even the bootlegger has very rough sledding. We have put the ballot in the hands of our women, the greatest heroes of our land. It is estimated that at the November election three fourths of the men took their wives with them when they went to the polls to vote. There was none of the old-time rowdyism, and we are thus working hand in hand for the glory of God and the betterment of mankind.

ALVIN T. JONES.

The Wood Pewee—By H. W. Weisgerber

MOST of us are acquainted with some Aunty Doleful who always goes about the neighborhood wearing a long, sorrowful face, and having a sad and mournful voice, telling of the dreadful things that may happen to us; or, if we are sick, how Tom So-and-so died with the same disease, and he was not nearly so sick. Aunty is never cheerful, and she thinks that she must keep everyone else in the same sorrowful state of mind. And since we have such aunts in the human family it is not at all surprising that there should be a few in the bird world also. And that



is what this small member of the fly-catcher family is—a sad and melancholy bird, if we were to judge it by its notes.

The pewee is one of our most common summer birds, and is to be found in open woodlands, shady waysides, and in orchards. The plaintive notes of "pe-ah-we, pee-wee" can be heard all day long.

In fact, the bird never seems quiet, unless it is in the act of devouring some insect it has caught, which takes but a moment.

It generally perches on the larger, lower limbs of trees, or on dead twigs, from which there is an unobstructed view.



Maxwell

The Car that Laughs at Hills

The Maxwell is the car in which "Wild Bill" Turner made the world-record climb up Mt. Hamilton to the famous Mt. Lick Observatory.

The Maxwell is the car that Billy Carlson drove 9 miles up Mt. Wilson, Cal., over snow and ice, around sharp, dangerous curves, climbing 6,000 feet in 29 minutes and 1 second, breaking the previous record of 42 minutes. These are but two of the Maxwell stock car hill climbing records.

Every man that owns a Maxwell is able to laugh at hills.

The "1915" Maxwell has 17 new features, and it is a beautiful car—a powerful car—an easy riding car—and a car that is fully equipped. Its light weight makes it very economical to operate.

The "1915" Maxwell is one of the easiest cars to drive. It has an adjustable front seat which may be moved three or four inches backward to suit the driver's leg length.

If you want a car of ample power to climb hills with speed and pull through heavy going, this is the car.

The Maxwell Dealer nearest you will show you the "1915" Maxwell

Maxwell Five-Passenger Touring Car, \$695.	In Canada, \$ 925.
Maxwell Roadster, - - - - - 670.	In Canada, 900.
Maxwell Cabriolet, - - - - - 840.	In Canada, 1,105.

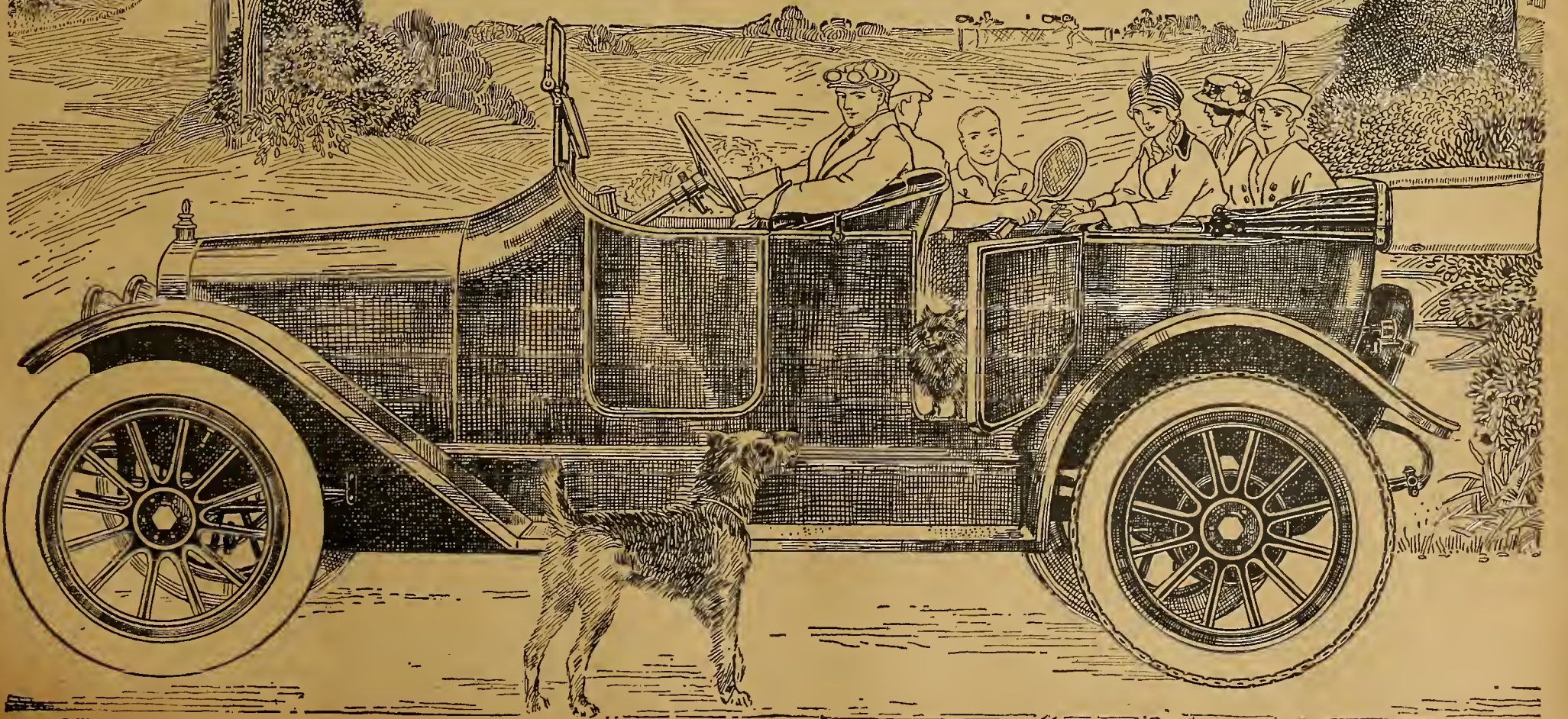
Any model equipped with electric self-starter, \$55 extra. In Canada, \$70 extra.

Write for illustrated catalogue. Address, Department A.G.

The Maxwell will be exhibited at the Panama-Pacific Exposition

MAXWELL MOTOR COMPANY, Inc., Detroit, Michigan

"Every Road is a Maxwell Road"



EDITORIAL COMMENT

FARM AND FIRESIDE

The National Farm Paper

Published every other Saturday by
The Crowell Publishing Company, Springfield, Ohio

YOU'RE on the jury. Ever realize how many decisions of different kinds you make even in a day? And we know you like fair play.

So when you see any opinion advanced or statement made in **FARM AND FIRESIDE** that seems to you unfair or biased, speak up and say "Fair Play!" This issue, and every other issue, is open to criticism or approval in more than half a million homes besides your own. It's so easy to condemn on appearances. Give us your views and reasons on the other side if you think only one side has been given. Even if you have only something nice to say, send it along.

HERBERT QUICK, - - - - Editor

March 13, 1915

Our Daily Bread

WHEN it is proposed that the exportation of wheat be forbidden, whatever we may think of it we should try to understand just what sort of a proposal it is.

Stripped bare it means that the American wheat industry shall be saddled with the support of the paupers of the cities—so far, at least, as bread is concerned.

The Price of Meat

MEATS have been going up. The prices of feedstuffs have been going up. But live-stock prices have actually gone down, and in the case of hogs have fallen nearly a third. Either because they couldn't or wouldn't the packers have not supported the market in such a way as to give the growers of stock the benefit of the increased prices in feeds and meats.

It is possible that with feeds going up and disease threatening the flocks and herds the rush of animals to slaughter was more than the market could stand, but the effects of such conditions are inevitable.

The decline in cattle in the live-stock holdings of the country which has taken place in the last dozen years or so resulted from an era of bad market conditions in which the great buyers of live stock, with their cellars full of meats, were unable or unwilling to support prices, and the stockmen in great numbers went out of the stock business because it did not pay.

They are quitting now because they feel the same way.

They may be making a mistake, but the discovery of a mistake will not restore to their yards the animals which might have been kept for finishing and for breeding purposes. The live-stock business is one which rises in long, slow waves, and falls in short, sharp ones.

It takes time to get into it. Getting out is a quicker process.

It was on the up-grade when the war and the foot-and-mouth disease struck us. It will probably be found to have slumped when the clouds roll away.

The Cost of Rum

DAVID LLOYD-GEORGE, British Chancellor of the Exchequer, stated recently in Parliament that the productive power of the people of Russia has been increased to the extent of from 30 to 40 per cent by the adoption of prohibition in Russia since the war began.

This is the most impressive statement of the cost of the liquor traffic which we remember to have seen.

It means that by eliminating the alcoholism of the people the nation is producing more

wealth with its enormous armies on the fighting line than the same people produced when everybody was supposedly engaged in the labors of peace.

In other words, vodka was worse than the war.

Education That Pays

MCLEAN COUNTY, ILLINOIS, has a farm adviser with a salary of \$4,000 a year. It is safe to say that the county superintendent of schools of that county is getting not more than half that sum.

Both are educators.

The one is telling the farmers things they should have been taught in school—important matters too. The other is earnestly trying, we have no doubt, to prepare the farm boys and girls for college. Three out of a hundred will go to college.

When the county superintendent takes over the work of the county adviser, teaching the grown-ups as well as the young people, he will be better paid. His work will be worth more.

When the rural teacher takes over the same work in her district the people, seeing the value of the work, will be glad to pay more for it.

On the average the schools are not worth a cent more than they cost.

Sensible Tax Laws

THE constitution of Nebraska allows the exemption from taxes of fences and growing forest and fruit trees. Iowa used to exempt lands planted in trees—and may do so still. The idea is to encourage a certain kind of improvement. Undesirable "improvements," like billboards, are often discouraged by taxes. All over Iowa are groves of trees. On the farms of the States formerly covered with forests there are often actually fewer forest trees than in Iowa, where the country was treeless.

Taxes on improvements blight improvements. Once a ruler of Egypt levied a tax on date trees, thinking that he would reap a large revenue. The result was that the date trees were cut down, and the ruler got no taxes. If he had taxed lands just the same, whether planted or not, he would have encouraged the planting of dates and discouraged the holding of idle lands.

In North Dakota taxes cannot be increased merely because the land is plowed. In Saskatchewan the farmers regard all improvements and personal property as North Dakota regards plowing, and a farm with twenty dollars an acre of improvements and equipment is taxed just the same as one of equal bare-land value with no improvements at all.

They think in Canada that it is a good thing to encourage all improvements, just as North Dakota encourages plowing and Nebraska encourages fences and trees.

Loyalty to Our Nation

THE great French peace advocate, Urbain Gohier, is one of many thinkers who believe that the present war is only the beginning of a series of wars.

"The international and social questions which the present war is going to raise," says he, "are too numerous, too complex, to be settled beyond appeal and irrevocably by any diplomatic agreements whatever."

Let us hope that these views are mistaken ones, for with every month of the war's duration the position of the United States becomes more difficult. Both sides are trying to enlist partisans among our citizens. Both sides are more or less successful.

If the United States is to be kept at peace with the world we must forget our European ancestry and think only as Americans. If we look to Berlin or London or Paris or Petrograd for our leadership, we shall be walking a perilous course.

Who's Loony Now?

A FEW years ago someone made the statement that insanity was more prevalent in rural communities than in the cities and towns. Everybody has believed it and tried to account for it.

It was "loneliness."

It was the hard work imposed by the farm on the farmer's wife.

It was a dozen things.

And now we discover that it was a lie.

The News Letter of Ohio State University calls attention to the fact that according to the census of 1910 the number of persons admitted to institutions for the insane out of each 100,000 of farm people is 41, and for the cities and towns 86, and adds: "It is, therefore, now the farmer's turn to ask the urbanites, 'Who's loony now?'"

What is a Pure-Bred Herd?

A MAN familiar with pure-bred dairy herds was asked recently as to their average production a year in butterfat.

"It's hard to tell," said he, "but it's not as high as might be expected when it is considered that the heaviest producers give nearly ten tons of milk a year."

"You see, not all owners of pure-bred herds are good feeders."

"The main reason for the comparatively low average production in pure-breds, however, is that the breeders keep everything."

In other words, breeders of pure-breds do not cull their herds closely enough. Any breed, no matter how good, will deteriorate unless the process of rejecting the poor individuals of the breed is kept up constantly and consistently.

An entry in a registry book will not make an inferior animal good, either for milk or breeding.

Try Out the Fertilizers

A LETTER from a subscriber tells an interesting story of the redemption of a run-down farm. "We did it," says the letter, "without the use of commercial fertilizers."

The victory is creditable, but the winning of it without the fertilizers may or may not be. A captain does not boast of having made a voyage without the use of sail or engine, though he might do it with sweeps or oars. If the fertilizers were needed they should have been used. The victory would have been quicker and easier.

In Codrington County, South Dakota, one would think the soil free from the need of commercial fertilizers; and yet Mr. Palm, head of the Better Farming Association, found last year by tests that cornfields in that county to which acid phosphate was applied were benefited in money, after paying for the fertilizers and labor, to the extent of \$3.19 per acre, and that the crop of the county might have been increased 31 per cent by its use.

The wonderful yields of corn made by Southern boys in their contests have been obtained by feeding the growing crop with commercial fertilizer. These yields have been made at a surprisingly low cost per bushel, too.

The farmers of newer States cannot complacently take the position that commercial fertilizers will not pay. They cannot tell about this until they have tried the experiment. Wherever money can be made by the use of fertilizers they should be used. They are only tools, and to be bought or not on the same reasoning which controls the buying of any other tools. The small plot, the row experiment, the acre test—these are the expedients by which the farmer in the newer regions may ask both his crops and his soil what they need.

World's Records Being Smashed to Smithereens

ALL
BREEDS
ALL
AGES

The Cow
That's Doing It!

And How
She's Doing It!



FINDERNE
HOLINGEN
FAYNE
No 144551

FINDERNE STOCK FARM
Finderne, N. J., Feb. 19, 1915.
The Quaker Oats Co., Chicago.

Gentlemen:—You will probably be interested to know about our Junior 3-year-old heifer Finderne Holingen Fayne, No. 144551. She produced in 7 days 608 lbs. milk, containing 37.33 lbs. butter.

In	Days	Milk (lbs.)	Containing	Butter (lbs.)
In 30	days	2599	milk containing	150.33 lbs. butter
In 60	"	5082	"	290.83
In 90	"	7582	"	436.30
In 100	"	8391	"	482.23
In 120	"	9877	"	565.90
In 150	"	11924	"	687.63
In 180	"	13917	"	798.26
In 221	"	16509	"	945.87
In 251	"	18306	"	1038.90
In 282	"	20115	"	1128.08
In 313	"	21794	"	1224.45
In 331	"	22784	"	1278.00 (Unofficial)

That leaves her 34 days to go from February 18 to complete her test. She has so far beaten all cows of any breed and age in the production of butter, and barring an extraordinary accident we expect her to be at the finish of her yearly test, **Champion Cow of the World, regardless of age or breed.** We have fed your **Schumacher Feed** and your **Blue Ribbon Dairy Feed** as the principal part of the grain ration, and shall continue the use of it until she finishes this wonderful test.

I sincerely hope I will be able to report to you a grand finish for the year which will end March 24, 1915.

Very truly yours,
(Signed) **BERNHARD MEYER.**

THIS

Junior 3-Yr. Old Now Beating All Breeds—All Ages

Wonderful! Amazing! Smash! Crash! Bingo! Down goes every record—of every breed—of every age, broken to smithereens. Words fail to express the astonishing achievement of this World's Champion Junior 3-yr.-old Holstein cow.

Think of it! Up to February 18, with still 34 days to go before she completes her year's test, she has produced 22,784 lbs. of milk, containing 1022 lbs. of fat, or 1278 lbs. of butter. She has already beaten the Junior three-year-old World's Champion by over 200 lbs. of fat and almost equaled the World's Champion record for any age and any breed.

When her full year is up—March 24, 1915—she will have set a most phenomenal World's record for all ages and all breeds and added another link to the strong chain of "convincing evidence" that **SCHUMACHER FEED** is the record-breaking, record-making feed for dairy cows. No other dairy feed can show a list of World's records like these:

Finderne Holingen Fayne No. 144551—the coming Champion of all breeds and all ages. Being fed on **SCHUMACHER FEED**.

Valdessa Scott 2nd—the first 40 lb. cow in the World, made

her record on **SCHUMACHER FEED**—owned by Bernhard Meyer, Finderne Stock Farm, Finderne, N. J.

Johanna De Kol Van Beers—the second 40 lb. cow in the World. Record made on **SCHUMACHER FEED**. Owned by T. Getzelman, Hampshire, Ill.

Sophie 19th of Hood Farm—the World's Champion Jersey. Record made on **SCHUMACHER FEED**. Owned by Hood Farm, Lowell, Mass.

Auchenbrain's Brown Kate 4th—the World's Champion Ayrshire Cow. Record made on **SCHUMACHER FEED**. Owned by Penhurst Farm, Narberth, Pa.

Castlemain's Nancy 4th—the World's Champion 2-year-old Ayrshire. Record made on **SCHUMACHER FEED**. Certainly the owners of these "wonder cows" are mighty particular that the feed they feed during these tests is unquestionably the best obtainable.

ANOTHER BIG VICTORY FOR SCHUMACHER FEED

Schumacher Feed is not a "happenstance" feed. It is the result of the World's most skillful and scientific feed experts—put out by the World's largest feed manufacturers. Back of it is a reputation and a success second to none in the World, all of which helps to account for the startling, astounding records which have been made on this remarkable feed.

You owe it to **your cows** to give them a chance to break their records on this "king of all feeds." You owe it to yourself—to your pocketbook, to try **SCHUMACHER**, especially on the feeding plan suggested below. You have everything to gain—nothing to risk. Here it is:

Take any good high protein concentrate such as Gluten, Oil Meal, Distillers' Grains, Brewers' Grains, Malt Sprouts, or Blue Ribbon Dairy Feed as one-third

of your ration and the balance, two-thirds, **SCHUMACHER FEED**. If cottonseed meal is preferred, use only one-fourth, balance three-fourths **SCHUMACHER**. You will have ample protein with practically no waste and no harmful results, but an ideal ration for dairy cows.

SCHUMACHER FEED is composed of finely ground, kiln-dried products of corn, oats, barley and wheat, scientifically blended to not only produce maximum flow, but to sustain, build up and maintain vigor, reserve power and strong constitutions to stand the heavy strain of long and forced milk production. It keeps cows "in condition"—healthy and productive in both milk and offspring. It is also a splendidly balanced ration for horses and hogs. Your dealer has it—if not, write us.

The Quaker Oats Company, Chicago, U.S.A.

CHILDREN SHOWED IT

Effect of Their Warm Drink in the Morning.

"A year ago I was a wreck from coffee drinking and was on the point of giving up my position in the school room because of nervousness.

"I was telling a friend about it and she said, 'We drink nothing at meal time but Postum, and it is such a comfort to have something we can enjoy drinking with the children.'

"I was astonished that she would allow the children to drink any kind of coffee, but she said Postum was not coffee, but a most healthful drink for children as well as for older ones, and that the condition of both the children and adults showed that to be a fact.

"I was in despair and determined to give Postum a trial, following the directions carefully. It was a decided success and I was completely won by its rich delicious flavour.

"In a short time I noticed a decided improvement in my condition and kept growing better month after month, until now I am healthy, and do my work in the school room with ease and pleasure. I would not return to nerve-destroying coffee for any money."

Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum comes in two forms:
Regular Postum—must be well boiled. 15c and 25c packages.

Instant Postum—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage instantly. 30c and 50c tins.

Both kinds are equally delicious and cost per cup about the same.

"There's a Reason" for Postum.

—sold by Grocers.

I Love the Dog, But Listen

Roving Curs Also Work Havoc Among Farm Poultry

By Mrs. Fred Wolfe

I LOVE a good dog in his place. Our bulldog died last fall from a second attack of "black tongue." I worked with him and fed him like a child, pouring soups down his throat, and brought him through the first time.

When he died from the second attack I shed tears and missed him as a friend.

Here, however, is the other side. For three years I have been breeding fine Indian Runner ducks, calling and improving my flock till I had as pretty and fine a bunch as one would wish to see. The prospect for a good fall and winter trade in eggs was bright. Forty-three of these ducks were hatched in an incubator and raised by hand. Every poultryman knows how much expense and trouble that involved. I stayed at home with them, nursing and caring for them all spring and summer lest some ill befall them.

Dogs Killed My Ducks and Turkeys

One Sunday in the fall the entire family was away, and on returning from church I found that a bird dog, or dogs, had gained entrance to the yard and killed 20 of my choice young ducks, maiming another which died that night, chewed the entire wing off one, and lamed three others.

I could but say, as I saw the dead birds: "My poor little ducks! Would I had been at home to protect you!"

This is not only loss of my time, strength, and feed, but represents to me a great pecuniary loss in the sale of eggs the coming season. They cannot be replaced at \$2 per head, as they were the result of the careful breeding of three years.

I have often read, "Why doesn't every farmer's wife raise a bunch of turkeys?" My first experience, several years ago, was with bronze turkeys.

Early one morning a hired man came running to the house exclaiming in breathless haste, "Mrs. Wolfe, ole Hampton's dogs is er killin' every one of yore turkeys!"

My husband, being too stout to run, handed the gun to the more active Charlie, saying, "Run as fast as you can and

kill every one," and he followed. I will add that these dogs were trained to go out in search of food for their owner.

A few years later I ventured with turkeys again. I raised a beautiful flock of Bourbon Reds. That season a worthless "yaller" dog destroyed over 30 birds, including my breeders and the young of several sizes. This season I have lost 14 by dogs. The dog was so wary that even with careful watching by day and sitting up nights on the lookout for him it was a long time before we caught him.

These turkeys bring me 25 cents for every egg sold, and \$10 per trio of fowls. The ducks bring from \$1 to \$2.25 per head, according to age and quality, and \$1.50 a dozen in hatching season for eggs.

This past summer I had 104 fine Barred Rocks and Buckeye chickens, allowing the young free range. Some worthless dogs belonging to negroes got among the flock, and after a few weeks I had 23 left. A few were hurt in the horse lot, and two or three little biddies died from injuries; but the dogs got the majority of them.

Of course the men shot at the dogs, but how easily they hid in the tall cotton!

Make War on the Roving Dog

Dogs roam by day and night without their owners all over this country, into yards and through fields, doing great harm. What encouragement have we in raising fine poultry just to let dogs eat it?

A man remarked the other day that the common "yaller" cur has more friends than the poor white man.

I hope you will persist in your war on the roving dog until a satisfactory dog law is passed in our loved land.

American Limburger

OVER 63,000,000 pounds of cheese were imported into the United States last year. None of this was Limburger cheese, which is commonly supposed to be imported from Germany. Practically no foreign Limburger has been imported into this country for many years, according to the U. S. D. A. In quality and price, American cheese of the Limburger type long ago drove its foreign rival out of the market. American Swiss cheese also is fully equal in quality to imported Swiss. Many of our cheesemakers are native Swiss.

Brick cheese has always been an American product, although its similarity to Swiss cheese has given the impression that it is a foreign product. The principal imports have consisted of Edam, Gouda, Roquefort, Camembert, and other so-called fancy cheeses. These come principally from France, Germany, and Switzerland. Thus far, the cheese markets have not been greatly affected by the war, nor are they likely to be except for the varieties last mentioned.

"Limburger Cheese Made in America" may sound a little peculiar at first, but it has been true for a long time, and we ought to know what we are eating.

Grazing—A Tonic

By M. Coverdell

DON'T confine the work horses in the stable stalls at night. Early in the season provide for a good-sized lot into which to turn them after they receive their grain and small amount of roughage.

There's nothing in the world to equal grazing as a tonic and general conditioner.

Curry the Cows

By Vernon Young

HARVEY S. BROWN asks, "Why feed six or eight quarts of grain to a lousy cow when four to six quarts fed to one free from lice will give better results?"

Now I ask the question, "Why let a cow or any other animal get lousy?" I have never been troubled with a lousy cow or horse, and I think this is the reason:

Every morning the bedding is raked to the front of the stalls and all that is wet or soiled is thrown out with the manure. The horses and cows are brushed and curried every morning and also every night. We never let the mud dry on the horses, and this prevents scratches. A cow will stand to be curried even better than a good many horses, and, in fact, give no trouble at all after becoming accustomed to it.

When a cow or horse is neglected and allowed to lie in a filthy stall, it will of course get lousy. Keep the stock clean, also the stables, and you will have no trouble with lice.



SHOOT For Fun

NO sport equals shooting for pleasure and health, and shooting practice is mighty useful to a farmer.

Clay target shooting is the school for crack shots.

All you need to form a farmer's trapshooting club is a barrel of clay targets and a



HAND TRAP

Price \$4.00 at your dealers, or sent prepaid by us. Meet on your farm one week, Smith's next, Brown's next, etc.

Write for free illustrated Hand Trap Booklet No. S459, which shows how to throw 40-yd. to 75-yd. targets that fly just like ducks, quail, etc.

DU PONT POWDER CO.

Established 1802 Wilmington, Del.

ROOFING

Why Pay High Prices for your ready roofing when I will sell you roofing guaranteed for 15 years as low as 65c a roll of 108 sq. ft., including nails, cement and full directions for laying. No matter what weight or kind of roofing you want, I can supply you at a big saving, and get the material to you quicker than you can get it from any other house. I sell **Direct from Factory** and if the roofing I send you does not come up to the samples, ship it right back at my expense. I ship from seven big factories so that I can save you freight, which is a big item. If you want to save money, write today for my big roofing catalogue and samples of the roofing I sell—all sent FREE. Free estimates if you send size of roof and mention, light, medium or heavy roofing. We prepay freight. Write today. **W. E. McCARRON & CO.** 2250 Dickey Building CHICAGO

65¢ a Roll

108 Square Feet

FREE! Get this Book "Bigger Cow Profits" Write Postal Today!

If you keep three or more cows, you must know the facts shown in this book or you lose big dairy profits every day. It is the most beautiful, most interesting and greatest money making catalog ever printed on the subject of butter fat profits. Different from others, easier to understand, easier to profit from. Every page a gold mine of valuable information. Send name on postal now—the book is free for the asking.

In it you will find complete descriptions of Maynard Cream Separators—the greatest and most wonderful skimming machines ever built. Quotes prices that never before could be anywhere near the quality or efficiency of the Maynard. Shows how the Maynard skims every drop of milk eight separate times, extracting every trace of butter fat. Tells why the Maynard takes the hard work out of separating cream. Proves that it's the most sanitary, easiest cleaned separator in the world—bar none.



Wonderful One-Piece Aluminum Skimming Device—The Greatest Improvement in the History of Cream Separators

Cleaned in a minute—just rinse in hot water. Made of Aluminum—grease and milk slime do not stick to it. Needs no wiping because Aluminum can't rust and does not retain odors. All in one piece. Can be put back right with your eyes shut. Contrast these advantages with 25 to 45 tinned steel discs and long curved tubes—each disc must be wiped dry and fitted back into exactly where it belongs.

Think how the Maynard skimming device saves work and time twice a day, every day. And think how the Maynard skims to 1-100 of one per cent.—every drop separated 8 times.

Prices Start at \$29.50. 60 Days' Trial—No Money in Advance

Our prices save you \$15 to \$60. Try any Maynard 60 days. Send it back if any other separator in the world compares with it. Write today for catalog and No-Money-In-Advance proposition. Pay only after you try the Maynard 60 days, if you decide to keep it. Send postal now. Address as below—



Charles William Stores New York

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535 Stores Bldg., New York

Sew Anything!
Leather, canvas, shoes, harness, saddles, buggy tops, etc. Any material, any thickness. Myers' wonderful Sewing Awl makes lockstitch, neat, quick, easy. See that seal? It keeps the tension right. Agents Wanted. Big money. C. A. MYERS CO., 6826 University Ave., Chicago, Ill.

MEN WANTED!
We positively teach you at home by mail to earn \$25 to \$50 weekly as Chauffeur or Repairman. Students admitted to positions. Best system, lowest price. MODELS FURNISHED. Write for Free Book. Practical Auto School, 70-A, Beaver Street, New York

Fish Bite like hungry wolves any fish on, if you bait with Magic-Fish-Lure. Best fish bait ever discovered. Keeps you busy pulling them out. Write to-day and get a box to help introduce it. Agents wanted. J. F. Gregory, Dept. 42 St. Louis, Mo

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Free Try-On of these Ever-Wearing Shoes

Aluminum Soles

Lighter than steel and outwears it. Far more durable—more comfortable.

Light-water-proof—rain-proof—snow-proof—puncture-proof. Save \$50 worth of ordinary shoes—protect you from Colds, Rheumatism, Lumbago, Pneumonia.

Racine Aluminum Shoes

Keep your feet warm and dry in slush, mud, snow. Make walking easy. Made in every height from 6 to 16 inches. Every size from 2 to 13. Boys' shoes as well as men's. Prices surprisingly low. Get our Try-On, money-back proposition. Money cheerfully refunded if you are not entirely satisfied. Write today for illustrated Free book, "Aluminum the Sole of Health." Address Racine Aluminum Shoe Co., Dept. 12 Racine, Wis.

A Pay-as-You-Enter Farm

By Chesla C. Sherlock

FIXING up the farm is no longer a vague, hazy dream of the future. I am thinking of a Polk County, Iowa, farmer who has taken the pains to make his place just as beautiful as he possibly can. His particular business is that of raising game birds, turkeys, ducks, and wild geese.

He has utilized every trick of Nature to make his 40 acres of rough, picturesque land as beautiful as possible. The slopes are spanned by rustic bridges, as are also the small creeks and streams.

Rude lodges are constructed in out-of-way places where the visitor can rest



Besides adding to the beauty of the place this bridge is a money-maker

or eat his picnic dinner. Small pools of goldfish under hanging bluffs and in fern-covered corners attract the eye.

Then there is a large pool comprising possibly an acre for the ducks and geese. At one end of this pool is a large dam over which the water falls nearly 25 feet. Beyond that are a succession of falls which add to the beauty of the place, and serve to keep the fish from getting away.

The place is so beautiful and attractive that people are willing to pay 25 cents admission. From this revenue the owner adds new improvements.

It is nearly as easy to make a place beautiful and attractive as it is to let it run to junk.

The Insect Catcher

By Edgar S. Jones

THE American sparrow hawk may be frequently seen perched on a limb or post near a meadow or other grassy field, apparently watching for its prey.

Should a mouse or a large insect appear, this observing bird leaves its perch and hovers over his victim for a moment and then drops to the ground and captures it with his talons. In the early morning or during the late afternoon it flies over the fields and meadows, uttering a shrill cry that sounds like "killy, killy, killy."

On these excursions it will often attack such birds as the sparrows or meadow larks. Should there be a limited supply of insects or rodents, it may capture small chickens, but this is an unusual occurrence.

The sparrow hawk does not spend much time in building a nest, but selects such a place as a hollow in a tree, an opening in a roof, or the forks of a tree. If the pair is not molested the same nesting place is used year after year.

One way of distinguishing this smallest member of the hawk family from the others is to note whether it hovers and beats its wings above certain spots in the meadows and fields in its search for its food.

A better name for this yellow-legged bird would be insect hawk rather than sparrow hawk.

Perhaps You Do

DO YOU know of a farm family who has done something splendid? Something fine? And by the doing of these things or this thing has made farm life more useful to the members of that family and to others?

If you do, write us about it. We shall be glad to know it. We are always anxious that our readers keep us in touch with the community life which they see, and which, of course, it is impossible for the rest of us to see.

Let us hear from you any time. Feel sure that every letter on this particular topic will be of interest to us. Perhaps yours may be the most interesting.

Why I Farm

By a Banker-Farmer

I WAS reared on a farm and learned that farm work was healthy, honorable, independent, and profitable. I enjoy nothing more than to retire on an August night after an evening of farm labor, listen to the sighing of the night breezes sweeping the land, the songs of the night birds, and the drumming of the katydid.

I am president of three big banks, and a director in other institutions which require much of my time. Yet I find plenty of time to put in on my farm, and

at actual work too. At the age of fifty, and after twenty-five years of banking and connections with various other responsibilities, I have no gray hairs to tell tales of worry, and no wrinkles to betray the approach of time. Day after day I have labored over a long column of figures, discussed the money market with my business friends, and attended to other duties in the office in the forenoon, then in the afternoon I have donned a pair of overalls and ridden the plows till sundown.

They Intend to, But They Don't

What a great pity to see young men and young women marching to the city to be swallowed up with thousands of other pieces of human machinery as slaves to big business. There is no way of convincing those unfortunate human beings that they are wrong, until it is too late. A few months away from the old farm, where they do not hear the cowbells or see the great motion picture of real life as pictured in the hundred and one things about the home, they fall eternal victims to false life, and are forever lost to farm life.

Most young people go to town with the idea of some day becoming well-to-do and retiring to the farm. I began business life with a policy to stay on the farm. I live on the farm the year round, and there'll be no retiring from the farm or to the farm.

Can every young man and woman do this? Not exactly. But those that cannot may remain on the farm and save themselves the cost of the awful experiment.

To Paint Galvanized Metal

GEORGE B. HECKEL, secretary of the Paint Manufacturers' Association of the United States, furnishes us the following directions for painting galvanized iron, a thing usually hard to do well:

Apply a wash of 6 ounces of copper acetate dissolved in a gallon of water. This roughens the surface and does no injury to the paint. Red lead is good for priming on such surfaces, but for that purpose should be freshly mixed on the job from the dry material. But a combination of 85 per cent iron oxide paint, free from soluble sulphur compound, and 15 per cent zinc oxide ground together in oil with the necessary drier is also good and much cheaper.

Theoretically, when metal is galvanized, it is supposed to resist rust and corrosion, but in actual practice the forces of nature knock out this theory. Paint lengthens the life of galvanized metal just as it does of wood and other perishable building material.

A NEW swine disease known as "purple fever" has appeared in Ireland near Dublin. It appears to be a form of swine erysipelas, and no successful remedy for it has yet been found.

Big Ben

Made in La Salle and Peru, Ill., by Westclox



A Self-Starter for the Farm

For an early call that fills the fields on time—for early yields that fill the bins—

For a business-like farm system that gets things done on time and according to plans—**Big Ben.**

He has two calls—a straight five-minute ring or ten gentle half-minute reminders to bring you out gradually.

If not found at your jeweler's, a money order to his makers, "Westclox, La Salle, Ill.," will bring him postpaid—\$2.50 in the States; \$3.00 in Canada.

If a horse could talk—or a sheep



"Thank you boss, I feel fine after that hair cut"

"I've just had more wool off me than ever before"



Clip Before the Spring Work Begins

Horses and Mules will be healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed, they are more easily kept clean, look better, get more good from their feed and are better in every way. If you want to sell them they will bring a higher price. The best and most generally used clipper is

The Stewart Ball Bearing Clipping Machine

It turns easier, clips faster and closer and stays sharp longer than any other. Gears are all cut from solid steel bar. They are enclosed, protected and run in oil; little friction, little wear. Has six feet of new style easy running flexible shaft and the celebrated Stewart single tension clipping head, highest grade. **Get one from your dealer or send \$2.00 and we will ship C. O. D. for balance. Money and shipping charges back if not satisfied.**

CHICAGO FLEXIBLE SHAFT CO.
134 N. LaSalle St., Chicago, Illinois

Write for complete new catalog showing world's largest and most modern line of horse clipping and sheep shearing machines, mailed free.

PRICE \$750

Get All The Wool and a longer, better grade that will bring the highest price. You can easily net from 15 to 20 percent more on every sheep you shear with a

Stewart No. 9 Shearing Machine

It is the most perfect hand operated shearing machine ever devised. Has ball bearings in every part where friction or wear occurs. Has a ball bearing shearing head of the latest improved Stewart pattern. Complete, including four combs and four cutters of the celebrated Stewart quality \$11.50. Get one from your dealer, or send \$2 and we will ship C. O. D. for balance. Satisfaction Guaranteed or Money Refunded.

Price \$1150

THE AUTO-OILED WINDMILL WITH DUPLICATE GEARS RUNNING IN OIL

Every bearing is constantly flooded with oil. Two quarts of oil in the gear case of this 8-foot auto-oiled windmill will keep the gears and every bearing flooded with oil for a year or more.

The galvanized steel helmet covers the gears, keeps out rain, keeps out dust, keeps in oil. The mill needs oiling but once a year.

There is a windmill, known the world over as "the windmill which runs when all others stand still." This new windmill with gears and bearings flooded with oil runs in much less wind than that well known windmill.

The two large gears, which lift the load straight up, are each independent of the other and each is driven by its own pinion on the main shaft and must take its half of the load at all times.

The auto-oiled windmill, with its duplicate gears and two pitmen lifting the load straight up, is unbreakable. Every 8-foot mill is tested under a pumping load of 3000 pounds on the pump rod. For the larger sizes the load is proportionately greater. We know that every one of these windmills is unbreakable. We venture the assertion that this is the most nearly perfect, best made, best tested, best oiled, most nearly perpetual, automatic and self-sufficient of any machine of any kind ever made for farm work and the most nearly fool-proof.

There is no friction on any part of the furling device when the mill is running and very little when the wheel is furled.



A small child can easily furl this windmill or an automatic regulator can take care of it. One of these mills has been furled 10,000 times in one day by a man on our premises—more times than it would ordinarily be furled in 30 years of service.

A band brake, of the automobile type, is used, and it always holds.

The gear case contains two pairs of gears and the supply of oil. From this gear case the oil circulates to every bearing in a constant stream. It flows out through the friction washers in the hub of the wheel and is automatically returned to the gear case. Not a drop of oil can escape. It is used over and over. So long as there is any oil in the gear case the gears and every bearing will be flooded with oil.

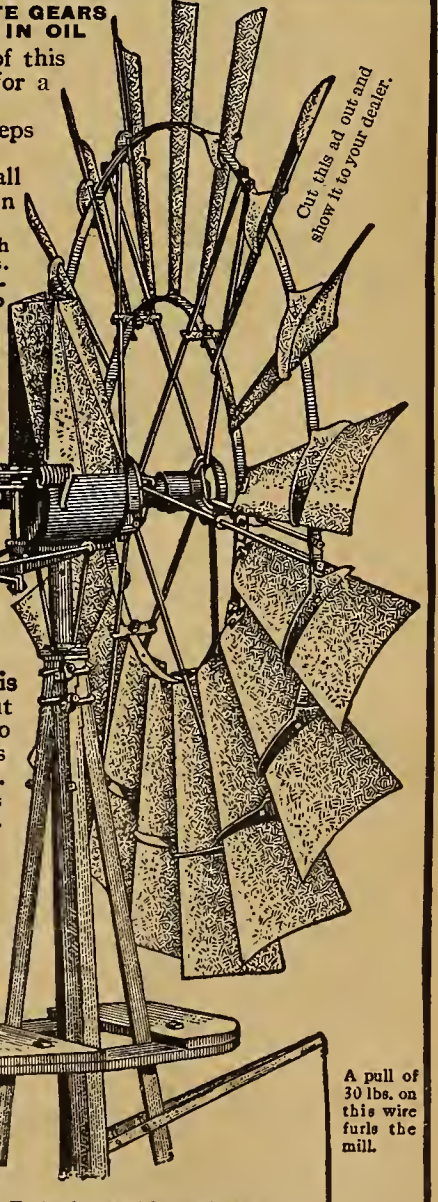
If you are tired of climbing a windmill tower; if you are tired of buying repairs and having them put on; or, if you are tired of waiting for a big wind, let us furnish you an unbreakable, self-oiling, ever-going mill to go on any old tower. It costs but little and you will get the difference between no water in a light wind and an abundance of water in almost no wind. The flooding of all the working parts with oil, the perfect balance of the wheel and vane on the tower, the very small turntable on which the mill pivots and the outside furling device make this difference.

Now there is no objection to a high tower. Have as high a tower as you need to get wind. You don't have to climb it. Your dealer can come once a year and put in oil, if needed, and inspect the mill.

Running water purifies itself—stagnant water, standing water, collects and retains impurities. If you pump from your well constantly all the water it can spare, the water that comes in to take its place will be pure. If the water in your well stands until you happen to want some, and you pump but little, then it is likely that surface water will flow into it and carry in impurities. The unsafe well is the one that has standing water. A flowing stream is the thing to be desired.

The auto-oiled windmill makes all this possible as it can run from one year's end to the other with practically no wear and no cost. If interested, write Aermotor Co., 1146 So. Campbell Ave., Chicago. Why not have flowing water, cool in summer and warm in winter, always fresh and pure? It will cost next to nothing. It will give health to your family and stock. Let the water run into a good size reservoir and raise all the fish of the choice kinds your family can eat, and have water to irrigate your garden and make it raise many times as much as it would otherwise. Water costs nothing. Use it. To let it stand is to abuse it.

We need and must have the best dealers everywhere. They need us if they are going to remain in the windmill business. Write right now.



Get this ad out and show it to your dealer.

A pull of 30 lbs. on this wire furls the mill.

FOOD QUESTION

Settled with Perfect Satisfaction.

It's not an easy matter to satisfy all the members of the family at meal time, as every housewife knows.

And when the husband can't eat ordinary food without causing trouble, the food question becomes doubly annoying.

An Illinois woman writes: "My husband's health was poor, he had no appetite for anything I could get for him, it seemed.

"He suffered severely with stomach trouble, was hardly able to work, was taking medicine continually, and as soon as he would feel better would go to work again only to give up in a few weeks.

"One day, seeing an advertisement about Grape-Nuts, I got some and he tried it for breakfast the next morning.

"We all thought it was pretty good although we had no idea of using it regularly. But when my husband came home at night he asked for Grape-Nuts.

"It was the same next day and I had to get it right along, because when we would get to the table the question, 'Have you any Grape-Nuts' was a regular thing. So I began to buy it by the dozen pkgs.

"My husband's health began to improve right along. I sometimes felt offended when I'd make something I thought he would like for a change, and still hear the same old question, 'Have you any Grape-Nuts?'"

"He got so well that for the last two years he has hardly lost a day from his work, and we are still using Grape-Nuts."

Name given by Postum Co., Battle Creek, Mich. Read, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Kearney Bolster Springs
 RACINE
 make any wagon a spring wagon. Prevent damage to eggs, fruit, etc., on road to market. Soon save cost—produce brings more—wagon lasts longer.
MADE LIKE FINEST AUTO SPRINGS
 Very resilient and durable. The standard springs of America since 1889. 40 sizes—fit any wagon—sustain load up to 5 tons. If not at dealer's, write us. Catalog and list of proof free.
 MARVET SPRING CO., 729 - 17th St., RACINE, WIS.
GUARANTEED

STOP WASTE LABOR
 Don't waste labor by lifting a load into a wagon bed 4 feet from the ground. Lift only 2 feet by equipping with low—
EMPIRE STEEL WHEELS
 Far stronger than wooden wheels. Cannot rot or bow. NO BREAK-DOWNS. No repair bills. Life savers for horses hauling over muddy roads and soft stubble fields. Satisfaction fully guaranteed or money back quick. Write today for 30-Day No Risk Trial Offer.
 EMPIRE MANUFACTURING CO. Inc. 688 QUINCY, ILL.

A City Man at Farming

The Successes and Failures of His First Few Years' Work

By G. K. Pimley

Backing Toward the Land

MR. PIMLEY shows that he is making very little from his farming operations, and has to do work on the side to make a living. But that is one way to get back to the farm. He is learning, and he had one important lesson to teach many of us—he keeps a record of

his expenses and receipts. If he keeps on applying business principles and learning how to handle his land and his stock, one of these days he will be able to tell us that he has made his farm give him a profitable all-the-year-round job.

IN JULY of 1912 while on a flying visit to a country village in the foothills of the Adirondack Mountains, I noticed some cleared land which could be purchased at a low cash price. It was hilly and rocky, but would make an excellent sheep pasture.

Those of my friends who felt close enough to me called me a fool for buying a "hillside full of stumps and no trees." There are over 2,000 pine and hemlock trees on the place, some of which can be marketed in a few years.

In October of the same year I spent two weeks on a near-by farm looking over my piece of ground and wondering what I could do with it, and while so doing I found that I could purchase an adjoining piece of from two to five acres—mostly woodland—for a nominal sum.

In 1913 I had great expectations, but was so busy erecting a small house and setting out an apple orchard of over 200 trees that the summer was upon me and gone before I knew where I stood. So, to make a go of things, I returned to New York City in September and settled down to business.

I determined to start early for my "farm," as I now called it, to see what could be done. So April 7, 1914, found me at my destination looking at two feet of snow which covered the ground.

Plowing was out of the question, but must soon be done.

I had no horses, nor money with which to purchase same, so hired another man to do the work as soon as the snow melted and the frost left the ground. It was not until May that this work was done, and then I set out to plant corn, potatoes, and vegetables in my plowed piece.

My neighbors laughed because I charged up my time as though it were that of an outsider, but in that way I was able "to keep track" of my profits.

Early in May I purchased five sheep and two lambs for \$25.

In June I sheared them, sold the lambs in August at \$4 each, butchered two

ewes in October, and sold the balance of my sheep in November, clearing \$7.33 on the original investment as follows:

DEBIT	
5 sheep, 2 lambs	\$25.00
Shearing same50
	\$25.50
CREDIT	
28 lb wool @ 21c	\$5.88
2 lambs @ \$4	8.00
2 ewes, 78 lb	8.45
1 huck, 2 ewes, @ \$3.50	10.50
	32.83
Net gain	\$7.33

My neighbors warned me against pig-raising, but I was determined to do my best, even though I lost on the venture.

On June 15th I purchased three Chester White barrows and started feeding them scalded milk and scalded middlings, the milk costing 6 cents a quart, and buttermilk 2½ cents a quart.

Some of the neighbors claimed I'd kill my pigs with scalded milk and grain, and one thought the pigs should be taken from me because I did not have a cow, but I kept on with my work, and by August had three nice, fat, solid-flesh pigs which were then getting meal, middlings, milk, swill, and boiled potatoes.

The price of grain jumped to \$1.95 a hundred, and I knew my expenses would not be much below my receipts. In fact, as butchering time came around my "Job's comforters" advised me to look for a loss of from 50 to 60 per cent.

The pigs were butchered the day before Thanksgiving, and dressed 374 pounds, bringing \$47.85 and netting \$3.89 on my investment. Not much in dollars and cents, but when one considers the experience I have gained for next year, and the advantages to be derived therefrom, I am far ahead.

And then, too, a city man, an amateur!

Cost of pigs and expense of raising:

DEBIT	
3 pigs @ \$3.50	\$10.50
Middlings	6.70
Corn meal	17.78
Milk and buttermilk	4.98
Butchering	4.00
	\$43.96
CREDIT	
363½ lb pork @ 13c	\$47.25
10½ lb livers, etc.60
	47.85
Net gain	\$3.89

Apples, acorns, and skim milk were to be had for the asking during September, so the pigs had all I could procure, with plenty of acorns from my own place.

To support myself during the spring and summer I gathered eggs, candled, and shipped same to my home town, and received 3 cents a dozen above market prices. I received enough by this means to pay all bills and have something left besides.

I also worked on my own sheep fence, which was erected with the help of my next-door neighbor, whom I paid by working in his hayfield and cider mill.

My potato crop was almost a failure, too many bugs escaping the Paris green sprayed on the plants two and three times a week. Corn, beans, and vegetables were excellent (and without manure or commercial fertilizer), so that my table did not lack. I cleared a little over \$150, and had my living out of the place for eight months.

Why 10,000 People Die

THE secretary of the Railway Business Association is sending out a circular that tells why people shouldn't walk railroad tracks. The main reason is a very good one: 10,000 persons are killed or injured in this country every year, deaths and injuries being nearly equal. A third of the number are children. American tourists who innocently stray upon the rights of way over in England are surprised when they find themselves grabbed, hustled before a judge, and fined.

It seems drastic, but strong-arm methods of that kind have kept the casualties down to a twentieth of what they are in the United States.

We seem to be proud of our inalienable right to get killed.

Practical PUMPS
Permanent — 300 styles — one for every purpose: hand, power, single-acting, double-acting, force, lift; for shallow wells, deep wells, cisterns, etc. Backed by 65 years pumpmaking experience.
 Our service Department helps you select right pump or system — free. Our free book, "Water Supply for the Country Home" fully describes
THE GONDS MFG. CO.
 Main Office & Works
 Seneca Falls, N. Y.
 BRANCHES:
 New York
 Boston
 Chicago
 Houston
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Easy on Man and Team
 THE David Bradley Disc Harrow possesses every good point a reliable harrow should have, many of them exclusive Bradley features. Built to last and save wear and tear on man and team. 27 styles and sizes. Prices \$15.95 and up. Get acquainted with this excellent implement today. Send for our special Disc Harrow Offer. It will interest you.
Sears, Roebuck and Co.
 Chicago

Handy Wagons
 Save High Lifts
 Built low—wide tires prevent rutting—light draft—save work and repairs. Write for free catalog of steel wheels and wagons.
Electric Wheel Co., 13 Elm St., Quincy, Ill.

You Can't Beat Galloway Prices and Quality
My New Low Down No. 8 Spreader with cut under front wheels and trussed channel steel frame is positively the best spreader in the world. Light draft, endless apron, positive force feed, double chain drive. Just ask for my book, "A Streak of Gold," FREE, and I will tell you the truth about manure spreaders and how to get the greatest profit out of your manure products.
New Sanitary Cream Separator
 I will send it anywhere in the United States without an expert to set it up to any inexperienced cream separator user.
Spreaders \$64.75 up.
 for a 90-day free trial, to test thoroughly against any make of separator that even sells for twice as much and will let you be the judge. Built up to a high standard and not down to a price. Travel 20,000 miles, look over every factory in the world and you can't find its superior at any price. It's the most sanitary, most scientific, cleanest skimmer, the most beautiful in design of any cream separator made today and I have seen them all. A postal gets our big free Separator catalog and 1915 sliding scale, profit-sharing price schedule.
GALLOWAY MASTERPIECE BIG 6 Positively supreme in power, simplicity and design. All our years of engine building are built into it. A mechanical masterpiece. Long life and satisfaction to engine users are built into every one of these Galloway Masterpiece Big Six Engines. Great volume, perfected design and simplicity are what make this price possible. A heavy weight, heavy duty, large bore and long stroke engine not overrated. Get right on engines before you buy. Get my free engine book before you buy an engine at any price.
Wm. Galloway, President, The Wm. Galloway Co., 397 Galloway Station, Waterloo, Iowa

"I tell my customers that J-M Responsibility goes with J-M Roofing long after I'm gone"
 (Signed) Charles H. Wheelock
 Battle Creek, Mich.
 This contractor would not risk his local reputation by such an endorsement, did he not have perfect confidence in J-M Responsibility.
Your Roof is Our Responsibility
 —because a J-M Roof, when registered with us, is permanently in our care—backed up by over half a century of recognized business integrity.
 No matter what kind of roof—house, barn or shed—J-M Responsibility stands under it to the last. We won't let you be dissatisfied with J-M Roofing. It must be right.
 J-M Responsibility is stronger than the guarantee of materials we give you—better than any "scrap of paper" ever signed.
 J-M Roofing on your roof makes it our roof, too. We see to it that it makes good to you—that its service to you serves our reputation.
 J-M Asbestos Roofings are examined by Underwriters' Laboratories (under the direction of the National Board of Fire Underwriters.)
 We want every buyer of J-M Roofing to register his roof with us. Then we can see that you get J-M Roofing Service rendered from your roof, as thousands of other J-M roof owners are getting it from their roofs.
J-M Transite Asbestos Shingles
 Fire- and weather-proof, last forever.
J-M Asbestos Ready Roofing
 Weather-proof, fire retardant, needs no painting. First cost only cost.
J-M Regal Ready Roofing
 "Rubber-Type" roofing for general purposes.
J-M Roofings for Every Requirement
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 Write us about YOUR Roofing Requirements. We can help.
H. W. JOHNS-MANVILLE CO.
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Saving Sixty Dollars

Not Once, But Every Time a Bushel of Corn is Planted

By Harlan Deaver



One good way to remove kernels without damaging them

SEED corn that will germinate 100 per cent is worth \$60 a bushel more than seed corn that will germinate only 75 per cent.

The 100 per cent seed corn can be secured only by the use of a germinator, or tester as it is very frequently called. Corn can be tested for not to exceed 60 cents a bushel.

On the average a bushel of corn will plant 8 acres. If each acre produces 60 bushels of corn, which is only a good yield in the corn belt, and it is worth 50 cents a bushel the corn from eight acres will be worth \$240.

The difference between 100 per cent and 75 per cent of that amount is \$60, which represents the difference in value of the two bushels of seed being compared.

Of course this does not take into consideration any other factors such as insects, infertile soil, lack of moisture, and other climatic conditions which would tend to lessen the yield.

Poor Seed Can Never Grow Good Corn

If poor seed is planted the yield is sure to be small; but good seed, if nothing else prevents, will produce large yields.

According to the U. S. D. A. approximately fifteen million bushels of seed corn are planted each year. Twenty per cent or from two to three million bushels does not grow.

If this corn had been tested the poor corn could have been used for feed at a saving of from a million to a million and a half of dollars.

Twelve large ears of corn will plant an acre.

If one of the ears failed to grow there would be a loss of at least \$2 on the yield of an acre of corn.

This ear could have been tested and thrown out for six tenths of a cent.

From past experience I have found that each ear should be tested separately. By taking 200 or 300 grains at random from a pile of seed ears I can get the average per cent of germination, but I would have no way of determining which ears germinated and which did not. If instead I take a number of grains from each ear and number the ear to correspond with the number of the square in the germinator in which I place the grains, I can find the weak or dead ears and throw them out.

I have seen ears of corn that were almost perfect in shape, type of kernel, and color which proved to be weak in germination.

Appearance only aids in testing seed corn; the germinator does the rest.

In 1912 I gathered seed corn at three different periods.

Three Kinds of Corn

First, I gathered the seed ears from my breeding plot. This was done early in October before the early frosts.

Second, as I gathered the crop from the general fields I saved more seed in case I should need it. This corn had been frosted in the field.

Third, as I fed the corn out of the crib I picked out more good-looking ears, as it was evident by that time that there would be a scarcity of good seed.

The corn from the three different gatherings were kept separate.

I began testing this seed in March. The first germinator was filled with grains from ears that had been gathered at the three different periods.

The corn that was gathered early in the fall tested 99 per cent good; that gathered at corn-picking time, 67 per cent; and that picked out of the crib, 33 per cent. None of the latter was saved, but the other was all tested and the poor ears were thrown out.

I use a home-made crate germinator. It is 4 feet long, 1½ feet wide, and 2 inches deep. It is made of light-weight, thin lumber, all but the ends and the partitions, which are made of ¾-inch boards.

The partition is put across the center to strengthen it.

The top is divided into spaces 1½

EW

inches square. This was done by sawing down half an inch at each 1½-inch space along the sides and ends. Galvanized wire the size of bailing wire was strung through these notches, lengthwise and crosswise of the germinator.

The wires are woven in; that is, underneath one wire, over the next, under the next, and so on. This holds the wires firm, and they stay in place.

The squares are numbered from 1 to 264. The numbers of the outer row of squares are marked on the sides and ends of the crate. The number of any of the inside squares can be determined by counting in.

The Tester Tells the Story

The crate is first filled, level with the wires, with sawdust, and the grains of corn are placed on the sawdust. Some authorities advise boiling the sawdust, before using, to kill the molds and fungus spores.

I extract six grains from each ear of corn by the following method: I hold the ear of corn in my hand with the butt of the ear toward me and the thumb and forefinger grasping it at the center.

With a pocket knife I pry out a grain about 2 inches from the butt.

Revolve the ear one fourth way to the right and extract a grain from the center.

Give it another quarter turn to the right and take a grain from within 2 inches of the tip.

Without revolving it I take another grain from near the butt.

Turn it again one fourth way to the right and extract another grain from the center.

After another quarter turn to the right



Note the numbered cardboard on the butt of the ear. This corresponds to a square in the tester

take the sixth grain from near the tip.

By this method the grains are taken from opposite sides at three different parts of the ear. I put the six grains in one square of the germinator and number the ear to correspond with that of the square.

Two persons can fill a germinator to better advantage than one.

One person can extract the grains while the other numbers the ears.

A 264-ear germinator can be filled in four hours by two persons.

The ears are tagged by driving a small nail through a piece of numbered cardboard into the butt of the cob. The ears can be ricked up with the butts all one way if a lath is laid on the tips between every third and fourth layers. The lath keeps the courses level.

Before the corn in the germinator is wet it should be covered with a cloth to prevent the grains from being displaced. After the sawdust has become thoroughly soaked with warm water the cloth should be covered with oilcloth to prevent evaporation. There is little danger of getting the sawdust too wet, as any surplus water will drain away.

The corn will germinate best if kept at a temperature of 77 degrees Fahrenheit. I keep my germinator over a furnace. The heat, then, is applied at the bottom and gives good results. The corn will germinate enough to count out on the fourth or fifth day.

When I count out the germinated grains I am careful to notice whether there is a good root and sprout to each grain.

If corn does not germinate strongly under such favorable conditions as these, what would be the outcome if it should be planted in the field under less favorable conditions?

Ears whose grains do not grow when tested should be thrown out for feed.



In this germinator (only a part of it is shown) the kernels were laid on cloth. It is easy to see which ears were dead. Ears numbers 7 and 12, to play safe, should also be thrown out

Those that show a weak germination should also be thrown out.

If all but one or two grains from one ear germinate strong, and these do not germinate at all, it would be well to study that ear to find out the probable reason for the difference. Possibly the tip broke off when the grain was extracted from the ear, thus exposing the germ, in which case it might rot, or possibly some portion of the ear has been damaged while the remainder is good. The good part can be saved and the poor part thrown aside, if seed corn is scarce.

By the time 3 or 4 bushels have been tested you will find it a pleasure and not a task to test seed corn.

You Can Kill the Beetles

IF WE could kill off all the June bugs, or May beetles, we should have no white grubs.

Each female beetle lays between fifty and a hundred eggs, each of which is pretty likely to hatch into a grub to feed on corn roots, grains, strawberries, and the like.

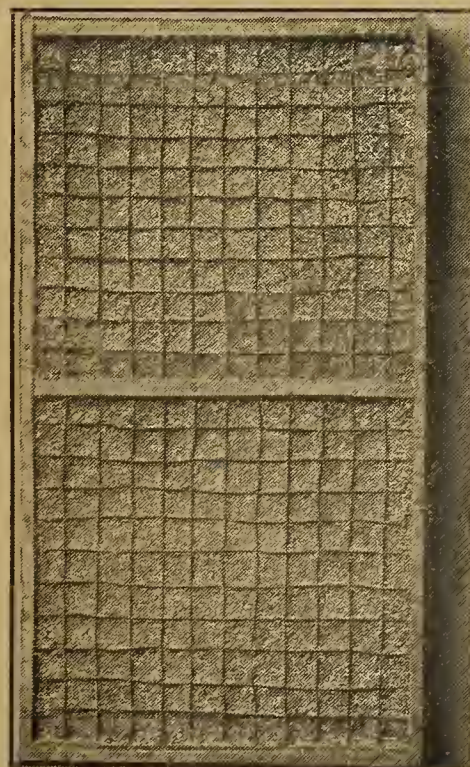
There are three well-known ways to kill the beetles.

One is to spray poison on the leaves of the trees on which they feed.

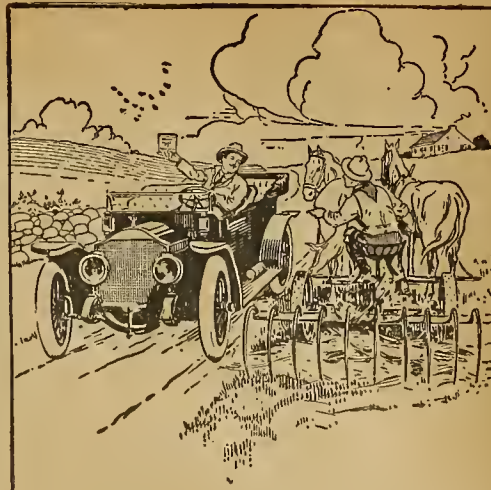
The second is to spread sheets, tarpaulins, or canvas under the trees, and jar the beetles down with a battering ram made of a plank with a cushion on the end—similar to the scheme for collecting the curculio.

The third takes advantage of the beetles' fondness for a lamp at night. Hang an ordinary barn lantern over a tub of water on the surface of which is a film of kerosene.

The latter plan seems most promising, as it induces the bugs to seek their own destruction. They fall into the oil when trying to do whatever they try to do to the light.



Mr. Deaver used this tester. In only four hours he and another man filled it with kernels from 264 ears of corn



"Thought you lost your automobile when your barn burned."

"Nope, only the finish. The heat took that."

"It doesn't look scorched to me."

"Sure it don't. I painted it."

"You didn't do that job, Ned. That's factory work."

"Factory nothing. I bought a can of Sherwin-Williams Buggy and Automobile Paint and a 30 cent brush and this is the result."

"Well, I wouldn't believe it. Did you do the varnishing too?"

"This is a varnish paint. Do it all at once. Best stuff I've struck. Wait till you see my old buggy. I'm working on that now."

"Sherwin-Williams—I've noticed their advertising. Does Hank Simpson sell their paint?"

"Yes, Hank has a good line. Where you going with the rake?"

"Taking it into the shop. The rust got at it last winter and put it on the blink."

"Reckon it will cost you \$10.00 to have it fixed."

"All of that."

"Thirty cents worth of Sherwin-Williams Implement and Wagon Paint and an hour's work would have saved you that ten."

"Somehow I overlook those little things."

"They are big things. They save your property and in that way they earn."

"Your advice is good. I'll take it."

"Good. But take it all. It isn't enough to paint. You must use the right paint, Sherwin-Williams."

We make a full line of money-saving paints for the farm. See our dealer in your town. We gladly send free our painting book for farmers.

**SHERWIN-WILLIAMS
PAINTS & VARNISHES
FOR THE FARM**

Also
Insecticide and Fungicide Makers
Best dealers everywhere. Address
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Above Every Building

on the farm, in importance and attractiveness stands the Natco Imperishable Silo. It doubles feeding profits. Through scores of years of weathering it will remain the same tight, uncayed, uncracked, unwarped preserver of sweet, succulent silage. It is fireproof and vermin-proof and requires no painting or adjusting. The

Natco Imperishable Silo

"The Silo That Lasts for Generations"

is positively the best investment the stockman can make. The first cost of the Natco is the only cost. Furthermore, it produces perfect silage, as the vitrified hollow clay tile are impervious to either air or moisture, and the dead air compartments prevent freezing. Convenience and attractiveness add still more to the absolute superiority of this silo. Write to nearest branch for a list of Natco owners in your State and for catalog J.

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Organized 1887
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Lansing, Mich. Philadelphia, Pa. Huntington, Ind.

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Dept. B, 3733 Filbert St., Philadelphia
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Chicago

New Catalog FREE

Dehorn With Caustic Potash

By Elizabeth Irving

WE ARE all the time wondering why so many intelligent stockmen continue to permit their cattle to acquire horns when they are so easily prevented. I do not refer to the radical removal of horns from grown cattle by saw or clippers, a practice which is dangerous and cruel.

We once had a fine animal slowly bleed to death after dehorning, in spite of all that could be done before and after.

We use the better way. All our calves have their little horn buttons rubbed with stick potash when a few days old, and the horns will never grow. We have never had a failure, and it is a very simple and a painless operation.

If permitted, the calf will suck your fingers or clothing while being treated and go to feeding right after. It should first be thrown and held quiet by a second person. Wrap the potash in paper to protect your fingers, and rub over the embryo horn or about three fourths of an inch in diameter until the spot becomes slippery. Don't rub over half a minute. It is not necessary to burn the head deeply. In a day or two the spots will be scabbed over, and eventually the scabs drop off, leaving the head as permanently bare of horns as that of a born mooly.

One 5-cent stick of potash will treat several calves, and will keep indefinitely in a tightly corked bottle. We were the first in our locality to adopt this method, and through our suggestion it is now being quite generally followed here.

Some may argue that the absence of horns on pedigreed cattle might lower their money value, but that has not been our experience.

For many years we have bred, raised, and sold pedigreed Jerseys and Guernseys to dealers as well as to private parties. No objection has ever been raised to the absence of horns. On the contrary, one man to whom we sold an imported bull with horns employed a dehorner to remove them before taking him away.

To Protect Your Sheep

By M. Coverdell

SEE that the sheep come in every night and get a little grain and clean, bright roughage as they begin to take to pasture. Too abrupt a change is apt to upset their digestive organs.



First Pig: "What's the matter with that fool calf?"
Second Pig: "He's just heard that the Prodigal Son is coming home!"

Chokes From Bolting Food

By Dr. A. S. Alexander

"I HAVE a twelve-year-old gray mare weighing 1,200 pounds," writes a Missouri subscriber. "After having her grain she quite often has a fit of coughing. She slobbers at the mouth and nose and sometimes tries to vomit. Otherwise she is in the best of health, is a good eater, does little or no work, though she is taken out for exercise every day. I am feeding her oats, shelled corn, and hay."

This mare will be less likely to choke and cough if her feed is put in a very large feed box on the bottom of which the grain is spread out thin so as to prevent bolting of feed. Feed ear corn, not shelled corn. This makes a horse take time and chew better.

Mix one-fifth part of wheat bran with the oats and dampen with water at feeding time. Allow one and one-quarter pounds of grain for each hundred pounds of body weight. Increase the quantity of grain to one and one-third pounds per hundred when she has hard work to do. Make the mare work or take abundant outdoor exercise every day. It would be well to have her teeth attended to by a veterinarian, as she may not be chewing her feed perfectly.

SAVE-THE-HORSE

TRADE MARK



J. G. BEEMER, President CHESTNUT RIDGE BRICK CO., KUNKLETON, PA., writes:

Two years ago my mare went lame in front foot. Getting out of patience with other things I bought Save-The-Horse and in a month's time she was entirely cured. I was so pleased I recommended it to a man who, the last time I saw him, said that the bottle of Save-The-Horse had been worth a hundred dollars to him.

EVERY BOTTLE sold with signed Contract-Bond to Return Money if Remedy fails on Ringbone—Thorough—SPAVIN—or ANY—Shoulder, Knee, Ankle, Hoof or Tendon disease. 19 Years A Success.

BUT WRITE and we will send our "SAVE-THE-HORSE BOOK"—Sample Contract and ADVICE—ALL FREE (to Horse Owners and Managers—Only). Address

TROY CHEMICAL CO., 59 Commerce Ave., Binghamton, N. Y. Druggists everywhere sell Save-The-Horse with CONTRACT, or we send by Parcel Post or Express Paid.

It Stands the Strain

Lost horseshoes and injured hoofs often result from using cheap, inferior nails. They're apt to break at a critical time when most needed.

Why take chances? Your shoer can just as well use "The Capewell" nail—best in the world at a fair price, not cheapest regardless of quality. You will know it by the Trade Mark. Make sure you get it.



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TRADE MARK REG. U. S. PAT. OFF.

Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone. Horse can be used. \$2 a bottle delivered. Describe your case for special instructions and Book 2 K Free.

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Unadilla Silos Are Trustworthy
They preserve silage perfectly. Combine best construction, greatest durability and convenience. Easy to erect and keep air-tight. Write today for catalogue. Agents wanted. Address UNADILLA SILO CO., Box E Unadilla, N. Y.



Economy Calves

You can now feed a calf for the first five months of his life for less than half the cost of the milk he would consume in the old way. Do this with

Blatchford's Calf Meal

This meal has been known as the complete milk substitute since the year 1800. Very easily prepared. It prevents scouring, promotes a strong rapid growth and makes a better cow.

Write for Actual Figures based on results, that show you how to increase your calf profits. The new data will be sent for the asking. Write today. Blatchford Calf Meal Factory, Dept. 4033 Waukegan, Ill.

\$15.95 SENT ON TRIAL UPWARD

AMERICAN CREAM SEPARATOR

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The howl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address:

AMERICAN SEPARATOR CO., Box 1058, Bainbridge, N. Y.

Make Every Cow Pay A Profit

Your dairy cows are machines for making money. The profit you reap depends upon the kind of raw materials you give the machines (your dairy cows) to make up into profit. If you use the wrong kind of raw materials your profit will not be what it ought to be. If you pay too much for raw materials, you lose money. Hundreds and hundreds of successful money-making dairymen have found that

CLOVER LEAF DAIRY FEED

is the raw material that works up into dairy profits to the best advantage. It pays a big percentage of profit over and above its cost. Why not make all the profit you can? Your work is not increased, nor your investment either. It's just a matter of right feed at the right price. Any way you use Clover Leaf Dairy Feed it will get results. Use it alone, or in place of bran and middlings or as the foundation of a high protein mixture. And don't pay \$32.00 per ton for a ration when you can get as good or better results at about \$3.00 per ton less. The more money you save the more profit you make. Use Clover Leaf Dairy Feed for biggest profits.

FREE Farm Record Book
Your feed dealer can supply you with Clover Leaf Dairy Feed, also Clover Leaf Calf Meal, Clover Leaf Horse Feed and Peerless Horse Feed. If your dealer does not handle Clover Leaf Feeds, write us, mentioning your dealer's name and we will send you a valuable Farm Record Book—absolutely FREE.

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BUFFALO, N. Y.

Ask the Advertisers

Manufacturers who advertise in FARM AND FIRESIDE are anxious to tell you more about their goods than is contained in the advertisements. Write for their catalogues. You are in no way obligated to buy when you ask for more information. Advertisers seek to give you all possible information as to what they have to sell, even if you do not buy at once.

They want you to know about the goods they have to offer, because they value your help in telling your friends and neighbors about them. If you know the good points of their wares you can do this.

So do not hesitate to ask them questions—advertisers in FARM AND FIRESIDE are all reliable. We have investigated every one of them and guarantee their reliability.

Two Farm Successes

These People Believe in Direct Marketing, and They Make It Pay Well

By E. I. Farrington

THE same mail brought to my door a package of sausages and a box of violets. I thought this was a perfect illustration of the possibilities of the parcel post. I had sufficient interest to follow these two parcels back to their source, and what I found is worth telling about.

Up in Vermont a young farmer is making high-class sausages in his own home and shipping them in pound packages all over the country.

Out in Michigan an enterprising young woman, a former teacher, who had tired of schoolroom routine, has established a violet business and is mailing boxes of these popular flowers to customers in many States.

Walter H. Bayley is the name of the



He believed in good advertising on good packages

sausage maker. You may not have seen his advertisement yet, for it is a modest one and not widely distributed, but it has been the basis of his parcel-post business.

Sausage-making with him has not proved a mine by any means, but it has served its purpose well; that purpose being to provide lucrative employment during the winter months.

People Were Suspicious of the Quality

Speaking of his venture, Mr. Bayley said:

"Two years ago this winter I started making these sausages, doing the work myself with the aid of my son. We put in a cutter and a one-horsepower gasoline engine to run it, a filter, a lard press, and a cutting bench.

"I bought a large second-hand cooking range and used that for heating the workrooms and trying out the lard.

"We felt that we were experimenting and were not at all sure of our market, but after we had a good supply of first-class sausages ready my son took the horse and drove to St. Johnsbury, Vermont, to sell them.

"His success, to tell the truth, was only moderate. People did not know him nor me, and evinced a suspicion that was not flattering.

"We could not afford to be discouraged, however, and determined to make a market on the merit of the goods. We had taken every care to make the sausages good, and had put them up in attractive packages.

"The boy continued to canvass the town, and was able to dispose of all his stock each trip. Next we tackled Wells River, where the St. Johnsbury experience was duplicated.

"A little advertising in the local paper helped some, for it made our name familiar. All this was hard work, though, for both towns are about 14 miles distant from our farm, making a long drive twice a day.

"A year ago I had other work which took me on a trip to the northern part of Vermont, and having a little New England gumption I incidentally canvassed the hotels where I stopped, making a few customers in that way. This led me to send samples to some of the better hotels in different parts of Vermont and New Hampshire, and by this means I secured customers who ordered regular shipments of from 12 to 20 pounds each week.

"The meat markets were a failure. I tried to get my sausages sold in them, and found that they all had goods of their own, made from scraps gathered up in their shops or bought from the big packers. The grocery men were afraid of the meat men, and would not put my sausages in either.

The Hardest Work is to Get Established

"Last fall I went to Boston and succeeded in getting a few grocery men there to put my sausages on sale. Then I began to advertise in a small way in a paper having a national circulation. This brought me a few orders nearly every day. Now that the parcel-post

limit has been increased to 50 pounds I shall be able to use the mails a great deal more.

"The parcel-post business comes from New England, New Jersey, Ohio, and Illinois, with an occasional order from Kansas City. The business is increasing in a way which is, at least, encouraging."

All this was very interesting, but I was curious to learn whether Mr. Bayley was really a business farmer or a business man who had a farm. A few inquiries disclosed the fact that he owns and farms some 50 acres of good Vermont land. A large proportion of the pigs which go into his sausages are grown on this farm. The rest come from the farms of neighbors.

As it is a dairy country, the pigs are fed largely on skimmed milk and corn, making the very best pork. Only the best meat of first-class pigs is used, for Mr. Bayley has made quality his watchword from the beginning.

"How about the condition of your packages?" I inquired. "Do you have any trouble in the mails?"

"Well," said Mr. Bayley, "I find I can make my packages strong enough by using heavy wrapping paper and good strong twine up to 10 pounds in weight. Heavier packages have to have considerably stronger wrapping in order to have them go through safely. I am not altogether satisfied as yet with my packing methods, and am looking about for something better."

"How about the labor question?" I said. "That is the bugaboo on most farms."

"So far," was the answer, "we have done a large part of our own work, but have hired some help from my neighbors, all of whom are interested, careful workers.

As it happens, we are near to the local post-office, so our carting is not laborious. It is done mostly on wheelbarrows and hand sleds, except when I carry the packages in my own arms."

It was plain to see that Mr. Bayley had much confidence in the parcel post as a distributing medium for farm products. He remarked that he was receiving new orders from strangers who had purchased sausages in this way.

"I am sure," he concluded, "that in time we shall have a business that will help fill the winter months with paying employment and make a market for my own and my neighbors' pigs."

Violet-Raising Necessitates Close Application

Now for the violet lady. Isabel A. Bitely and her experience should prove most interesting as well as encouraging to women who long to escape from the noise and confusion of city streets. At the same time the fact is made very plain by Miss Bitely that what she has accomplished has been the result of the closest application and hard work for the past four years.

"I have given up concerts, lectures, and all the amusements which I used to love," she said, "in order to devote



This shows Mr. Bayley's home

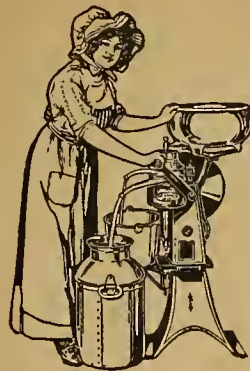
myself to my flowers, and yet I do not feel that I have been defrauded."

Miss Bitely has a house which is 100 feet long and 24 feet wide. It is devoted entirely to violets. She does practically all the work herself, having help only in the summer for a few days when new beds are made. Her home adjoins the greenhouse, and she is on duty all of the time.

Violet-growing is exacting work.

Many of the violets are sold to florists, but a considerable number are sold by parcel post. Of course it is comparatively new as yet. The price obtained for the flowers sold by mail varies from \$1 to \$1.50, depending upon the season.

This little ex-school-teacher's pluck has won her deserved success, but she has had to work harder than many young women are willing to work. She, however, finds the work itself a pleasure.



730 times every year you use a Cream Separator

NO OTHER MACHINE OR IMPLEMENT used on the farm receives anywhere near such constant use, nor is there any other farm machine or equipment with which quality of work means so much and first cost means so little.

could afford to use. That's why 98% of the cream separators used in creameries and milk plants the world over are De Laval's.

IF THE SEPARATOR RUNS hard, gets out of order or isn't easy to wash, it's a constant bother, and it only takes a very little loss of cream at each separation, when multiplied 730 times, to run into a good deal of money, very soon more than the original cost of the machine. But no matter how small the loss, it is too big a handicap for any cow owner to try to work with.

NO MATTER WHERE YOU go you will find the biggest and best dairymen almost invariably are De Laval users. Experience has taught them that it is the best and most economical cream separator.

AS A MATTER OF FACT THE men who know most about cream separators, the creamerymen, long ago came to the conclusion that the De Laval was the only machine they

YOU DON'T HAVE TO experiment with cream separators any more because the men who are best able to judge as to the merits of the cream separator have already done that for you, and the result of their conclusion is evidenced by the practically exclusive use of the De Laval in creameries and milk plants and the fact that over 1,750,000 farm and dairy size De Laval's—more than all other makes combined—are in daily use.

The nearest De Laval agent will be glad to set up a machine for you and arrange for payment of same as is most convenient. If you don't know the local De Laval agent, simply address the nearest main office as noted below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

THIS **O.I.C.** SOW WEIGHED 932 LBS. AT 23 MONTHS OLD

IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, Masonic Bldg., Portland, Mich.

Only \$2 Down One Year to Pay!

\$24 Buys the New Butterfly Jr. No. 2. Lightrunning, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 quarts per hour. Made also in four larger sizes up to 5-1-2 shown here.

30 Days' Free Trial Earns its own cost and more by what it saves in cream. Postal brings Free catalog, folder and "direct-from-factory" offer. Buy from the manufacturer and save half.

ALBAUGH-DOVER CO. (12)
2159 Marshall Blvd. CHICAGO No. 534

A Horse in Harness Is Worth Two in the Stall

You lose money when you put your unpadded horses out to spring work. As soon as they begin working off their winter fat the collars hang loosely and bruise, chafe and gall them. They can't do a full day's work with raw and bleeding necks and shoulders. You lose work and make the beasts suffer needlessly. There's a remedy—use

HORSE COLLAR PADS
TAPATCO
REGISTERED TRADE MARK BRAND

This Low Priced Pad Adds Many Dollars to the Working Power of Your Horses

Filled with our own Special Composite Stuffing. Light, soft, springy and very absorbent. No dirt, no trash, no short cheap limy hair with hide attached to attract rats and mice. TAPATCO pads are cool and properly ventilated. They quickly absorb all sweat. The cost is only a few cents. One day's idleness of your horse would lose you more than the cost of a year's supply of TAPATCO pads.

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PADS FOR HORSES
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Get 4 to 10 Tons Per Acre From

the most wonderful forage crop the world has ever known. Now is the time to get ready for the next season's crop. Europe must buy hay of us at big prices. Sudan grass will thrive where Alfalfa and Clovers will not grow. Impervious to heat and

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Read About It in This Book

Our catalog, telling about this wonderful, new sorghum grass and many more promising varieties of seeds, trees, shrubs, plants of northern origin, mailed you free. Lest you forget, write tonight.



L. L. May & Co., Inc.,
St. Paul, Minn.

A TOP Dressing of Nitrate of Soda on Wheat should give you a splendid increase in yield of heavier, better Wheat than you have been producing.

To the farmers who apply I will send absolutely free enough Nitrate of Soda to try it. This offer is necessarily limited, so write at once. To the twenty-five farmers sending the best results from these trials, I offer as a prize Prof. Voorhees' book "Fertilizers," a standard work of 327 pages, handsomely bound.

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Galloway's Porterhouse Tomato GIVEN

I am always on the look out for new things, those out of the ordinary. I found a corker in the way of a tomato. Exceptionally big, firm and meaty. Just like a beefsteak. That's why I named it. To introduce them I will give my 1915 customers some of this seed gratis. Write today for special proposition and beautiful colored catalog of new and standard varieties of seeds. **Galloway Bros. & Co.,** 394 Galloway Station, Waterloo, Iowa

"Spray My Trees"

Coax Someone to Do the Work For You

By T. Greiner

THE few trees in the home orchard are often neglected and left the prey of insects and fungous diseases. This is because equipment and needed knowledge for spraying are lacking.

The best thing the owner of the few orchard trees and bush fruits, if he has the opportunity, can do is to call a neighboring fruit grower who has all these requisites to his aid and hire him to spray his trees at the right time and with the right material.

No haggling about the price either. The owner can afford to pay liberally in order to save his fruit and his trees without having to buy spraying outfits and materials and make a long-time study of the science of spraying. Spraying in itself amounts to nothing.

First you must know what you spray for; then, what is the proper time for spraying for that particular purpose; then, what is the proper material to spray with; and finally how to do it most thoroughly and effectively.

Your progressive neighbor may have much spraying to do for himself. He may not like to do yours. You may have to coax him.

If you choose to do your own spraying, or if you must, it can be done. You will need (to do the work on a dozen or two of trees of even very moderate size) a good bucket sprayer with working parts made of brass, a good nozzle, an extension six or more feet long, and ten or fifteen feet of hose.

Such an outfit will cost \$8 or \$10, but even with one of this kind you may not find it the easiest job to spray trees of large size.

It will require one person to do the pumping, while another handles the extension rod from a ladder or from the ground, trying his best to reach every limb and every side of every branch of the tree with the spray liquid.

What to spray with and when to spray are other important questions.

If scale is on your trees the surest spray material to kill it is some miscible oil like scalecide, in a one to twelve dilution (the manufacturers recommend one to fifteen), applied (preferably) in the fall or on any frost-free day in winter, or in spring before the leaves unfold. Hunt up the advertisements of the oil-spray or scalecide manufacturers, and buy two or five gallons (in large cans).

The commercial lime-sulphur solution can be used, if preferred, in a one to ten or eleven dilution; but for these small operations, and for persons having little knowledge of the spraying business and its details, the oil spray will be safer.

It may also, especially if done just as the buds are beginning to open, destroy or keep back other pests.

In some years the scab does considerable damage to apples and pears; but it is not a regular visitor, except on certain pear varieties. Spraying for this disease is not absolutely necessary in the home orchard; but, if done, Bordeaux mixture or a weak lime-sulphur solution (one to forty) may be used in two or more applications.

The most serious pest of the apple crop, however, is the codling worm. It can be controlled by giving the trees a thorough spraying with arsenate of lead, three pounds to fifty gallons of water combined with Bordeaux mixture, or other spray liquid, at the time that the blossoms (petals) have just fallen, exposing the embryo apples.

If done properly and thoroughly at this time, few of the worms will escape, and the second brood will be small and comparatively unimportant in the more northern States.

It is always advisable to cut the sappy sprouts out of the center of apple and pear trees, and to remove one limb where two are interfering, and this should be done before the first spraying in the season.

Too much cutting—so-called "tree butchering"—is worse than not enough.

Results With Onions

By Amos Gardner

A CONNECTICUT reader says he wishes to go into the gardening business, and to get some information about onion-growing, about what fertilizers to use, and how to keep the worms off, etc.

The home gardener, in a pinch, can get along with the directions he finds on seed packets and in the catalogues of our seedsmen, and with the occasional hints he finds in the good farm paper he reads regularly. But such papers can hardly explain the culture of every particular garden crop in all its fine details.

The person who wants to enter gardening as a profession should first of all secure and study garden books and special treatises on such vegetables which he wishes to raise for market. He will pay dearly for his experience if he attempts to engage in this or any other business without previous study and full information.

There are several good treatises on onion-growing, on growing cabbages, squashes, tomatoes, asparagus, strawberries, etc., and they are not expensive.

In the home garden sow your packet of Yellow Globe or Yellow Danvers onion just as you sow carrots, or beets, or any other of the close-planted vegetables, in rows a foot apart; or try a packet of Gibraltar or Prizetaker, which are of the large sweet Spanish type.

For the market garden the local market conditions have to be considered.

The market gardener will do well to try the Spanish onions under the transplanting method, thus growing those fine bulbs of a pound or more in weight for which customers will be willing to pay double prices as soon as they get acquainted with the sweetness and mildness of these onions. At the beginning you may have little if any trouble from the onion maggot, which is an enemy that is hard to fight.

Make your land rich when you wish to raise large crops of onions. Put on a good lot of stable manure; and, if thoroughly rotted, all the better. Then, if you choose, apply broadcast also a fair amount of fertilizer, any of the higher grades and complete so-called "vegetable or potato manures" of our reliable manufacturers, being suitable for that purpose, say half a ton to the acre, or on muck lands, when but little farm manure is to be used, even a ton.

Good Soil—Good Crop Then

By George T. Auld

"**P**OOR soil, poor crop" applies to tomatoes as well as to other vegetables. My preference would be to put a fair dressing of stable manure on poor, sandy and hilly land, and to use at least half a ton, and possibly more, of a high-grade complete, so-called vegetable or potato manure per acre besides. Without the stable manure a ton per acre may be used to advantage. Apply it broadcast. The fertilizer should contain about four or more per cent of nitrogen, and about eight each of phosphoric acid and potash when the latter is obtainable.

The biggest crops and best tomatoes are grown on soil that is in good heart, even rich, and on vines that may completely cover the surface with a heavy mat of foliage. I have seen a heavy crop of finest tomatoes taken off a piece of rich sandy loam that had been covered several inches deep with fish composted with barnyard manure.

Skunking the Grubs? Why Not?

ONE leading New York strawberry grower and propagator says that 5,000 white grubs were dug out of his 4-acre strawberry patch in one year. He has demonstrated that these grubs are most numerous and destructive every third year, their life cycle being completed in that period of time.

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Why shouldn't commercial strawberry growers be skunk farmers as well, and have at hand a brace of hungry skunks to turn loose in their strawberry fields at will?



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Danger From the Alfalfa Weevil

ALFAFA growers everywhere should be on the lookout for the alfalfa weevil which was introduced into Utah several years ago from Europe and is doing much damage there, and has spread over into Idaho.

There is no reason to doubt that it would spread and multiply in the States farther east if it were once introduced. This is an impending calamity to the whole country. By keeping watch we may be able to call its appearance to the attention of our experiment stations and the U. S. D. A. so that war may be waged on the pest in time.

The alfalfa weevil is a small beetle about the size of a grain of wheat. The mature bugs eat holes in the alfalfa leaves and lay eggs in the holes. The eggs are of a lemon-yellow color. They hatch out into grubs which are greenish in color, with a white line along the back, and of course are rather small, being the offspring of a beetle no larger than a wheat grain.

The grubs feed on the alfalfa leaves and sometimes destroy them completely. No more serious danger confronts the agriculture of the country than is found in the possibility of the spread of this little bug into the States east of the Rocky Mountains.

Inspect your alfalfa plants for the little holes close to a bud. If they are made by a little grub send one specimen to the entomologist at your experiment station, and another to the Bureau of Plant Industry at Washington, and write a letter to go with each specimen, telling the story of your find.

Professor Gillette of the Colorado Station advises farmers not to receive shipments of bulky merchandise like potatoes, fruit, or nursery stock from those regions of Utah or Idaho where this insect occurs, unless the goods have been thoroughly disinfected. It would seem the part of wisdom for the Government to adopt preventive measures.

In Time of Frost Prepare for Chinch Bugs

MOST of us—if we live in any part of the wheat-growing regions south of a line drawn between South Dakota and Iowa—are acquainted by sight with the chinch bug.

The little quarter-inch-long scoundrels, with black hairs growing on a black body, and white under wings, have done damage to us amounting, according to the U. S. D. A. figures, to three hundred and fifty million dollars during the past sixty years.

Before spring every bit of rubbish along the margins of fields should be burned off, for the bugs make their winter quarters there. Flocks of sheep which will pasture the roadsides and fence rows will earn their keep in destroying the winter quarters of the chinch bug, and even cattle and horses will do much good. The main thing is to allow no grass and rubbish to exist along the margins of fields.

A smooth road is a hard road for the bugs to travel.

When the bugs are exposed to the weather the winter kills them.

Clumps of broom sedge growing in pastures should be burned, and, in brief, all waste grasses about the farm. The more slowly these grasses burn the better, hence the wisdom of doing the work on a still day or, better still, a calm night.

All the farmers in the neighborhood should act together in this warfare.

Inasmuch as this burning should be done in November, December, January, and February in the southern wheat regions, this warning will be too late save for our more northern readers—but we have sounded the alarm before.

After the bugs leave their winter quarters the war is of a different sort—but that is a story we shall tell later.

ALMOST all the imported Turkestan alfalfa seed is worthless. Most of it is imported through Hamburg, and was often sold for German seed. There is now no reason for sowing imported seed. Ask for the home-grown seed, and if you live in the Northern States get it from Northern fields.

Potash Cut Off

IT IS "all off" with potash. The German Government has prohibited the exportation of potash salts.

The price is kiting. How to get along without it has been discussed at great length, and every farmer interested in fertilizers now knows that unless he is lucky enough to get his order in early for fertilizers with potash in them he will have to use mixtures prepared without it. "Order early" is a good slogan in this case—but perhaps it is no longer early.



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The Home of a Thousand Layers

By R. M. Archer

THE problem of getting rid of annoying rock piles in cultivated fields has been happily solved by H. W. Knight and Son, Maine poultrymen. They conceived the idea of building a 140-foot permanent hen house by combining the rocks and cement. The only expenditure of money was \$50 for buying cement to hold the rocks in place and make a smooth surface for the walls within and without the building.



The excellent work which the Knights are doing is partly due to the rocks they used in building this house

For a solid foundation they dug down to a ledge rock which was only from one to two feet below the surface. Had the ledge not been struck, they were planning to dig below the frost limit and fill in cobblestones for the foundation. Wood forms were placed upon the ledge for the cement walls. The hen house was made in sections 20 feet square, the size of pens wanted. The wall was made 5 inches thick.

After the forms were in place, stones from the field of any size that would fit into the form were placed like a loosely built wall almost to the height of the building, which is 10 feet in front and only 4 inches less at the back. A thin cement was then poured in, which worked into the crevices and around the rocks and the inch space outside of the stones, giving a smooth surface for the inside and outside walls. The partitions that separate the pens were made in the same manner.

Each pen is equal to a house in itself. The forms were made to allow for one door for each pen, and two windows. The windows are the usual size of house windows, and an ordinary storm window is hinged in the wooden frame. The doors are the same as commonly used for dwelling houses.

In making the roof, wood rafters were bedded in the hardening cement. Each pen has a center post support on a con-

crete base. The roof is of boards covered with good roofing paper.

The only ventilation provided for is through the windows that are kept open through the daytime and closed at night in the coldest weather. Mr. Knight did not emphasize that this method of ventilation was the best.

The pens are large enough so that the hens are not crowded. It is very seldom that the temperature goes below freezing in the pens, and he has found no difficulty on account of dampness. The building faces towards the southeast, and is built to accommodate 1,000 hens. About 900 hens are now kept in it.

The nests used in this house are something like bureau drawers, one above the other. The drawers have five compartments in each. The hen enters at the back through holes in each compartment. The eggs are taken out through a hinged door in front. The drawers can easily be taken out of the frames for cleaning purposes.

The roosts are placed on frames hung on hinges at the back so they may be lifted and hooked out of the way for the convenient cleaning of dropping boards.

A dirt floor with plenty of scratching litter has been found most satisfactory. Only \$50 was expended for material in building this poultry house. Two hundred bags of cement were used, mixed with gravel—one part cement to eight parts clean gravel. The gravel was medium fine and mixed with sand.

Only about one third as much concrete was required as would have been necessary had no rocks been used.

It required one man twenty-eight days to complete the cement work of this building.

A profit of about \$2 per hen for the flock indicates this system of hen-handling is a good one.

Are Your Hens Good Layers?

Continued from Page 5

lay but "for the sake of auld lang syne."

Judge of our surprise after reaching the farm when No. 2262 was among the first to begin laying, and laid nearly every day for over two months. She was then set, and hatched 11 chicks, which were given to another hen.

In about two weeks she began laying, and continued for about a month, then went broody; but on account of the hot weather we thought best to break her up. However, she wouldn't loaf, and started laying again.

With the thermometer around 100 in the shade nearly every day, she laid about a dozen eggs between August 1st and 18th.

I regret that we did not try to keep an exact account of the eggs she laid during the season, but feel confident that she laid more than 100 eggs. Possibly on account of her showroom experience she seems to understand the value of advertising, and usually cackles both before and after laying.

She has hatched and raised several broods of chicks, and made a good mother, but usually began laying when the chicks were about a month old, running with the chicks and hovering them at night just as if she were not laying.

We have set her eggs literally by the hundreds, but they have always proved infertile. We have changed the mating and feed year after year, as she showed her business ability, and have tried setting a few more of her eggs. Even this spring, although no longer in the poultry business, we could not resist the temptation to try incubating her eggs again.

I think there can be little doubt that she has some physical defect which prevents fertilization of the eggs.

Our experience with this hen and others shows the absolute necessity of the trap nest for the breeder, whether he is breeding for the showroom, for better egg production, or, as practically all breeders are doing, for both.

With the trap nest the breeder not only knows what each hen is doing but

he can know the pedigree of each individual bird, and can often locate troubles several generations ahead of other methods.

One season one of our best pens showed a large percentage of single combs, which disqualifies a Wyandotte. We did not know at first whether the cock or some of the hens were responsible, but the trap nest and pedigree egg tray showed that all the chicks from one hen were single combs. Her head came off and the trouble ceased.

Personally, I have little confidence in systems of selecting the best layers by their looks; but, admitting it possible, the work of breeding a heavy-laying strain is just begun, and as the trap nest is necessary to complete it, why not begin right and be sure of your ground as you go?

Once at a poultry show I met a man who did not think the trap nest necessary, as he had taken a correspondence course in "How to tell the layers" and could pick 'em out. We had a pen on exhibition consisting of No. 2262; No. 49, another 200-egg hen (which by the way lived to be 8 years old); another hen which the trap nest had shown to be a very poor layer, and a hen which had not been tested.

I at once asked him to pick out the best layers from that pen, and he picked the poor layer and the untested hen as good layers, and rejected the 200-egg hens as poor layers.

Of course there is lots of work about tending trap nests and keeping the necessary records, but what is there worth while that does not require labor and lots of it? To offset the labor, think of the pleasure to the true fancier to know that he is "doing things," and that results are certain and not a matter of luck or guesswork!

A good pure-bred has the tendency already fixed to reproduce herself true to type, and there is less liability to revert to ancestral qualities. So when you get the tendency to heavy egg production it is much easier to perpetuate it.

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Tells why chicks die
 E. J. Reefer, the poultry expert of 674 Main St., Kansas City, Mo., is giving away free a valuable book entitled "White Diarrhoea and How to Cure It." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 98 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

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Generally speaking, the best show specimens of a breed should be the best to produce the heavy-laying strain, not that the present standard calls in every case for the best shape for egg production but because birds showing the nearest standard shape and color will usually have a stronger tendency to reproduce true to type, and at the same time it will be easier to control any tendency toward variations desired by the breeder.

The production of a heavy-laying strain is largely a matter of love; and as the innate desire of an energetic person is to succeed, it is therefore easy to understand why such a person will have sufficient love for a flock of chickens uniform in shape and color, and of the particular type that suits his fancy, to devote his best energies to perpetuating and improving the beauty and utility of his feathered favorites.

But can you imagine the color of a man's hair who would do all this for a flock of speckled and spotted, ring-streaked and striped scrubs and mongrels of no particular breeding?

Some people seem to think that the fancier breeds for feathers only, but did you ever hear of the 200-egg hen till after the fanciers created an interest not only in the beauty of a properly feathered bird but in the possibility of increasing the egg production, and did you ever know of her anywhere except in the yard of a fancier?

200-Egg Hens That Lay Only 50
 There are a lot of 200-egg hens to-day laying only 50 to 75 eggs a year because their owners expect them to work for nothing and board themselves.

Just how far are these two poultrymen apart about this trap-nesting matter? Mr. Hobson believes every poultry keeper who is anxious to make his birds do the most for him should do some trap-nesting or else keep his stock up to the highest producing mark by securing stock or eggs from some reliable breeder who does make use of trap nests.

Mr. Marsh believes poultry keepers are very few who can devote the necessary time to trap-nesting, but he does believe in their use by experiment stations and the few who can continue to carry on the work. In the last analysis it will be the time-and-labor factor that must decide for or against trap-nesting.

The expense of providing trap nests for a breeding pen is trifling—not to exceed a dollar or two.

And thousands of farmers and poultrymen can trap-nest during the winter months without much difficulty.

There are also farmers and poultry keepers who have bright and careful sons and daughters who among them can carry on trap-nest breeding operations to the educational and financial advantage of all concerned.

Dr. Raymond Pearl considers the educational effect of trap-nesting hens as one of the greatest practical aids to poultry improvement. In this connection he has this to say:

"If anyone expects to attain the highest success in breeding for egg production—that is, the sort of success which Tom Barron has attained—it is absolutely essential that he shall run trap nests."
 There are always a multitude of beginners engaged in poultry-keeping who have very little or no knowledge of poultry to guide them.

Such persons can always run a few trap nests to good advantage as educators, even though they tend the traps but a few months each year.

Why the Hens Didn't Lay
 A Story in Five Parts
 Part V
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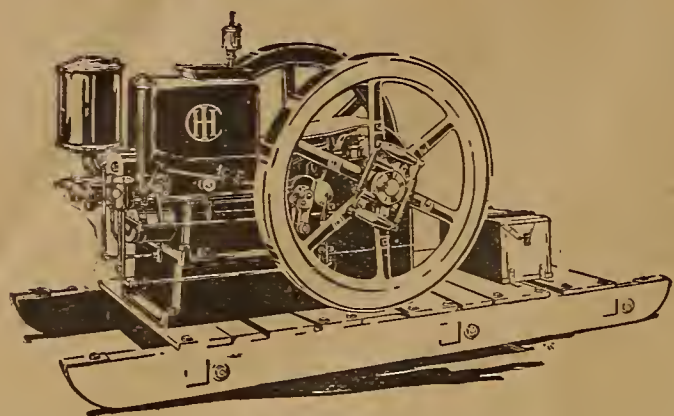
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When the Auto Won't Start

By Gordon L. Horton

IN COLD weather, owners of machines not equipped with a self-starter are troubled more or less with hard starting. The cause is poor vaporization of gasoline and faulty ignition.

As most radiators contain for winter some sort of anti-freeze solution, it is hardly advisable to drain this out and replace with hot water to promote combustion.

First, be sure of a good spark at the plugs. See that the spark gap is one thirty-second of an inch, the thickness of a new dime.

Then wrap the intake manifold with cloths, and pour hot water slowly on to them, being careful not to let hot water enter carburetor. Prime carburetor, and with switch on you are ready to go. I have seen cars started in this manner in cold weather when kerosene was the only fuel used.

With the Ford car cold-weather starting is hindered as much at the commutator as at the carburetor, because it is impossible to get a good spark at the plug with poor contact between roller on commutator arm and distributing blocks in commutator case.

This crippled condition is brought about by the oil in the commutator case getting heavy when cold. Consequently if the little coiled spring on the commutator arm is not up to a high tension the result will be a roller traveling around the case with a thin coating of cold heavy oil between it and the contacts. If time is too precious to permit washing out the commutator case with gasoline, good results will be obtained by giving it the same treatment as the intake manifold, except that you need not use the cloths. A steady stream of hot water poured directly on the outside of commutator case will soon thin the oil so the roller will make good contact.

One more feature of Ford cold-weather starting is the apparent dragging or stiffness of motor when trying to crank after the car has been standing overnight. This is caused by the separation of the disk in the high-speed clutch. The warm oil gets in between when car and motor are stopped. Then as the motor and oil get cold this oil acts as a solid clutch, and if car is started without emergency brake set it has a tendency to run forward. This condition can be completely overcome by a little forethought.

When leaving the car for the night (after motor has been shut off) drop side lever into high-gear position the same as when driving on the road. This brings all the disk firmly together, keeping out the oil.

Take care not to forget to pull the high-speed lever into natural position before cranking car in morning. Also do not prime carburetor too much. This is often the cause of a motor giving one or two weak explosions and then refusing to start until it has been turned over a number of times, or carburetor drained if it is equipped with an air shut-off. Hold this closed until you have turped the crank one complete turn only, then let go of air valve, turn on switch; it should then start on the first or second quarter turn.

More Lost People

EMERY T. STONE, also known as "Joe," was last heard from at Havre, Montana, four years ago. His sister and aged father, who live in Oregon, would appreciate hearing from anyone who knows of him.

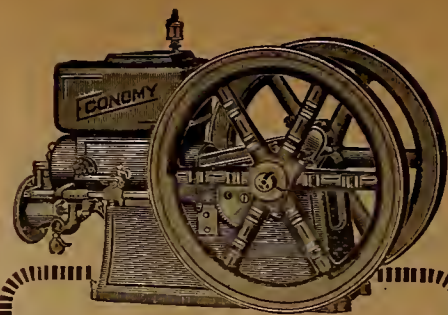
GEORGE M. PATTERSON, age sixteen, 5 feet 8 inches tall, gray eyes, light brown hair, dimple in his chin and a brown mole on left cheek near the neck, is a lost son to Mrs. M. J. Patterson of Pennsylvania. He has been missing for only a few weeks.

New Books

BREEDING OF FARM ANIMALS, by Merritt W. Harper, is a new book dealing mostly with horses, cattle, sheep, and swine. The author lays special stress on the laws of heredity and improvement of stock by skillful breeding. Illustrated. 326 pages. The Orange Judd Co., New York City. Price, \$1.50.

HENLEY'S TWENTIETH CENTURY HOME AND WORKSHOP FORMULAS is a book of 507 pages, telling briefly the principal processes used in the manufacture of insecticides, inks, explosives, extracts, paints, enamels, dyes, and many other commercial articles. It is designed especially for persons who want to manufacture such articles for sale. Norman W. Henley Publishing Co., New York City. Price, \$3.

AGRICULTURE, by Benson and Betts, is a new book which very successfully boils down the most useful information relating to farming to the scope of 442 pages. It is conveniently divided into five parts. Though not covering all of the details which an expert would want to know, it is a valuable book for the farm library. Illustrated. The Bobbs-Merrill Company, Indianapolis. Price, \$1.50.



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The Farmers' Lobby

Tricks of Filibustering Which Are Now About Played Out

By Judson C. Welliver

CONGRESS is engaged, while I am writing this letter to The Lobby, in a filibuster. It promises to be one of the most famous of the kind ever held, and its results may be so wide-sweeping as to end the institution of the filibuster itself.

A filibuster in Congress is an effort to talk a piece of legislation or a session of Congress to death. It is a process of smothering business without defeating it. It is the method by which a minority seeks to make itself master of the majority. Whether a filibuster is a good thing or a bad depends on your position regarding the measure against which it is directed.

A few years ago there was before Congress the Aldrich emergency currency bill. It had passed the house; there were plenty of votes in the Senate to pass it, if only it could be brought to a vote. A few Senators, headed by Mr. LaFollette, opposed it and resorted to a filibuster. Those gentlemen, at that time, believed a filibuster was a good and uplifting institution. Senators Gore of Oklahoma and Stone of Missouri were the chief collaborators of LaFollette in that filibuster, and they both were fully convinced that it was a good thing.

To-day the boot is on the other leg.

The Administration is insistent on passing the ship-purchase bill concerning which The Lobby presented some general views a short time ago. Senators Stone and Gore are in favor of this measure, and they are firm in the faith that the filibuster is an invention of Satan.

On the other hand, the men who were in favor of the emergency currency bill, and who were at that time talking about "cloture" as a means to kill the filibuster, are to-day the chiefs in the filibustering effort to kill the ship bill. They think a filibuster is the safeguard of our liberties—this time.

Meanwhile, exactly what is a filibuster, why is it, and what does cloture mean?

One Man Can Stop the Vote

People ask these questions constantly, explaining that they have a vague notion of the answer but want a real understanding of the subject.

A filibuster is the process of talking long enough to kill the time that, but for the talk, would be used in passing legislation.

It is a proceeding which the rules of the United States Senate, almost alone of modern legislative bodies, permits. The House of Representatives has long since discarded the rule of unlimited debate, if it ever had it. All the state legislatures have rules under which debate may be closed at a fixed time. In the British House of Commons, so long ago as 1882, the old rule of unlimited discussion was wiped out, and there was substituted, under the leadership of Mr. Gladstone, a proceeding for shutting off mere talk and forcing a vote on the question in issue.

In the parliaments of France, Germany, Austria-Hungary, Denmark, Sweden, Australia, Switzerland, New Zealand—in fact, in all the modern parliamentary bodies of which I am able to get the rules—there are methods of closing discussion and forcing a call of the roll on the main proposition.

Unlimited debate was once rather the rule of such bodies, but it has gone out of fashion with the development of parliamentary law and institutions because while it lasted it was possible for a few long-distance talkers to prevent a vote ever being taken, and business might be sacrificed.

To go down to the first principles of the thing, take the House of Representatives: in the House the previous question may be moved; in the Senate it cannot. If the House has been discussing a question until there is a feeling that nothing is to be gained by more talk, somebody rises and says:

"Mr. Speaker, I move that the main question be now put."

That is "moving the previous question." The previous question, under all parliamentary law, is not debatable. A member having been recognized, made that motion, and secured a second, the Speaker promptly brings down his gavel, gets order, and announces:

"Shall the main question be now put? The clerk will call the roll."

Those in favor of the previous question answer "Aye;" those opposed, "No." If a majority are favorable the debate is ended, and the Speaker at once puts the main question. If there are pending amendments they must be voted on in order; when all have been disposed of, the question recurs on the measure before the House, and it is passed or defeated.

Now, that is in effect the method of legislative bodies generally, and of other deliberative assemblies—except the Senate.

In the Senate the rules do not permit the previous question to be moved. If a Senator attempts to move it he is out of order. Consequently there is no way to compel a vote merely because a majority wants to vote.

In the Senate, when a big measure is up, the committee chairman in charge of it begins a month or two ahead of a prospective vote to seek agreement on a time to vote. This agreement must be had by unanimous consent. If the request is that "the Senate agree to vote on this bill one month from to-day," and if one Senator objects,—then there is no agreement, and the whole thing is as wide open as ever.

Under such a system, in short, so long as any Sena-

tor or group of Senators object, and say that they want to be heard further on the bill, no date for a vote can be fixed. Therefore, whenever any effort is made to get the vote, if only one Senator will announce his wish to talk, the vote has to be given up.

Just a Test of Brute Strength

That is the beginning of the filibuster. On any important measure it is necessary to "let the Senate talk itself out;" then a request for unanimous consent to fix a date to vote may at last be granted. But if it is persistently refused it becomes apparent that a filibuster is on, and thereupon it becomes necessary for the managers of the bill to keep it before the Senate, constantly insisting that Senators shall either talk about it or agree to fix a time to vote.

The final resort, if the opposition keeps on talking and refusing its consent, is the continuous session. There is no limitation on the length of Senate

structure consideration of the bill: it is merely killing time. If the managers of the bill decide that they are beaten they at last either withdraw it and admit its defeat or they consent to an adjournment, which means that all hands can go away, sleep a while, and come back for another test of strength in another continuous session.

In such contests as this the ruses of the continuous talker to kill time and avoid killing himself are many and varied. Some men, like Stone, can talk slowly enough to save their voices and strength. Others, like LaFollette, find it utterly impossible to do this; they must talk at full speed and vigor, and wear themselves out. In the older days the speaker might be interrupted by another Senator who, getting permission to ask a question, might in the guise of a question read a magazine article into the Record and then ask the speaker, by this time rested and refreshed, if he ever heard of that article, and what he thought of it. Another trick was for the speaker, coming to a statistical part of his address, to have the clerk read from the desk a compilation of half a volume of "authorities." But latterly the rules have been tightened, and the filibustering orator is pretty strictly compelled to use his own voice and strength.

Few more difficult things confront the filibustering orator than to find a supply of things to say. Not many folks can talk ten hours continuously without running dry. A man who once talked twelve hours told me afterward that after he had gone half the course he began to hate himself and grow dazed; he couldn't keep his mind on his subject, scraping all the while at the bottom of his brain pan for more things to say. Nevertheless, he talked about twelve hours, and killed a river-and-harbor appropriation bill. That was "Tom" Carter of Montana, now dead. Incidentally, his speech was really a gem of continuous interest and humor.

It Delays Government Business

When a filibuster is in progress the people in charge of the legislation must have their wits about them every instant, seeking opportunities to put the question after one Senator sits down and before another is ready to claim the floor, for the instant a Senator yields the floor the chair will start to put the question; nothing can stop him except a Senator's demand to be recognized to speak. It takes only a moment for a presiding officer to mumble out: "The question is, Shall the bill pass? Mr. Clerk, call the roll." And once the roll is started nothing can interrupt it.

To get the roll started, therefore, whenever there is the least sign of a lapse by the filibusters, is a particularly clever trick of the game. It is necessary that the presiding officer, the clerk, and the Senator whose name leads the roll call shall be strictly on the job, quick on the trigger, and awake to every chance. A propitious half-second, seized or lost, may decide whether a great piece of legislation carries or fails. The other night Senator Ashurst of Arizona sat in his seat sixteen straight hours, not daring to close his eyes for a moment's doze, nor to risk a minute's conversation with a neighbor—all because Ashurst's name leads the alphabetical list of the Senate, and the instant "Ashurst" has been called and "aye" has been responded the roll call is started, and may not be interrupted though the heavens cave in.

This sort of thing is not legislating; it is parliamentary football, opposing brute force to brute force, with a few scaly tricks thrown in. Yet it is the process through which a very large share of the really important legislation must pass. Of course most business is done by unanimous consent. If it doesn't get unanimous consent, and is not big and impressive enough to be made a party affair, then it simply doesn't get passed. Where there ought to be honest, sincere discussion in the effort to get understanding and agreement, there is time-killing talk. Votes are never affected by the filibuster talking; in fact, that talk is never listened to, save by a man in the position of Ashurst—looking for a chance to smash through the line for a touchdown, which means a roll call.

Not much wonder that the Senate is getting seriously concerned about adopting a modern regulation of some kind under which a majority may end debate and bring a vote. A long list of resolutions have been presented looking to such a change of the rules. There is little doubt it will come before long. The business piled on the Senate will compel it. If there is a special session this spring, as seems certain at the date of writing, it will be chiefly due to the ship-bill filibuster, which will have killed enough time to compel it. Men who have sat up fifty-odd hours at a stretch—men of whom none is young, and a majority distinctly elderly—just for the fun of being loyal to a rule that no other parliamentary body on earth still endures, are naturally not ardent about the glorious institution of unlimited talk.

Yet, oddly enough, the insistent demand for a cloture (closure) rule comes from the younger men as a rule. The older men largely represent an older day in politics—the day in which the tradition of endless debate was esteemed sacred. The younger men, newer to senatorial service, represent a new order of political thought, and have small patience with the things that get in the way of transacting government business.



Filibuster: "I am satisfied when legislation is smothered"

speeches: a Senator may talk as long as he likes; but under the rules he may not make more than two speeches a day on the same question in the same "legislative day."

A legislative day is the period of time a body may be in continuous session. It is not a period of twenty-four hours. By the mere process of refusing to adjourn, the Senate recently crowded fifty-five hours into a legislative day.

Suppose the Senate meets at noon. Ordinarily it adjourns in four, five, or six hours. But, a filibuster being on, the motion to adjourn, say at six o'clock, is voted down by the majority, and the session becomes continuous. Everything that happens thereafter is in the same legislative day; a Senator may not speak more than twice on one question. If the session can be kept going by main strength and plenty of strong black coffee, until every Senator who wants to do it has talked twice, then nothing can prevent a vote.

The continuous session, therefore, is the method of overcoming the filibuster. It is simply a test of brute strength to decide which side can stick at it longest. Senators may doze in their chairs or the smoking and committee rooms, but they must be ready to answer at any time, on a moment's notice, a call of the roll for quorum or on a motion that may be made, perhaps on the bill itself.

Some Ingenious Ruses

Before the end of the recent ship-bill filibuster the older Senators were utterly worn out. Senators Page, Stephenson, Gallinger, and others looked as if they had been brought from hospitals. Senators Lewis of Illinois and Penrose of Pennsylvania actually had been summoned from their sickbeds, with imminent peril perhaps to their lives, to insure that the full attendance should be on hand, for on this occasion the Senate was supposed to be equally divided—48 to 48—and the casting vote therefore lay with the vice-president. So both sides were compelled to keep every man, sick or well, old or young, weak or strong, right on the job.

All this refinement of torture, keeping men awake and within two minutes of their desks for two or three full days and nights, is inflicted with no possible purpose save to decide which side can stand the physical strain longest. For the minute the filibuster begins, real debate ends. After that it is not sincere, con-

The Brown Mouse

The Romance of a Farm Hand Who Upset a School District

By Herbert Quick

Part Ten

JIM IRWIN is a school teacher with ideas; he teaches his pupils the three R's in terms of farm industries. The pupils are his devoted friends, but he has enemies who are eager to remove him. His old sweetheart, Jennie Woodruff, who is county superintendent, tries in vain to drag Jim's methods back into the rut and, failing in this, to prove him incompetent by an examination of his pupils—whose proficiency defeats her purpose. Her father, however, whose farm hand Jim once was, is his staunch upholder and offers himself as candidate for the school board, running against Jim's enemy, Bonner. Colonel Woodruff's election is accomplished by a trick played by Newton Bronson, one of Jim's pupils. In order to keep his father, who is of the Bonner faction, away from the election, this boy feigns strychnine-poisoning. While Newton's father rushes for a distant doctor, Colonel Woodruff is elected by a majority of one.

XXV

Jennie's Fish Doesn't Bite

A GOOD deal of water ran under the Woodruff District bridges in the weeks between the school election and the Fourth of July picnic at Eight-Mile Grove. They were very important weeks to Jim Irwin, though outwardly uneventful. Great events are often mere imperceptible developments of the spirit.

Spring, for instance, brought a sort of spiritual crisis to Jim, for he had to face the accusing glance of the fields as they were plowed and sown while he lived indoors. As he labored at the tasks of the Woodruff School he was conscious of a feeling not very easily distinguished from a sense of guilt. It seemed that there must be something almost wicked in his failure to be afield with his team in the early spring mornings when the woolly anemones appeared in their fur coats, the heralds of the later comers—violets, sweet-williams, puccoons, and the scarlet prairie lilies.

A moral crisis accompanies the passing of a man from the struggle with the soil to any occupation the productiveness of which is not quite so clear. It requires a keenly sensitive nature to feel conscious of it, but Jim Irwin possessed such a temperament; and from the beginning of the daily race with the seasons which makes the life of a Northern farmer an eight-months Marathon in which to fall behind for a week is to lose much of the year's reward, the gawky schoolmaster slept uneasily, and heard the earliest cock-crow as a soldier hears a call to arms to which he has made up his mind he will not respond.

I think there is a real moral principle involved. I believe that this deep instinct for labor in and about the soil is a valid one, and that the gathering together of people in cities has been at the cost of an obscure but real moral shock. I doubt if the people of the cities can ever be at rest in a future full of moral searchings of conscience until every man has traced definitely the connection of the work he is doing with the maintenance of his country's population. Sometimes those vocations whose connection cannot be so traced will be recognized as wicked ones, and people engaged in them will feel as did Jim—until he worked out the facts in the relation of school-teaching to the feeding, clothing, and sheltering of the world.

Most school-teaching he believed, correctly or incorrectly, has very little to do with the primary task of the human race; but so far as his teaching was concerned, even he believed in it. If he could not make a greater contribution to the product of the Woodruff District by teaching school than by working in the fields, he would go back to the fields. Whether he could do so or not was the very fact in issue between him and the local body politic.

These are some of the waters that ran under the bridges before the Fourth of July picnic at Eight-Mile Grove. Few surface indications there were of any change in the little community in this annual gathering of friends and neighbors. Wilbur Smythe made the annual address, and was in rather finer fettle than usual as he paid his fervid tribute to the starry flag, and to this very place as the most favored spot in the best country of the greatest State in the most powerful, intellectual, freest, and most progressive nation in the best possible of worlds. Wilbur was going strong. Jim Irwin read the Declaration rather well. Jennie Woodruff thought, as she sat on the platform between Deacon Avery, the oldest settler in the district, and Mrs. Columbus Brown, the sole local representative of the Daughters of the American Revolution. Colonel Woodruff presided in his Grand Army of the Republic uniform.

The fresh northwest breeze made free with the oaks, elms, hickories, and box-elders of Eight-Mile Grove, and the waters of Pickerel Creek glistened a hundred yards away, beyond the fitting figures of the boys

who preferred to shoot off their own firecrackers and torpedoes and nigger chasers rather than to listen to those of Wilbur Smythe. Still farther off could be heard the voice of a lone lemonade vender as he advertised ice-cold lemonade, made in the shade, with a brand-new spade, by an old maid, as a guaranty that it was the blamest, coldest lemonade ever sold. And under the shadiest trees a few incorrigible Marthas were spreading the snowy tablecloths on which would soon be placed the bountiful repasts stored in ponderous wicker baskets and hampers. It was a lovely day, in a lovely spot—a good example of the miniature forests which grew naturally from time immemorial in favored locations on the Iowa prairies—half a square mile of woodland, all about which the green corn rows stood aslant in the cool breeze, "waist-high and laid by."

They were passing down the rough board steps from

One might have thought, judging by the Colonel's quizzical smile, that he was pleased at Jennie's loss of her former swain.

"We'll have to invite Jim longer ahead of time," said he. "He's getting to be in demand."

He seemed to be in demand, a fact that Jennie confirmed by observation as she chatted with Deacon Avery, Mrs. Columbus Brown and her husband, and the Orator of the Day at the table set apart for the guests and notables. Jim received a dozen invitations as he passed the groups seated on the grass, one of them from Mrs. Cornelius Bonner, who saw no particular point in advertising disgruntlement. The children ran to him and clung to his hands; the young girls gave him sisterly smiles and such trifles as chicken drumsticks, pieces of cake, and like titbits. His passage to the numerous group at a square table under a big bur-oak was quite an ovation—an ovation of the significance of which he was himself quite unaware. The people were just friendly, that was all—to his mind.

But Jennie, the daughter of a politician and a promising one herself—Jennie sensed the fact that Jim Irwin had won something from the people of the

Woodruff District in the way of deference. Still he was the gangling, Lincolnian, ill-dressed poverty-stricken Jim Irwin of old, but Jennie had no longer the feeling that one's standing was somewhat compromised by association with him. He had begun to put on something more significant than clothes, something which he had possessed all the time but which became valid only as it was publicly apprehended. There was a slight air of command in his down-sitting and uprising at the picnic. He was clearly the central figure of his group, in which she recognized the Bronsons; those queer children from Tennessee, the Simmses; the Talcotts; the Hansens, and Colonel Woodruff's hired man, Pete, whose other name is not recorded.

Jim sat down between Bettina Hansen, a flaxen-haired young Brünnehilde of seventeen, and Calista Simms—Jennie saw him do it while listening to Wilbur Smythe's account of the exacting nature of the big law practice he was building up, and would have been glad to exchange places with Calista or Bettina.

XXVI

Jim in a New Light

THE repast drew to a close. T and over by the bur-oak the crowd had grown to a circle surrounding Jim Irwin.

"He seems to be making an address," said Wilbur Smythe.

"Well, Wilbur," replied the Colonel, "you had the first shot at us. Suppose we move over and see what's under discussion."

As they approached the group they heard Jim Irwin answering something which Ezra Bronson had said.

"You think so, Ezra," said he, "and it seems reasonable that big creameries like those at Omaha, Sioux City, Des Moines, and the other centralizer points can make butter cheaper than we could do here, but we've the figures that

show that they aren't economical."

"They can't make good butter, for one thing," said Newton Bronson cockily.

"Why can't they?" asked Olaf Hansen, the father of Bettina.

"Well," said Newton, "they have to have so much cream that they've got to ship it so far that it gets rotten on the way, and they have to renovate it with lime and other chemicals before they can churn it."

"Well," said Raymond Simms, "I reckon they sell their butter fo' all it's wuth; an' they can't get within from foah to seven cents a pound as much fo' it as the farmers' creameries in Wisconsin and Minnesota get fo' theirs."

"That's a fact, Olaf," said Jim.

"How do you kids know so darned much about it?" queried Pete.

"Huh!" sniffed Bettina. "We've been reading about it, and writing letters about it, and figuring percentages on it in school all winter. We've done arithmetic and geography and grammar and I don't know what else on it."

"Well, I'm agin any schoolin'," said Pete, "that makes kids smarter in farmin' than their parents and their parents' hired men. Gimme another swig o' that lemonade, Jim."

"You see," said Jim to his audience, meanwhile pouring the lemonade, "the centralizer creamery is uneconomic in several ways. It has to pay excessive transportation charges. It has to pay excessive commissions to its cream buyers. It has to accept cream without proper inspection, and mixes the good with the bad. It makes such long shipments that the cream spoils in transit and lowers the quality of the butter. It can't make the best use of the buttermilk. All these losses and leaks the farmers' [CONTINUED ON PAGE 29]



Was Jennie throwing herself at Jim's head? Mrs. Bonner thought so

the platform after the exercises had terminated in a rousing rendition of "America," when Jennie Woodruff, having slipped by everybody else to reach him, tapped Jim Irwin on the shoulder. He looked back over his shoulder at her with his slow, gentle smile.

"Isn't your mother here, Jim?" she asked. "I've been looking all over the crowd and can't see her."

"She isn't here," answered Jim. "I was in hopes that when she broke loose and went to your Christmas dinner she would stay loose, but she went home and settled back into her rut."

"Too bad," said Jennie. "She'd have a nice time if she were here."

"Yes," said Jim, "I believe she would."

"I want help," said Jennie. "Our hamper is terribly heavy—please!"

It was rather obvious to Mrs. Bonner that Jennie was throwing herself at Jim's head, but that had been an article of the Bonner family creed ever since the decision of the hearing at the courthouse. It must be admitted that the young county superintendent found tasks which kept the young schoolmaster very close to her side. He carried the hamper, helped Jennie to spread the cloth on the grass, went with her to the well for water, and cracked ice wherewith to cool it. In fact, he quite cut Wilbur Smythe out when that gentleman made ponderous efforts to obtain a share of the favor implied in these permissions.

"Sit down, Jim," said Mrs. Woodruff, "you've earned a bite of what we've got. It's good enough, what there is of it; and there's enough of it, such as it is."

"I'm sorry," said Jim, "but I've a prior engagement."

"Why, Jim!" protested Jennie. "I've been counting on you. Don't desert me!"

"I'm awfully sorry," said Jim, "but I promised. I'll see you later."

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Burglars in the Night

That is What Cutworms Are, and They Should Be so Recognized

By Anna B. Comstock

How to Protect Yourself

POISON solution as used for fruit trees or potato vines, a pound of Paris green or arsenate of lead in 15 gallons of water for moistening the green bait, will do the trick. For the bran mash bait, thoroughly mix 1 pound of Paris green with 20 pounds of dry bran, and moisten with a quart or two

of molasses and sufficient water to make a stiff mash. A pinch of this mash dropped a few feet apart throughout the field just before the corn breaks through the ground, or vegetables are set out, will generally save the crop from cutworms. You protect yourself by saving the crop.

CUTWORMS are true burglars. As long as the day lasts they remain in hiding under sticks, stones, or trash—or even below the surface of the ground; and as soon as night falls they come forth to steal the lives of tender plants.

It is a wise precaution on the part of these insect burglars to hide during the day, for they are smooth and plump and just the sort of titbit birds are always looking for. If these night-prowling rascals would only stop and satisfy their hunger by eating the plants as they cut them down, they would be less rascally. But no! They go on appeasing their voracious appetites with merely what they bite out in cutting down the plants; thus a dozen plants lie flat and wilted in the morning sun, sacrificed for one late dinner.

In this respect the cutworms resemble dogs which kill more sheep in a flock than they can eat.

Some cutworms mow plants down at the surface of the ground, some leave an inch or so of stubble, while at least one cuts at the root. But even yet the tale of their rascality is not told, for some species climb trees, especially peach trees, and feed upon the buds.

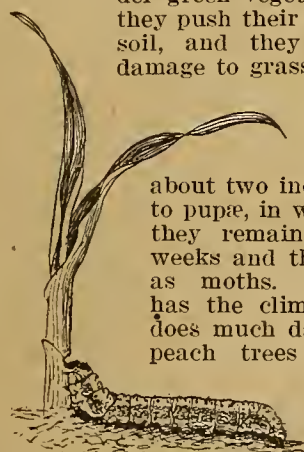
Sometimes these burglar caterpillars draw the cut plants into their hiding places so that they can have a lunch during the day if they feel hungry.

There are at least sixteen species of cutworms that work upon corn; and in New York State alone thirty species do great damage to different crops. The destructive army worm belongs to the same family as the cutworms; and there have been instances where the true cutworms have taken up army-worm habits, traveling in hordes, eating by day and destroying all vegetation in their path.

The Story of One Cutworm

The story of one species will do to illustrate the general habits of the whole family of cutworms. Take, for instance, the Dingy cutworm (*Feltia subgothica*): Its sides are dusky-gray and it has a wide yellowish gray stripe down its back. The moth is smoky-gray in color, with beautiful markings on its front wings; but as it remains hidden during the day it is difficult to understand why it should be so decorated. It appears in July and September and lays its eggs upon plants, and presumably the young larvae get their start by feeding upon leaves. When half-grown they hide away in the soil or in some safe nook, and spend the winter apparently in getting up an appetite for spring greens.

As soon as the season opens they come out of the ground and cut off all our tender green vegetables as fast as they push their heads above the soil, and they also do great damage to grass and grain during



ing April and May. They then go down into the ground about two inches and change to pupae, in which quiet state they remain for about six weeks and then they appear as moths. This cutworm has the climbing habit and does much damage to young peach trees by destroying the buds and thus destroying the trees.

The cutworm moths belong to the family Noctuidæ, which means "night owls," and they surely are night owls, for we never see them by day unless we happen upon their hiding places; but by night they come to the lights, and we often see them fluttering against the window panes, their eyes glowing like rubies.

The cutworms flourish in grass and pasture lands, and crops that are put on such lands the first year after plowing are likely to be injured by them. When short rotation of crops is practiced there is usually little trouble with these pests.

The best remedy as yet devised for cutworms is poisoned bait. A bran mash mixed with Paris green is dropped, a

spoonful in a place, near where the seed is planted, or may be scattered between the rows; or pigweed, peppergrass, and mullein sprayed with Paris green may be placed near the young plants, and covered with shingles to keep them fresh. Thus the hungry burglars come up and get a bite that finishes their careers.

Of course fowls and other domestic animals must be kept out of fields if poison bait is used, or their careers will also end suddenly. For the climbing cutworms, paper bands flaring downward



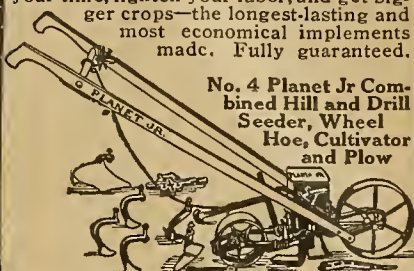
These night owls are more dangerous than they look

are used to prevent them from climbing up the trees; and the poison bran mash at the base of the tree is usually successful in killing many of the pests.

ENGLAND is going in for toy-making, partly to furnish work for the unemployed and partly due to anti-German feeling. One manufacturer of human glass eyes is now making glass eyes for dolls, the first made in England for years.

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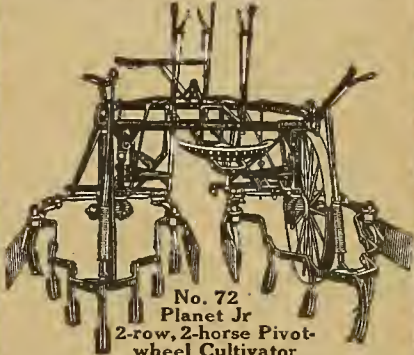
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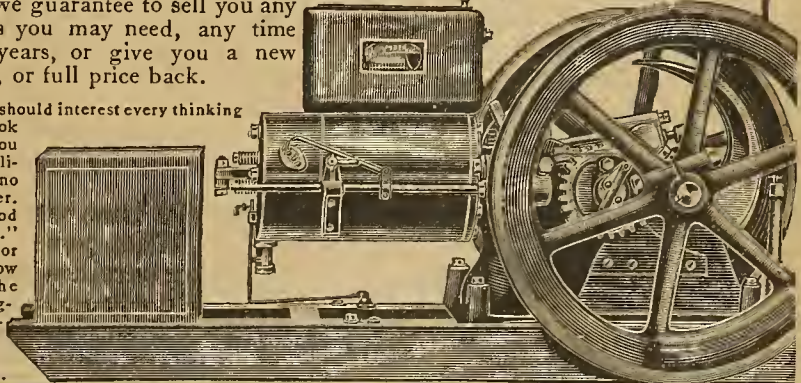
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How Much is a Home Worth?

Build a Home!

DEAR FIRESIDE EDITOR: C. O. of Iowa asks a very important question, "How much is a home worth?"

I once traveled with a companion through a farming country of exceptionally good dwelling houses and well-kept yards. I remarked that the buildings showed prosperity. "Bnt," said he, "Where are the corresponding outbuildings, barns, and so forth?" I replied that we had doubtless found a peculiar people, a people that thought as much, or even more, of their families than they did of their cows and horses.

I am fifty-two years young; have raised a family of five. I sacrificed other things and built a house—a home. Build a home; then feed your children wisely, and they will bless you in old age.

J. H. T., Wisconsin.

How Shall We Answer for Our Children?

DEAR FIRESIDE EDITOR: The value of a refined, happy home is far above estimating, in forming the characters of young girls and boys. I have seen both sides of the question in my own experience.

One man whom I knew made a god of money, stinting and giving grudgingly to his children a common-school education, with a poorly furnished home and no luxuries. When they yearned for better things he would say, "It's all yours when I die, and I want a big farm and a bank account." The result was that the two sons left home as soon as they could get away, the daughters married early, and the poor heart-broken mother was left alone.

These children, who had longed for a real home, went out into the world handicapped by the way in which they had been brought up. They had no force of character, no self-reliance.

The other man was poor. He could have been, like his neighbor, a rich man, but his four girls and two boys worked with him and the mother on the farm, fixing up their home until it was a beautiful home where the young folks liked to gather. The sons as well as the daughters went to church and to social gatherings, and were well educated, both morally and physically. Home to them was the dearest place on earth.

We have but a short time to mold the lives of our children, and the home has much to do with their future. What shall we say when Jesus asks us if we have done our part? A. N., Ohio.

Cozy Nooks for Everyone

DEAR FIRESIDE EDITOR: It is said that true love will make any home ideal; but will true love thrive in a home which lacks cheerfulness?

One of the first cares of parents should be to provide a pleasant home.

All fine-looking houses are not good homes, it is true. I know a boy whose father owns a handsome house, but the boy sleeps up in the attic—and is blamed for being rough! This may be a fine house, but it is not a good home. A good home finds pleasant nooks for the youngsters as well as for the grown-ups.

Considering the welfare of the children one must not be afraid to borrow some money to make the home attractive, though one should not plunge into extravagance of course.

Mrs. F. W. J., Texas.

The Home Safeguards the Children

DEAR FIRESIDE EDITOR: "How much is a home worth?" I will answer this, for it seems too good to pass unnoticed.

A good home is worth everything in the world. A man of integrity who will borrow a small amount to fit up a home will find the money well spent. It will safeguard the children's characters.

E. T., Ohio.

What's An Automobile Worth?

THIS time we ask, "How much is an automobile worth?" When you write, tell exactly how great a financial or debt-making sacrifice it is worth, and why.

We are going to give a prize of \$5 for the letter which discusses the subject most wisely, \$3 for the letter almost as good as the first, and \$1 for each letter we publish.

No letter must be more than 500 words long.

This contest closes April 1st.

Address The CONTEST Editor, FARM AND FIRESIDE, Springfield, Ohio.

Companionship is the Thing

DEAR FIRESIDE EDITOR: During my career as a nurse in one of Maryland's hospitals I came in contact with many girls who had become dissatisfied and "wandered" because home was unattractive.

Love makes an ideal home of course; but will there be much love if there's no beauty or amusement?

The environment has much to do with the formation of character. If the environment is disagreeable, it is impossible for the child to develop an agreeable disposition. Make home attractive, and love will abide therein.

It is pathetic, indeed, to see parents old and broken before their time, saving and scrimping to enlarge a bank account so the children will have a start when they're grown up. Don't do it! Enjoy life with them now.

Make the living-room cheerful and attractive. Furnish it with comfortable chairs and a piano or phonograph and listen to beautiful selections of music when you're tired. Give young people hooks; and be companions to them, not slaves. They will learn to look forward with pleasure to the long evenings, made short by the pleasant companionship of father and mother. When parents learn to be companions to their children, not slaves, and to make home attractive, they will not have to worry lest they seek the city for amusement and attraction.

Don't wait until childhood is past. Do it now, even if you have to borrow the money. The children can help work to pay the debt. Better endanger your bank account than your children's characters. Teach them the value of happiness and good taste. Better enjoy the security of your children's characters and gratitude than an income free from debt.

Miss D.B., North Carolina.

Do It Before They Go to the City

DEAR FIRESIDE EDITOR: Since receiving the last number of FARM AND FIRESIDE I have read and re-read the articles in the Experience Bazaar, and I will give my views.

My mother died when I was three years old, leaving besides myself a brother a little younger. My father married in a few years, but reverses and illness came until we were compelled to grow up in poverty, with hardly enough clothes to meet the needs of going to country school.

My brother and I began teaching school very young, and as soon as we were able to lay by a little money we remodeled our old house because we knew how depressing its shabbiness had always been.

In the meantime, however, our half-sister, just younger than my brother, had gone to the city, completely disgusted with country life.

If possible, I think everyone should have beautiful home surroundings, though not necessarily expensive ones.

Mrs. C. C., Ohio.

First Influences Last Forever

DEAR FIRESIDE EDITOR: The value of a home that is a real home is priceless. To say that environment figures largely in molding the character of the young is putting it very mildly, as I know from personal experience, both as a child and a parent. Home environment actually makes the child what he or she will be in the future. The first influences and first impressions given the child are the most lasting, be they good, bad, or indifferent.

It is of vastly more importance to have your characters and your children's characters safe than to have your bank account safe, to the detriment of your characters and your children's.

It is wise to endanger an income or a bank account, if that is necessary, in order to inculcate in the children good habits and manners, good taste and self-respect.

A. B. S., Ohio.

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I Am Patrocena!

The Love of a Mexican Girl, Her Hero, Her Revenge, and Her Surrender

By G. Henry

A Story in Two Parts—Part Two

PATROCENA was a Mexican beauty of a rich and aristocratic family, daughter of Don Francisco. While receiving finishing touches at a boarding school in the United States she went to a football game and was thrilled by the hero of the day, a big American who saved the game by a touchdown. In her excitement and rapture she wiped his bleeding cheek with her handkerchief, only to be met by the rebuke, "don't molly-coddle me!" Her incensed vanity plotted revenge, and at a ball given some days later she fascinated her hero by her beauty and charm and then flung him away with a scornful retort. She returned to Mexico, the big American in her heart, but another lover at her right hand.

SO WENT the days at the hacienda. We ate and slept and laughed and gossiped. We sang and we rode on horseback. To surprise us, Don Francisco had purchased an automobile from a city in Ohio, and he had taken us out to the newly built garage to show it to us; but we did not at first take kindly to the great machine. An automobile does not whinny for its mistress! It was to our horses—our horses to whom we could talk, and feed apples and sweetmeats—that we turned early mornings and late evenings when the low sun permitted us to emerge into the open. You know it is hot late into the fall in Chihuahua.

Still the machine gradually insinuated itself into our affections. One by one my sisters and I learned to run it. It was not long before there was rivalry between us as to who could best run it. We grew more and more daring, both in our efforts to manipulate the big black automobile and in venturing out on the desert alone in the machine far from home.

Quite likely that Don Francisco's pleasure at seeing our increasing interest in the plaything he had bought for us blinded his usual foresight for our safety. Anyhow it was not long before I was making surreptitious trips to the northward, beyond the confines of my father's thousands of irrigated acres. Had I chosen to go east or west or south I could have traveled miles and miles and still have been under the solicitous eyes of men who were employed by my father, but that would not have been sufficiently spiced with adventure. I must let the machine chug-chug to the northward, over the desert which had no roads, no trace of man or other living thing except an occasional prairie dog, a coyote now and then, and a gaunt, lean, shaggy lobo wolf on rare occasions. I must feel that I was an explorer. The moment I seated myself in the car and had my hands on the levers and felt the vibration of the car under me, I seemed to want to fly. One day, however, I flew too far.

It was on the second evening of my ninth week at home. The day had been extremely hot, so hot that as evening came on everybody was in a state of dullest lethargy. Don Francisco was seated in a wicker chair on the south side of the *patio*, and a gentle breeze from the desert, cooled a trifle by weaving through the high streams of several water fountains, had lulled him to sleep. My sisters were scattered here and there, nodding drowsily over Spanish and French novels or fashion books. If we could not wear the extreme styles we could look at pictures of them.

I looked at first one and then the other of these sleepy-headed kinsmen of mine, and decided that I should fare forth into the north world. I would not go far, but I would go far enough and fast enough to shake off the sleepy feeling which was creeping into my blood. So I aroused the *mozo* whose duty it was to remain at the garage, and in a few minutes I was slipping over the desert sand. I did not need to touch the button which made the searchlight glare, for the moon shone with its usual Mexican brilliancy.

Queerly enough, my thoughts took flight to the Americano of the football game ere I had gone far. I did not need to keep an intent attention on the guidance of my steed, for with no rains during the past four months the desert had assumed a perfectly smooth surface, almost flat. Occasionally I looked to the right or left, and it was all the same—all flat and smooth, with no sign of any other living thing. I traveled perhaps ten miles before I saw even a prairie dog, and he was so awed by the sight of the mysterious black thing which glided swiftly without making its legs go that he scurried back into his hole. I lived over again my two years at the young ladies' seminary, and my reminiscence ended with the day of the football game and the night of the *fête* in celebration of my hero's victory. I felt the quiver of his muscles under my fingers, and in my excited state of mind at

recollection of these things I allowed the automobile to swerve dangerously. This brought me back to the present, and I stopped the car to look about me at the dismal desert. Nothing but sand—sand north, east, and west. I turned to look behind me, and my poor heart stopped still. It was as black as black night in the north.

I listened and heard a threatening roar. A sandstorm was pursuing me—to judge by appearances, a terrific sandstorm. It would be upon me in a moment. As I continued to look in the direction of the hacienda a few fine grains stung my cheek. This was the advance guard of the attack on its way to overwhelm me. Half a mile away there was a flat-topped mesa, and I threw the levers and started for this higher level. Perhaps I could thus escape with a less severe lashing from the storm. Sometimes sandstorms travel near the ground. Anyway, it was my best hope.



It was my big Americano. Love had triumphed

But the storm was upon me before the machine took the incline leading to the mesa. Now I could not see the mesa. In another moment I could see only the outlines of the machine in which I was seated. The strong wind that was hurling the sand made me lose control of the machine and I felt it swerve and the seat under me seemed to rear. I was thrown face foremost on the sand, and I can recall that I involuntarily threw my hands back of my head for protection. I expected the heavy machine to climb over me. I was so frightened that I had a vision of the machine trampling and dancing on my prostrate body—and then for a moment I did not know what happened to me. I struggled to my feet; I remember that distinctly. I tried to face the storm, which was very foolish; but quickly turned my face away when it struck me its full blast, filling my nostrils, my mouth, my eyes, my hair with fine particles.

Now the storm was passing. Only its tail remained to lash me. I would get my bearings presently. Soon there was not even the sprinkling of sand which follows a sand deluge. I could see Luna in all her splendor smiling high over my left shoulder. Millions of stars winked at me cheerily. So I began to try to locate the Marble Palace. One can see many, many miles in northern Chihuahua. It is like looking afar on a great body of water—one can see to the horizon. When crossing the Atlantic I often compared the surface of the ocean to the surface of the country which surrounds my home. The mesas and sand dunes at home I likened to the white-capped waves. I turned this way and that way, seeking the home lights, but no lights could I see. Of course I had missed them merely. Again I turned slowly in my tracks—no lights. I was becoming frightened. I looked up at the moon, but I was so confused that her position told me nothing. I could not remember her relative position to my home. I recalled the mesa which I had intended to climb to escape the bottom of the storm. Ah, there was the mesa close by! I knew that I had been directly between the mesa and the Marble Palace,

but looking in the direction where the palace should be I saw only a dim gray-hill-like shape. Now I realized what had happened: a great sand dune had been formed by the drifting sand, separating me from home.

How to get the automobile through or around it—where was the automobile? I began to search. It was a big automobile. It would be easy to find. I walked in four directions and back again to my original position, so nearly as I could judge, but no automobile. I was moving my feet about in the sand when my toe kicked a hard object and, stooping to investigate, my hand came in contact with something smooth and velvety. I dug further—and it was an automobile tire. My automobile was buried.

I should have to walk home. Of course those at home would search for me. They were searching for me now. But the newly formed sand dune hid me from searchers. I should have to make my way around it and into the open desert. How my father would order the peons about! How my sisters would lament! I felt that my boots were filled with something besides feet, and I sat down on the sand. I would remove the sand, and whilst I was in the act of doing this I heard a sound as light as the fall of a snowflake behind me, and turning my head I saw a lean, gaunt lobo wolf scurry away, snarling. I fired my revolver in his direction and the bullet kicked up the sand where he had been. A colony of coyotes, having come out into the world now that the storm was over, set up a protesting howl at my disturbance of the quietude. Some prairie dogs ventured to add their chorus. But I shook the sand out of my boots and relaced them and got to my feet. I must do, not speculate.

How stupid I was. Why had I not climbed to the top of the mesa? It was higher than the sand dune. From there I should see the lights in the Marble Palace. How very stupid I was becoming. I am not what *los Americanos* call a 'fraid-cat, but the tears came into my eyes as I realized my predicament fully. Still it would do no good to shed tears. I must act, and I started for the high mesa, and in a moment was creeping up its steep side. For every ten inches of headway that I made I slipped back half that distance in the loose sand. I was getting lame. The fall from the automobile had hurt me more than I knew. I discovered that one shoulder and one knee pained quite intolerably. My eyes were smarting and my lips were dry—and of a sudden I realized that I had no water, and that it might be twenty or thirty or even more miles to the Marble Palace. I was becoming panicky, so I crept desperately up the mesa side. At last I reached the top and, walking to an elevation to the left, I faced about to look for the blessed lights which should guide me home, but the first thing I saw at the foot of the mesa on the opposite side from where I had been wrecked was a body of perhaps thirty men, who might be bandits, or cowboys, or revolutionaries, or plain cattle thieves making their way southward to steal from my father's thousands of steers. I forgot that I was in plain sight, with the bright moonlight silhouetting my figure against the sky.

I was so startled that I forgot everything. And I remained standing there until several exclamations came up to my ears and I saw those of the men who were sitting jump hastily to their feet, and in a moment the mesa was surrounded, and I was surrounded.

A man started to crawl up the mesa side directly toward me. I remained rigid, staring down at the individual who slowly approached me. Closer and closer he came. I had forgotten about the home lights. I forgot everything except that I was in danger.

A more villainous face I have never seen. The man was tall and straight and very dark, undoubtedly an Indian from the far south. He had not the bearing of submission which has crept into the very shoulders of our peons of the north. He did not appear to stand in any awe of the daughters of Don Francisco, as these men must know me to be since everything hereabouts belonged to Don Francisco.

Finally I found my voice. "You will take me home," I said.

"Si, Señorita," he replied in a low voice, showing his white teeth, "to our home. Come," and he motioned toward the bottom of the mesa.

"I shall remain here then," I said, drawing my revolver, but he smiled again. "Caution, Señorita Patrocena," he said. He advanced toward me and I raised the big black revolver, but he kept coming straight ahead, only nodding his head toward the men below. "You are very brave, Señorita," he said quietly.

[CONTINUED ON PAGE 30]

Dresses and Suits for Easter and Early Spring

Designs by Miss Gould, Which Show the New Styles and Yet Are So Simple That They Fill the Needs of Every Woman



No. 2714
No. 2715

No. 2719
No. 2720

No. 2711
No. 2712

No. 2699
No. 2700

No. 2659
No. 2697

No. 2714—Waist with Bolero Overblouse

34 to 42 bust. Material required for 36-inch bust, five-eighths yard of fifty-four-inch width, or one yard of thirty-six-inch material, with three-fourths yard of black satin and one-half yard of white satin for chemisette. The price of this pattern is ten cents

No. 2715—Side-Plaited Skirt: Raised Waistline

24 to 42 waist. Material required to make this skirt for 24-inch waist, six and three-eighths yards of thirty-six-inch width, or four yards of fifty-four-inch material. Width around the bottom, three and three-fourths yards. The price of this pattern is ten cents

No. 2719—Buttoned-in-front Military Blouse

34 to 44 bust. Material required for 36-inch bust, one-fourth yard striped silk, one-fourth yard satin, one and one-half yards of fifty-four-inch material, or two and one-eighth yards of thirty-six-inch material. Wool, silk, or linen. The price of this pattern is ten cents

No. 2720—Three-Piece Skirt with Hip Pockets

24 to 34 waist. Quantity of material required to make this skirt for 24-inch waist, two and five-eighths yards of fifty-four-inch material, or four yards of thirty-six-inch width. Width around bottom of skirt, two and one-fourth yards. Price of this pattern is ten cents

2711—Vest Waist: Long One-Piece Sleeve

32 to 42 bust. Material required to make this waist for 36-inch bust, one yard of forty-inch material, with one yard of thirty-inch for sleeves, five-eighths for vest, one-half for trimming, and one-half of lace for chemisette. The price of this pattern is ten cents

No. 2712—Gathered Two-Piece Skirt with Yoke

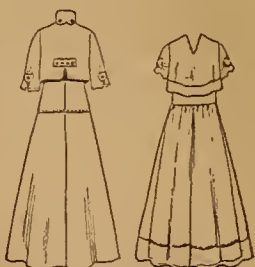
24 to 32 waist. Material required for 24-inch waist, four and three-eighths yards of thirty-inch width, five-eighths of forty-inch for yoke. Width around the bottom, three yards. An excellent design for Summer cottons. The price of this pattern is ten cents

2729—Misses' Bolero Evening Blouse: Cape Effect

14 to 18 years. Material required for 16-year size, one and one-fourth yards of forty-five-inch for blouse, one-half yard of forty-five-inch chiffon for bolero, and one-eighth yard of contrasting material for trimming. The price of this pattern is ten cents



No. 2714
No. 2715 No. 2719
No. 2720 No. 2711
No. 2712 No. 2699
No. 2700 No. 2659
No. 2697



No. 2731
No. 2732 No. 2729
No. 2730

SET-IN sleeves are more popular than other styles this spring.

Transparent sleeves of chiffon or net are seen in many of the light silk dresses, while on serge and cloth dresses the sleeves are often of a contrasting satin.

Overblouse effects are favored, the sleeves being generally set into a lining.

The combining of plain and figured materials as illustrated in the little crepe dress shown in Nos. 2711-2712 is an economical and pleasing notion just now.

Skirts are very full; they may be circular, plaited, or gathered according to personal fancy.

Braid is a very popular trimming, carrying out as it does the military trend of the spring fashions.

In measuring for coats or waists, pass the tape loosely over the fullest part of the bust, bringing it well up under arms and over shoulder blades.

Skirt measure is taken by passing the tape tightly around the smallest part of the waist and loosely around the widest part of the hips.

No. 2730—Misses' Band-Trimmed Evening Skirt

14 to 18 years. Material required for 16-year size, two and three-eighths yards of forty-five-inch for underskirt, three and one-half yards of forty-five-inch for overskirt, and five-eighths contrasting. Width in 16-year size, three and one-half yards. Soft tafetta with the band of chiffon cloth would be pretty. Price of pattern, ten cents

No. 2699—Short Coat in Military Style

34 to 40 bust. Quantity of material required to make this coat for thirty-six-inch bust, two and one-eighth yards of thirty-six-inch material, or one and one-half yards of fifty-four-inch material. An excellent model for linen. The price of this pattern is ten cents

No. 2700—Plaited Skirt with Normal Waistline

24 to 30 waist. Material for 24-inch waist, six and one-fourth yards of thirty-six-inch material, or three and three-fourths yards of fifty-four-inch. Width around bottom, four yards. A good skirt for linen or heavy cotton. The price of this pattern is ten cents

No. 2659—Basque: Waistcoat Effect

32 to 44 bust. Quantity of material required to make this basque in 36-inch bust, two yards of thirty-six-inch width, or one and one-eighth of fifty-four-inch, and five-eighths yard of contrasting material. The price of this pattern is ten cents

No. 2697—Adaptable Circular Skirt with Tunic

24 to 32 waist. Material required to make this skirt for 24-inch waist, five and one-half yards of thirty-six-inch material, with one and one-half yards of lining. Width around the bottom in 24-inch waist, two and one-half yards. Price of pattern, ten cents

No. 2731—Misses' Bolero Jacket: Three-Quarter Sleeves

14 to 18 years. Quantity of material required to make this jacket for 16-year size, one and three-fourths yards of thirty-six-inch material, with one-fourth yard for collar. This coat would make up well in linen or a heavy cotton. The price of this pattern is ten cents

No. 2732—Misses' High-Waisted Circular Skirt with Yoke

14 to 18 years. Quantity of material required to make this skirt for 16-year size, four and one-half yards of thirty-six-inch material. Width around bottom in 16-year size, three yards. Skirts in yoke effect are the vogue this season. The price of this pattern is ten cents



No. 2729
No. 2730

No. 2731
No. 2732

Evening Dress and Street Suit for Misses

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A Tired Mother

More About the Life of The Child at Home

By Helen Johnson Keyes

What I Have Said Before

I HAVE undertaken to improve the home conditions of the children in our village.

First, I adopted Rosaltha, who, as the neglected member of a large family, was making a bad record for herself in school among her playmates. After having her adenoids and tonsils removed and her eyes straightened with glasses, she began to grow into a wholesome and very practical little girl.

My next step was to start what I called the "School of Play," where children who were between three and seven—and Rosaltha, who was nearly nine—were developed by the training of their five senses in the way Dr. Montessori has taught us.

The next phase of my work was taking the children into our homes to act as helpers. The training in cooking and housework which they received in the School of Play thus became practical. And the children became efficient.

MRS. KEYES.

FOR a whole week little Marcia Maddock had stayed away from our School of Play. My inquiries over the telephone had received such curt replies that I made up my mind to go to the house and find out what had disturbed the good temper of the family. I told Rosaltha and Billy that they could walk along with me.

Rosaltha's figure looked unusually bulky as she struggled to button her coat. "Maybe the dust in her house makes her cranky," she remarked, as if to explain her own suddenly corpulent chest. "Dust's more choking to the temper than any other calamity. Thought I'd take along some dusting rags and a whisk broom cut up to a point for the corners. Them's a family's never consider corners nor tops of anything."

"I don't think we want to look as if we'd come to—to sweep and garnish them, Rosaltha. This is just a neighborly call, you know. Probably I sha'n't let you go into the house. Well, take your cloths and brush if you want to."

The Maddocks' house had been recently painted a bright yellow. It sat upon a little hillock, and there was no tree near and nothing to suggest that any bit of greenness or bloom would burst into life when spring whistled. Behind it stretched an unkempt poultry yard with a good deal of wire netting, a profusion of loose feathers, several rusty pans, and here and there a fowl.

"Play around outside, children," I said. I had knocked three times before the door was finally opened by Mrs. Maddock, who wore a purplish kimono and a face of somewhat the same hue. She led me through two rooms which had evidently suffered disarray for the purpose of a cleaning, but the cleaning had halted almost before it began.

The only things which seemed to be in working order were the fires.

Oh, yes, there was one more thing at work—Marcia, little three-year-old Marcia—who was breaking up into bits innumerable pieces of dead wood. Bark, fiber, and dust lay from one end of the ingrain carpet to the other. These twigs had scribbled upon Marcia's sticky face an intricate design of brown streaks and blotches; her dress was grimy, and her hands would have served as glue brushes without application to the glue pot.

I was smiling just as you would do if I could draw you a cartoon of the solemn, sticky little girl and the floor around her, when I felt a chill run down my spine and all my blood flow backward.

With a hiss—I can't call it anything less snake-like—Mrs. Maddock jerked Marcia from the floor, shook her in a whirlwind of rage, and slapped and banged her face and ears until the insane temper was spent. Then she pushed the yelling child into a chair and turned toward me, shame and exhaustion in every line of her sagging body.

Neither of us spoke. At last I said: "Do you mind if I take Marcia in my arms for a little while?"

Mrs. Maddock broke into wild weeping. "Give her to me! Give her to me!" she cried. "You needn't think I don't love her. But I'd just swept the room and got her tidy, and I've done a big wash already, and we don't have no water in the house; and there's dinner to get by twelve o'clock, and me so tired, and—oh dear, oh dear, I'm a wicked woman! Marcia dearie, you do love me, don't you?"

Both of them were sobbing with those terrible sobs that catch the breath and wring the eyes dry.

I thought that I should lose control of myself too. I believe the only thing that steadied me was the realization that something must be done at once to re-

lieve the exhaustion of this poor woman whom I had ceased to blame but whose condition, the result of overwork and no amusements, was so near insanity that the child was in danger with her.

I could not go on indefinitely adopting children as I had Rosaltha, and so—

And so I saw in a flash that we must begin behind the children with their mothers, until all our homes were sufficiently comfortable to maintain their households in sanity and cheerfulness. The kitchens must have running water and devices to make work easier, and there must be books and phonographs and radiotelephones in the village and means of getting together to enjoy them. That is the only way to make good children—give them happy mothers.

I was almost staggered by the thought of how complex a task I had undertaken when I attempted to secure a better training for our children at home. The big rural-school problem seemed to me at that moment small compared to the one I was trying to solve.

In the meantime, while my mind whirled in a medley of plans, I persuaded Mrs. Maddock to let Marcia go back to my house with Billy. After this I put Mrs. Maddock to bed, called Rosaltha in to help me, and set about preparing dinner.

Rosaltha was thoroughly happy over this development and, disburdening her dress of cheesecloth and bristles, plunged into the kitchen, where we soon had a good dinner in preparation. But it was a dreadful kitchen, big and cold, with many of the utensils broken and all of them scattered to the four corners, so that it took longer to find them than to use them when found. I was so tired and irritable myself before the meal was ready that I could have shaken—not a baby, indeed, but the cat who was always meowing under my feet.

There was no meat, and so we made quite a good dish of stale bread cut into cubes and arranged in a deep dish in alternate layers with grated cheese. Over the top we poured a cup of milk with an egg beaten in it. When it was baked the odor and the flavor were so savory that Mr. Maddock and the four school children who arrived just then came thumping amiably into the kitchen. I never saw five funnier expressions, however, than those which suddenly appeared on those five faces when they saw us.

"Mrs. Maddock is sick in bed with a sort of chill," I said, "so we came to cook your dinner and leave you some supper, while Mrs. Maddock rests up a bit. If you like our dinner, maybe we'll come again."

They were pretty grouchy about everything except the dinner, which was really rather good, with some potato chips and stewed tomatoes served with the "Cheese Betty," and a boiled maple-syrup custard for dessert.

When Mr. Maddock was well fed I asked him if he would allow Rosaltha to stay for a few days to help Mrs. Maddock.

After opening and shutting his mouth several times, absolutely too astounded to articulate a sound, he snapped it together with a noise which I interpreted as yes, and then stamped his way out of the house. The children seemed to consider the situation uncanny, and fled too. I looked at Rosaltha apologetically. What if she objected to my plan? Her eyes were traveling from dingy ceiling to littered corners.

"Keep her in bed four days," she said, pointing upward with a thrust of her thumb. "I can get it real nice in four days. Maybe she'll feel good when it's clean."

\$200 for a Name



\$200 cash for the most catchy title for this 1916 Pompeian Art Panel. Only top-half shown here. Size 28 x 7 1/2 in. In colors. Ready Oct. 1, this year. These titles may suggest better ones: "Phyllis"; "A Symphony in Pink"; "His Letter"; "Yes or No"; "The Pompeian Glow of Youth"; "A Bit of Sunshine"; or any title about this maid with beautiful eyes and glorious Pompeian complexion, reading a letter in this sunny, flowery corner. (Ask your family—two heads are better than one.)

RULES. 1—Write your title of 5 words or less at the top of a sheet of paper; then your name and address; absolutely nothing more on the sheet. Only one title per family. 2—Contest closes April 17, 1916. 3—Winner announced in May 29 Saturday Evening Post. Contest is free, but you may enclose with your title the coupon below, or you may send coupon without title. Study points below for ideas, and don't miss rare coupon offer.

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Where Ponies Come From

Their Home Life Explains Why They Have So Much Real Intelligence

By Judson Strong

WHY do ponies have so much more brains than a horse?" I asked the man who knows all about ponies.

He smiled and motioned to me to sit down so that we could talk it all over. "That's an interesting question," he said, "and I might answer it by saying, 'For the same reason that country boys have more brains than city boys.'"

"But what do you mean?" I said.

"Well, you know the city boy is usually brought up pretty carefully. He has a lot of people around him all the time, looking after him. He isn't left alone very much; he doesn't have to decide very many questions for himself, and so, of course, he doesn't have much chance to develop independence. The country boy, on the other hand, is left alone a good deal of the time. He doesn't have anyone to decide for him. He has to shift for himself, and that's why he learns to think and to take care of himself almost anywhere.

The Pony is a Safe Playmate

"Now there is the same difference between a horse and a pony. The horse is born in captivity, and is brought up very carefully under artificial conditions. But the pony—why, he isn't brought up at all! He just grows—as wild and as care-free and as self-reliant as the winds. That's why the pony is so much more intelligent than the average horse, and why boys and girls can play with ponies with such perfect safety.

"Do you know where the ponies come from? Well, sir, just take down your geography and look for the British Isles, that is, England, where the war is being fought now. If you'll follow up the coast of Scotland you'll find a little dot in the ocean which looks like a cork floating around on the water. Well, that is the Shetland Islands where the ponies come from. On the map it looks almost as though you could jump from Scotland right over to the Islands. But you can't. It takes a day and a half on the boat, and often the weather is so stormy that the boats are very much later. When you finally do arrive you are in the most curious country you ever saw.

"There are no trees on the Islands. The heavy salt air seems to be too strong for them; or perhaps it's the wind. Anyway, the landscape looks very bare to a boy or girl who is used to the rich thick



Is it any wonder that the boys and the girls like ponies?

woods of our country. But the people are very different from the landscape. They are as hospitable and friendly as can be. Most of them along the coast are fishermen. But back in the center of the country, among the rugged hills, are the men who raise the Shetland ponies.

"Did you ever notice how rough and heavy the Shetland's coat is? It's lucky for him that Nature has taken care of him that way, for on the Shetland Islands the ponies run loose all winter, with no shelter at all except their own warm coats.

"And that is why, also, they have so much brains. There is no one to look after them, no one to protect them from their enemies. They have to think out their own problems by themselves and keep themselves safe by their own wits. For hundreds and probably thousands of years they have done that. Each generation of ponies has

grown a little stronger and a little wiser, until now the Shetlands are noted around the world for being the bravest and strongest and brainiest little horses in the world.

"There aren't so very many of them in the world anyway. On the Shetland Islands there are only 4,000 of them altogether; and while some are raised in this country the number is not nearly as great as the number



The pony is self-reliant. He is intelligent. He can do things

of other boys and girls would give almost anything to possess. There can't possibly be Shetlands enough to go around to all the boys and girls who want them. Those who do have them are very, very lucky.

"A Shetland pony is the ideal pet for a boy or girl. He is so very wise that he knows too much to run away or be scared by anything unusual. He doesn't rear and shy the way a big horse so often

does. A boy or girl can drive him miles away from home and never have the least fear of anything unpleasant happening.

"Then, too, the Shetland ponies are marvelously strong. Living outdoors makes a boy or girl strong, as you know. Think how strong all boys and girls would be if they had lived outdoors all their lives, even in winter! That's what ponies do, and that is why they can carry a load of boys and girls that would make a big horse work.

"And ponies are also the gentlest pets in the world. They seem to know that boys and girls are their friends. The men who know all about ponies say that they have never heard of a case of a pony purposely kicking or biting his little master or mistress. They seem to understand that boys and girls love them. They learn to draw a buggy much easier than a horse does, and they are as willing as they can possibly be.

How Horses Help Us

"It's a wonderful thing how many of the great events of history were performed by men on horseback. You know Alexander the Great had his famous horse Bucephalus, who carried him through all his battles until he had conquered the world. Paul Revere took his famous ride on a horse which aroused the patriots to fight against the British at Lexington and Concord. If Sheridan hadn't had a horse he couldn't have made his famous ride

Up from the South at break of day.

There seems to be something about the companionship of a horse that helps a man to be brave and do brave things. And of course the pony does for the boy or girl what the horse does for the man. You never see a boy or girl with a pony who is a coward. You never see one who is cruel or thoughtless or impatient when it comes to work. The pony helps the boy or girl to do his best just as the boy or girl helps the pony to do his best. They help each other.

"It's a long, long way to the Shetland Islands where the ponies come from. They are lonely until they find a boy or girl to love them and take care of them and be their master or their mistress. And the boy or girl whom they love and serve is a very lucky boy or girl."

Winter Beauties

To Get the Flowers You Will Want Next Season, Start Now

By Mrs. Georgia T. Drennan

IN ORDER to have beautiful chrysanthemums of all colors and of various classes, the plants should be bedded or potted in early summer.

From the last of May till the middle of July young plants can be successfully grown. They come by parcel post from the dealers, full of active roots, and if watered and shaded for a few days when first put out they never seem to know they have been transplanted. The soil must be mellow and friable, but not too rich.

It is a decided mistake to enrich

chrysanthemums heavily in spring and summer. That induces rank growth and heavy foliage without profusion of flowers. Fall is the time to top-dress the roots with manure.

All during the summer, hoe and slightly hill up the soil and nip out the ends of the plants as they shoot up to make them branch. Every branch will have blooms.

Chrysanthemums in pots and boxes need exactly the same kind of soil as those out in the garden. They all have surface-feeding roots in constant growth, therefore are thirsty plants.

Water freely, and mulch with grass clippings, dried or cured cow chips, crumbled to bits, or decayed leaves, all through the summer and on into September.

I am very partial to late chrysanthemums. They come when flowers of all other kinds are scarce. They are the most lasting and beautiful flowers to be had for Christmas.

Winter Gem and Christmas Cheer are two superb varieties that defer their bloom time till late in autumn. They

both begin to bloom the latter part of November, and continue through December in the highest degree of perfection. Large, full, double, and fluffy, they are not eclipsed by flowers of any class for winter. And no plants of any other strain, making such adequate returns, are so easily managed. The simplest and surest plan is to get potted plants from the florist at any time from summer till just before Christmas.

Christmas Cheer and Winter Gem are well supported on long, stiff stems which may be cut with foliage, which with both plants is rich, bright green.

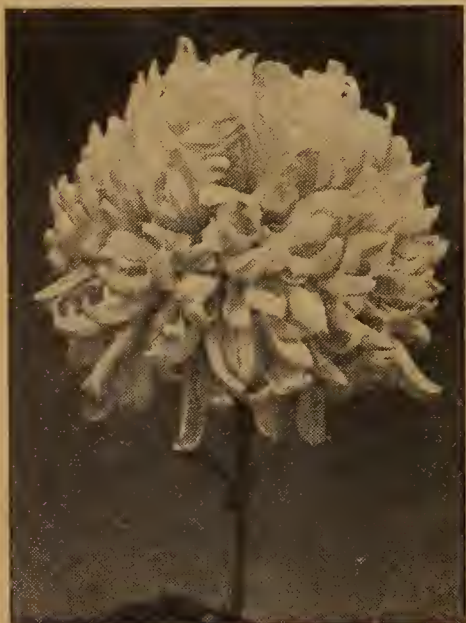
Chrysanthemums for Christmas are easily available, and even in the hands of a floral novice may be depended upon for enlivening Christmas and New Year's with superb sweet and showy blossoms. Chrysanthemums all have an indefinable wild-woody odor, refreshing and enjoyable, but by no means such a perfume as have carnations, heliotropes, and other fragrant flowers. For that reason they are to be recommended for blooming indoors.

Smith's Advance, magnificent in pure

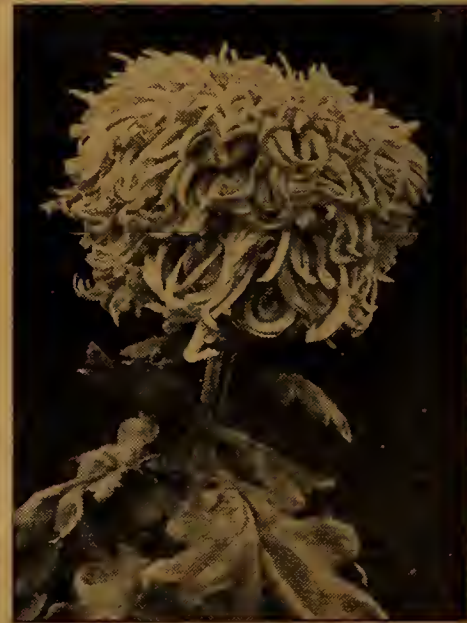
white, usually begins to bloom in July.

Glory of the Pacific, in bright pink, and Col. Appleton, in shining yellow, leave nothing to be desired in the way of very large, full, fluffy flowers for those who prefer the early bloomers.

The hardiest of all chrysanthemums and the kinds that can be grown in exposed positions in cold climates, blooming with undeviating certainty in great profusion, are the pompons or buttons. They are white, yellow, and red in different shades, medium to small sizes, but full and double.



Winter Gem—snow-white and a favorite in the late season



Christmas Cheer, another late bloomer. This variety is rose color

FOR the orchardist, for the person interested in good fruit, for the producer and the consumer—next issue—A. T. Henry will give the story of his Connecticut fruit farm. Mr. Henry has raised peaches and made money right where others would have failed. In this article secrets of his success will be given.

Don't Waste Your Strength



WHEN women continue to sweep their carpets in the old-fashioned way it is because they are not convinced there is a better way—that in the Bissell sweeper lies relief from their bondage of drudgery.

BISSELL'S
"Cyclo" BALL BEARING
Carpet Sweeper

is the final effort of 38 years in the exclusive manufacture of carpet sweepers. It will make your sweeping easy and save your carpets. The Bissell is truly the handy, inexpensive cleaning device for every day use. Ask the woman who owns one. An extra sweeper for upstairs will save steps. Let us mail you our booklet "Easy, Economical, Sanitary Sweeping." Bissell sweepers are sold at all the best stores at \$2.75 to \$5.75.

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EARN YOUR VACATION EXPENSES

Perhaps you want to visit the San Francisco Exposition or the Panama Canal or New York City or some other place of interest. By interesting your friends and neighbors in *Woman's Home Companion* or *The American Magazine* you can earn your expenses just as hundreds of others have done. Let me tell you how.

Chief of Subscription Staff,
The Crowell Publishing Company, Springfield, Ohio

MAKE \$2100 PAT. JAN. 30, 1914

NEXT SATURDAY \$1.50 SELLING PRICE

AGENTS COINING MONEY

Brand new proposition. The **Wendell Compressed Air Washing Machine**. Excels work of high-priced machines. Weighs but 2 lbs. Customers Excited, Profit 200 per cent.

AMAZING INVENTION WORKS LIKE MAGIC

Cleans tub of clothes in 3 minutes. Squirts hot water and suds back and forth through the clothes driving the dirt right out. A child can use it. Mr. F. Hughes, of San Francisco, made \$21 first 8 hours.

T. F. Speakman, our agent at Gainesville, Ala., put 36 machines out on trial. All were kept and paid for. Profit \$30 in 2 days.

L. M. Palmer, Glen Allen, Ala., put 108 Machines out on trial. Sold 107. Profit nearly \$100 in 5 days. Act quick. Territory going fast. Business supplies the capital. Write today. We want 200 more Agents, General Agents, Managers. **WENDELL VACUUM WASHER CO.**, 718 Oak Street, Leipsic, Ohio

Sympathy

By Arthur Wallace Peach

SHE had no gift that wins men's open praise,
But every life that touched hers lived anew,
And worshiped her in each heart's secret place
With love and trust that ever deeper grew.

Great gifts there are of beauty and of mind,
Of voice and skill, that men seek eagerly;
But greater gift than this no one shall find—
The understanding heart of sympathy!

The Brown Mouse

Continued from Page 22

have to stand. I can prove—and so can the six or eight pupils in the Woodruff School who have been working on the cream question this winter—that we could make at least six cents a pound on our butter if we had a co-operative creamery and all sent our cream to it.

"Well," said Ezra Bronson, "let's start one."

"I'll go in," said Olaf Hansen.

"Me too," said Con Bonner.

There was a general chorus of assent. Jim had convinced his audience.

"He's got the jury," said Wilbur Smythe to Colonel Woodruff.

"Yes," said the Colonel, "and right here is where he runs into danger. Can he handle the crowd when it's with him?"

"Well," said Jim, "I think we ought to organize one, but I've another proposition first. Let's get together and pool our cream. By that I mean that we'll all sell to the same creamery and get the best we can out of the centralizers that way. We can save two cents a pound that way, and we'll learn to co-operate. When we have found just how well we can hang together we'll be able to take up the co-operative creamery with less danger of falling apart and failing."

"Who'll handle the pool?" asked Mr. Hansen.

"We'll handle it in the school," answered Jim.

"School's about done," objected Mr. Bronson.

"Won't the cream pool pretty near pay the expenses of running the school all summer?" asked Bonner.

"We ought to run the school plant all the time," said Jim. "It's the only way to get full value out of the investment. And we've corn-club work, pig-club work, poultry work, and canning-club work which make it very desirable to keep in session with only a week's vacation. If you'll add the cream pool it will make the school the hardest working crowd in the district and doing actual farm work too. I like Mr. Bonner's suggestion."

"Well," said Haakon Peterson, who had joined the group, "ay tank we better have a meeting of the board and discuss it."

"Well, darn it," said Columbus Brown, "I want in on this cream pool, and I live outside the district!"

"We'll let you in, Clumb," said the Colonel.

"Sure!" said Pete. "We hain't got no more sense than to let anyone in, Clumb. Come in, the water's fine. We ain't proud!"

"Well," said Clumb, "if this feller is goin' to do school work of this kind I want in the district too."

"We'll come to that one of these days," said Jim. "The district is too small."

Wilbur Smythe's car stopped at the distant gate and honked for him, a signal which broke up the party. Haakon Peterson passed the word to the Colonel and Mr. Bronson for a board meeting the next evening. The picnic broke up in a dispersion of staid married couples to their homes, and young folks in top buggies to dances and displays of fireworks in the surrounding villages. Jim walked across the fields to his home—neither old nor young, having neither sweetheart with whom to dance nor farm to demand labor in its inexorable chores. He turned after crawling through a wire fence and looked longingly at Jennie as she was suavely assisted into the car by the frock-coated lawyer.

"Did you see what he did?" said the Colonel to Jennie as they sat on the Woodruff veranda that evening. "Who taught him the supreme wisdom of hold-

ing back his troops when they grew too wild for attack?"

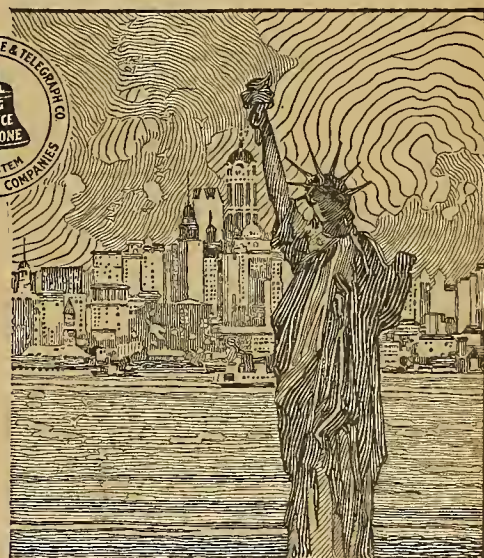
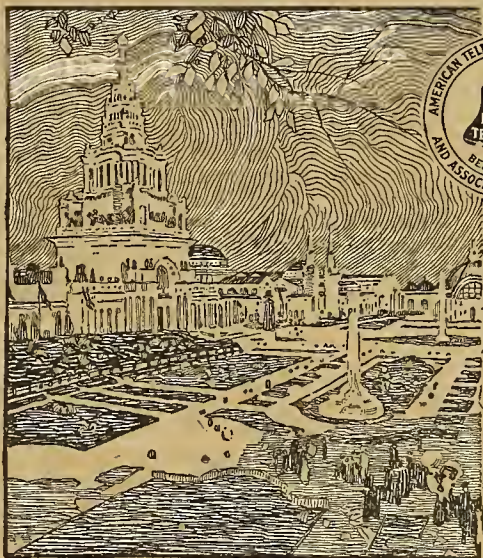
"He may lose them," said Jennie.

"Not so," said the Colonel. "Individuals of the brown-mouse type always succeed when they find their environment. And I believe Jim has found his."

"Well," said Jennie, "I wish his environment would find him some clothes. It's a shame the way he has to go looking. He'd be nice-looking if he was dressed anyway."

"Would he?" queried the Colonel. "I wonder, now! Well, Jennie, as his oldest friend having any knowledge of clothes, I think it's up to you to act as a committee of one on Jim's apparel."

[CONTINUED IN NEXT ISSUE]



Creating a New Art

At the Centennial Exhibition at Philadelphia, the exhibit of the Bell System consisted of two telephones capable of talking from one part of the room to another.

Faint as the transmission of speech then was, it became at once the marvel of all the world, causing scientists, as well as laymen, to exclaim with wonder.

Starting with only these feeble instruments, the Bell Company, by persistent study, incessant experimentation and the expenditure of immense sums of money, has created a new art, inventing, developing and perfecting; making improvements great and small in telephones, transmitter, lines, cables, switchboards and every other piece of apparatus and plant required for the transmission of speech.

As the culmination of all this, the Bell exhibit at the Panama-Pacific Exposition marks the completion of a Trans-continental Telephone line three thousand four hundred miles long, joining the Atlantic and the Pacific and carrying the human voice instantly and distinctly between New York and San Francisco.

This telephone line is part of the Bell System of twenty-one million miles of wire connecting nine million telephone stations located everywhere throughout the United States.

Composing this System, are the American Telephone and Telegraph Company and Associated Companies, and connecting companies, giving to one hundred million people Universal Service unparalleled among the nations of the earth.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

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One System

Universal Service



"Let the Gold Dust Twins do your work" is much more than a popular phrase. It is based on truth, an actuality, for

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Gold Dust should be used for cleaning and brightening everything. It is the only washing and cleaning powder needed in any home.

Use it for washing bathtubs and bathroom fixtures, cleaning and brightening pots, pans and cooking utensils, cleaning and freshening linoleum and oilcloth, washing glassware—in short, use it to clean and brighten everything.



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When Mamma is Sick

When mamma is sick or tired or too busy to make something good for dinner, somebody else—one of the children or anybody—can make up some Jell-O. It doesn't have to be cooked, and there is no chance of making a mistake.

In every city and big town

JELL-O

is served in nearly every home, and it is becoming almost as common in homes on the farms.

It takes the place of many other things, and it saves a vast amount of time and expense.

Jell-O is made in seven pure fruit flavors: Strawberry, Raspberry, Lemon, Orange, Cherry, Peach, Chocolate.

Each in a separate package, 10 cents, at any grocery or general store.

Dozens of the most beautiful and delicious Jell-O desserts are described in the Kewpie Jell-O Book for which Rose O'Neill, the famous "mother of the Kewpies," has made some of her greatest Kewpie pictures. A copy of the book will be sent to you free if you will write and ask us for the Kewpie Jell-O Book.

THE GENESSEE PURE FOOD CO., Le Roy, N. Y.

The name JELL-O is on every package in big red letters. Be sure you get JELL-O and not something else.



Advertisement for Railroad Style watch, 98 cents, 5 year guarantee. Includes image of the watch.

Advertisement for PARKER'S HAIR BALSAM, a toilet preparation of merit. Includes image of a woman's head.

Advertisement for AGENTS MEN AND WOMEN MAKE \$6 A DAY. Includes image of a product box.

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

Advertisement for FREE Linene COLLAR, state size on postal and whether you want collar like cut or low turnover style.

Advertisement for Wanted Travelling Salesmen, experience unnecessary, earn big pay while you learn.

Advertisement for THIS 1915 Model Ranger bicycle, 30 days free trial, extraordinary offer.

What You Can Do With a Fireless

By Rose Seelye-Miller

YESTERDAY we baked bread in a fireless cooker. We have baked batter puddings several times, and they come out as light as can be.

We have found that one needs to follow explicit directions regarding the preparation of foods for cooking by fireless, and anyone who can do just as she is told can succeed with such a cooker.

For cooking vegetables they are fine. And, as far as we can estimate, such cooking saves at least from one half to three fourths of the fuel which would otherwise be used.

Fifteen minutes for heating the radiators and vegetables is ample, and probably more than is usually needed, and the best of it is that vegetables cooked therein cook in just about the same length of time required for cooking over an actual fire.

No harm is done even if things are left in longer than the allotted time.

For harvest meals at home the fireless cooker is a boon. If the men are late the meal remains in the cooker until serving time comes, and the food comes out piping hot.

The dinner is placed within it and the cooker carried to them. Whenever the food is taken out it is hot and appetizing.

For automobiling, too, it is most practical. A section of a cooker can be put in the car, with any food desired, and a hot picnic dinner can be had a thousand miles from a lemon, as the saying goes.

But the home is the place to enjoy the fireless cooker to the full. The heat is minimum, and the cooking power maximum. Once the dinner is put to cook, there is no more attention required—it just cooks itself, and one can roast or fry meat or chicken or turkey.

The deliciousness of cereals so cooked is really the revival of the old-time cooking in a brick oven, in which the fire was made, the oven heated, the fire removed and the endless pies, bread, and so forth, of old times were put within the capacious oven for cooking just from the heat of the stones or bricks used in constructing the oven.

If you are not quite sure you would like it, just try it for a time. Every maker of a fireless cooker offers to allow a trial of thirty days.

Until you learn, do not experiment; afterwards if you are inventive, why, then try out your own schemes.

The fireless cooker has come to stay.

I Am Patrocena

[CONTINUED FROM PAGE 25]

Now, it would avail me nothing to shoot this man who was so brave that he did not even draw his own revolver when my revolver threatened him, and it would be taking human life. So I waited.

"Please do me the great honor to take my arm," he said, and I actually complied, and we started down. But I hesitated, and before I knew it this giant of a man had lifted me in his arms and was carrying me as easily as if I were a little child.

Two of the men separated from the others. They were talking animatedly. One of them was very big and the other was much smaller. For some reason I turned my whole attention upon these two.

Frequently they both turned to look at me. Plainly I was the subject of their debate, and I had to smile at this thought. Will there ever be, has there ever been a woman who would not feel flattered at seeing two men argue about her?

The larger man seemed to be very determined about something, for he struck his fist into the palm of his hand with such force that I could hear the sound. The smaller man shrugged his shoulders and gesticulated and moved about nervously.

There was something about each which attracted me. The argument waxed hotter and hotter. Both were becoming vehement, when suddenly the smaller man stood on his tiptoes to say something in the ear of the taller man.

"Why, why, curse your measly picture!" said the big man, advancing toward his companion. "You fooled us all, eh?"

The big man by motions of his long arms made them form a circle around the two central figures in the drama. Then the big man began to talk in so low a voice that I could hear only a word here and there.

"Take him," said the big man—where had I heard that voice? "Take him, buddies," and those who did not understand the Americano's words showed that they understood his gestures by quickly binding the small man.

In much less time than it takes to tell it the band of revolucionarios were riding away with their prisoner, and the big man turned to me. He removed his wide hat—and I stared at him. He stopped still in his tracks.

"Señorita Flores!" he breathed. I interrupted him by a gesture. I pushed back my hair which was partly concealing my face, and I lifted my face so that the moon and the stars might shine into my eyes to show the adventurous football hero, who had joined the revolucionarios, that it was I, Patrocena, who stood before him—and who welcomed him by holding her arms out to him.

And even you, my confidantes, my pen, my paper, and my ink, shall not be told of the exquisite joy of the next few hours.

Home Rule

By Charles B. Driscoll

COME weep with me, my gentle friend, and bring a gunny sack to catch the wet tears as they fall, while I cry, "Woe! Alack!"

I weep for Erin's sons oppressed, who fought for many years to win home rule. At last they've won, and beaten Britain's peers. What makes me weep for Erin's sons is this, my gentle friend: They're crushed beneath the landlord's heel, their necks in homage bend.

I live in free America, where each man is a king, and I can weep for whom I please and make the welkin ring. So while the welkin's ringing loud, as ne'er it rang before, let's invoice just a little bit so we may brag some more.

But thirty in a hundred of Irishmen, they say, hold title to the land they till. Alas! Alackaday! True, things are growing better upon the Emerald Isle.

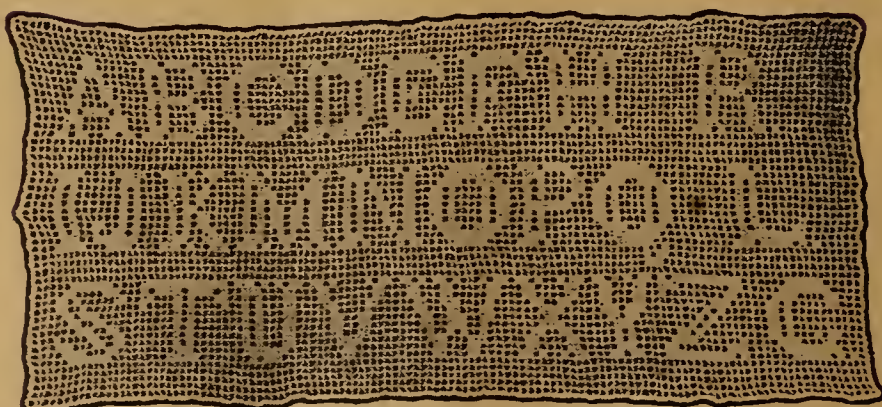
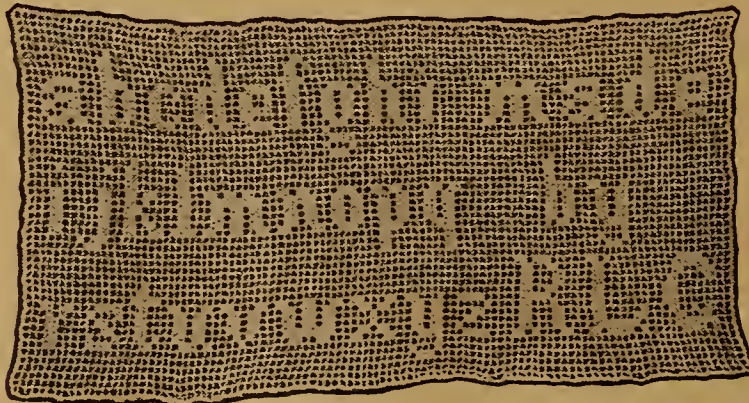
The worker will own all the land he cares to after while, for laws that

have been made for him are giving him a chance, and soon the Irish peasant won't have patches on his pants. He's buying land with tiny sums which he has learned to save, and landlords have to sell to him, although they sometimes rave. The price of Patrick's little farm is fixed in legal way, and no large-stomached absentee can tell him what to pay.

Of every hundred farmers in our Land of the Free there are thirty-seven who pay rent, but that's not peasantry. Next year there will be forty-four, and the next year forty-eight, and constantly the tenants howl and think and agitate. They think they are in rotten luck, they're homeless once a year. They are very, very selfish, and they want too much, I fear. They cry when one half of their crops goes to the landlord's bin, instead of crying, "Glory! What a country we live in!"

There are no peasants in our land. May God help Erin's Isle! And may He help us freemen to have home rule after while!

Write With a Needle



YOU can write the name of your dearest friend with a crochet needle; you can write a whole love letter on a bit of lace. The message will make a sofa cushion, bureau scarf, or pincushion beautiful. For full directions send a stamped and self-directed envelope to Evaline Holbrook, in care FARM AND FIRESIDE, Springfield, Ohio.

Famous People as Your Guests

By Mary H. Talbott

"TURN on the music, Ma, and let's have an old-timer to-night," said my host as we sat on the porch of the old farmhouse.

He was tired after a day in the field, and as the strains of one beautiful melody after another floated out to us I realized what music can mean to the isolated family. The opportunity to hear good music has been denied thousands whose souls are filled with love and appreciation of it. Concerts, operas, oratorios, were for the few only until the talking machine and the piano player put the wonderland of music on a wishing carpet which will travel the country over.

A child can operate both the phonograph and the piano player, and in this fact lies one of its greatest blessings. Country children of to-day understand and love music compositions of which the older generation knew nothing.

While the piano player is mechanical it affords opportunities for individual expression. On every record for these players there is a guide showing just how it should be played.

Records of this kind are necessarily expensive, but if several families owning machines will club together for their purchase, and then circulate them, the cost is very small to the individual.

There are piano-player record libraries which you can join by paying a yearly fee of \$20, and which furnish a change of rolls as often as desired.

Of course such libraries are not feasible for phonograph records, but co-operation among friends can make the records very inexpensive. If five families, say, purchase twenty records costing a dollar each, the price of a record will be but 20 cents to each.

During the long winter evenings it is especially desirable that young folks be provided with entertainment, and in this the talking machine can play a very valuable part. Special records are manufactured for those who enjoy dancing, and one can purchase both round and square dance music. In the case of square dances the calls are included.

It is not at all difficult to get up an interesting program for any special occasion. In one village a very patriotic Fourth of July was celebrated without the disastrous firecracker being in evidence. There were Lincoln's Gettysburg address, patriotic songs, and a folk dance on the green.

In my own home, Christmas time is filled with music especially adapted for this joyous season. The chimes ring out their glad message in the morning and hallelujahs fill the air during all the day.

Some of the most beautiful music in the world is to be found in the great oratorios, records of which can be purchased. Some of the most beautiful of these are: From "Elijah," by Mendelssohn, "Hear Ye Israel" (soprano), "It is Enough" (baritone); from "The Creation," by Haydn, "With Verdure Clad" (soprano); from "The Messiah," by Handel, "Comfort Ye My People" (tenor), "Hallelujah" (chorus), "I Know That My Redeemer Liveth" (soprano), and "The Trumpet Sound" (bass); from "The Redemption," by Gounod, "Unfold Ye Everlasting Portals" (chorus). Often in churches where the choirs are not equal to such work, phonographs are substituted to produce these anthems.

Graded lists of records for use on the phonograph are now published so that, just as one enters a library and asks for a book on a particular subject, one may enter a store and buy seasonable songs and dances of all nations.

In many communities where the value of "canned music" has been recognized, a mechanical instrument has been placed in the schoolhouse and has proved invaluable. Pupils in gymnastics and calisthenics step in the measures of the folk dances to the rhythm of the phonograph. In the schoolroom and on the playground classes march to the inspiring music of Pryor's Band or dance to the strains of the best orchestras in the world.

In one of the high schools of my city (Washington, D. C.) the phonograph was recently used as a help in interpreting a part of Goethe's poem, "Faust." (Geraldine Farrar's wonderful voice singing the "Jewel Song" was placed behind a girl who pantomimed the song.

Manufacturers have prepared records specially designed for school use, beginning with the kindergarten, thence through the grades of the school up to college. The highest and best of the world's music and literature of all ages is made audible to the pupils. We are passing from the era of knowing about things to knowing the things themselves. In the history of education no more vital work has been accomplished.

Ten-Second Topics

A COLLEGE professor at Ames, Iowa, has perfected a machine which will scarify the hard seeds of sweet clover, alfalfa, and the like so that the "balky" seeds will sprout. A sprouting record may be increased from 50 to 95 per cent by this method.

SUDAN GRASS yields from 1 to 8 tons of cured hay per acre.

WHEN a work horse is idle reduce his grain ration one third.

GERMANY consumes more pork than any other kind of meat.

BULLETIN 609 of the U. S. D. A. tells how to build bird houses.

SUDAN GRASS never becomes a pest like its cousin Johnson grass.

GERMAN SILVER now goes by the name of "nickel silver" in England.

FISH sausage, says a German scientist, is palatable, nutritious, and economical.

THE chief enemies of Sudan grass are chinch bugs, grasshoppers, and red-spot disease.

NEARLY two thirds of the farmers in New York State buy butter instead of making it.

WISCONSIN has over 75 pea canneries; 45,000 acres of peas are required to supply them.

THE average farm family in Kansas uses 12 loads of corn cobs a year for heating and cooking.

THE average cost of boarding a hired man on a farm is \$122 a year, according to government figures.

SOME varieties of pine in California have been found suitable for turpentine and rosin production.

Sprayed Fruit Sells

By Horace B. Parker

I AM interested in your editorials, and in the word you send from time to time as to your farm in West Virginia.

That great spring, flowing one hundred gallons a minute, would make our fortune here in Massachusetts. We have nothing of the kind; and there has been only one good rain since the last Saturday in August. September we had only 3/10 of an inch of water, where normal is nearly four inches; October, one good rain; November 16th, three inches of snow, which the dry ground absorbed as a dry sponge takes up water. Many are hauling water for home and stock.

Two years ago you said, "Do not set out any more apple trees."

The crop of 1913 was short, and 1914 has been a very large one. We never sold our fruit as easily as this season.

Our market is a manufacturing town nine miles distant. There is a good road, but hilly, and we go in two or three times a week. Our dealing is almost entirely with the grocers and marketmen. They know our fruit is to be depended upon for quality, and pay us \$2 per barrel for No. 1, \$1.50 for No. 2, and we get the barrels back. Family trade pays us \$2.50 and \$3. These last orders we select for very carefully, so that the apples will keep.

The dealers say, "There is no waste in your fruit."

We make a specialty of apples, having some 500 barrels each year. We spray four times: late March and early April with lime-sulphur for the different scales; early May with lime-sulphur and arsenate of lead for the bud moth; after the blossoms fall, with arsenate of lead for the codling moth; and three weeks later, again for the codling moth. We have a power sprayer costing \$100, a 1/2-horsepower engine, a 100-gallon tank on a steel wheel truck drawn by two horses.

We set out 600 trees last spring, and will put out the same number the coming spring.

Sprayed fruit sells.

The quality of the goods insures a sale. There is placed on the market such a lot of unsprayed apples that will bring only a low price, that dealers and consumers appreciate good, sound, sprayed fruit.

I'll Do It Next Time

I HAD the misfortune to lose 40 hogs with cholera last fall. I saved only four out of my herd, and one of them had gone through the cholera three years ago before I bought her. I didn't have any faith in vaccination, for my brother-in-law vaccinated two years ago and lost his hogs just the same, and I know of several other similar cases. But if I have another like experience I intend to vaccinate.

C. G. ALLAN, Iowa.

Look out, Iowa! Massachusetts packing companies offer \$100 a year for five years as prizes for pig clubs composed of boys between ten and eighteen years of age.

THERE is a sticky substance in the juice of cactus which makes it valuable in poison sprays. It sticks the poison to the leaf where the bugs just can't avoid their fate.

JAPAN is making and shipping violins to the United States to fill the demand which Germany has ceased to supply since the war. The instruments are of medium grade.

MANY dyestuffs are cut off by the isolation of Germany in the war. Among the new domestic dyes is a yellow one found in the wood of the Osage orange by the Forest Service.

OF THE thirteen deaths caused by football last season, only one was a member of a regular college team. Most of those fatally injured were boys under twenty playing in athletic clubs and irregular teams.

E. P. SANDSTEN of the Colorado Agricultural College says of seed-buying: "As a rule, seeds bought in the grocery stores are inferior to those obtained directly from the dealers." Many good seed houses refuse to sell to the general trade.

DOCTOR ATWATER, the famous expert on food values, has found that a child from six to nine years of age needs half as much food as a grown man. A grown woman needs four fifths as much as a man, and a boy of sixteen, nine tenths as much.

A COMPLETE kitchen is on exhibition at the Panama-Pacific Exposition. One thing it contains is a table of adjustable height. Different refrigerator linings, materials for cooking utensils, floor and wall coverings are also displayed so the housewife can judge what is best suited to her home.

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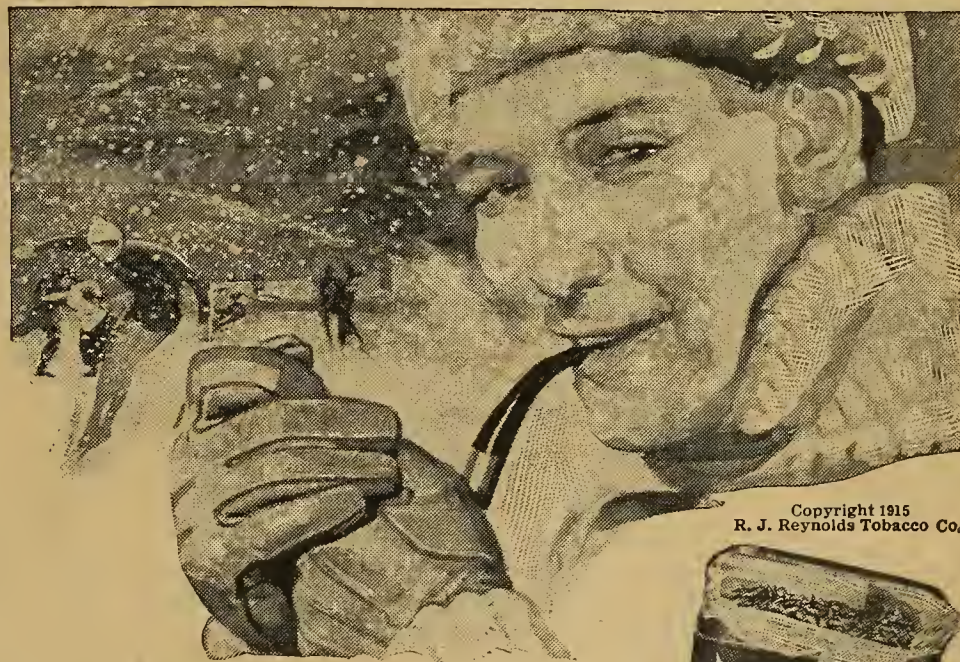
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