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THE NATIONAL FARM PAPER

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ESTABLISHED 1877

JUNE 22, 1912



O the banks of the Lee, the banks of the Lee,
And love in a cottage for Mary and me!
There's not in the land a lovelier tide,
And I'm sure that there's no one so fair as my bride!
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With the Editor

IT SEEMS like a hard struggle with adverse forces, this farming, doesn't it? We plant, and the gophers and chipmunks descend from the fences or emerge from their holes and dig up the seeds. We plant, and the crows pull up the sprouting grain. The English sparrow that visits the feed-lot may bear germs of hog-cholera, or anthrax, or roup, or any other disease—and the next development may mean the loss of the year's work. Cutworms and army-worms, chinch-bugs and Hessian fly, aphid and borer, thrips and codling-moth, smut and blight—these seem like malignant principles of evil.

As I write this I am afraid that I shall not have time from the planting of the tomatoes to "worm" my three thousand trees, and I know that if I don't I may lose a lot of them by borers. The peach-trees need the earth pulled up to a peak about each tree so that the borer moth may not so successfully lodge her larvæ on the roots. I am worried about it—for so many hands can do only so much work. I am disposed to feel rather bitter toward these manifold forms of life which vex me. But I have no good reason for feeling so. These forms of life are doing in their way exactly what I am doing in my way: seizing on every opportunity open to them for the chance to make a living.

As soon as the snow leaves the ground, with the first softening of the frost even, comes the beginning of the great Drama of Summer.

In this drama the actors are innumerable, the stage is the farm, and the dialogue is the changing notes sent forth in incomprehensible multiplicity in the expression of life.

The eyes that glance over the farm in its larger features only, loses the best of the lesson. Wheat, corn, cattle and trees are all full of the principle of life, but they are only the major chords of the great music. There are intricate minor harmonies in the plants and animals we seldom see, and wonderful overtones in those we never see except by means of the microscope. But the eye which tries to see may find pleasure and astonishment every hour of the day. Every sand-bar is as populous as Paris, and the underworld of the furrow-slice is as absorbing as the "third sub-stage" of the society of the decadent city as described by a Victor Hugo.

Where an opening appears in the bark of a tree, there life slips in and flourishes. Cut your flesh, and life finds the cut and develops in the sore. It is bad life for you, but in itself it is just life taking advantage of every opportunity. When men die of suppurating wounds, they do so by reason of the fact that they have not successfully prevented the growth of very tiny plants in their flesh. It is life against life. Gulliver tells of the triumph of the Liliputians over himself, by the device of tying him down by means of a thousand tiny ropes while he slept. So is every Gulliver's life exposed to the attacks of the Liliputians of the vegetable and animal kingdoms. They are always ready, always waiting, to grow in every place open to them.

LIFE has crowded into our very bodies, and living things grow inside us in countless billions. They have some of them adjusted themselves to a life within us which is not harmful to us—and is probably necessary to our life. All animals, with almost no exceptions, are full of growing plants called bacteria. The milk is full of them within a short time of its being drawn from the cow—and most milk has in it some of these little plants which have found their way into it while still in the cow's udder. Some of these bacteria are good for our purposes, and some bad—but they are all equally good to themselves.

Every animal and every plant has other animals and other plants which live with it or upon it. The man has a dog which lives with him. The dog has forms of life innumerable, both inside and outside. So has the man. Some are worms which have worked out a very complex life-cycle—like the hookworm which lives with its jaws fastened to the walls of the alimentary canal, and is maintained by eggs which are passed off into the ground. These eggs hatch in the ground, and when a man, if it is a man's hookworm, or a dog, if it is a dog's hookworm, steps on this ground with his bare feet, or leans on it his bare hand, or kneels on it with his bare knee, in through the skin darts the young hookworm, passes into the blood, and finally finds his way to the intestinal walls, where he takes hold and lives, as did his ancestors.

The tapeworm, the pinworm, the gapeworm in chickens—all these are wonderful illustrations of the manner in which the principle of life makes its way everywhere, each manifestation of life struggling with every other, and the fittest surviving.

In our blood are white corpuscles which are merely living amœbæ living with us for the purpose of eating bacteria. The amœbæ are little animals. The bacteria are plants. The eradication of typhoid germs from your blood by the white corpuscles is the same phenomenon as the eating of grass by a cow—it is the eating of a plant by an animal.

In the soil are the little bacteria that take the nitrogen from the air for us and place it within reach of the plants. In the soil there are little amœbæ—tiny jelly-like animals which eat these bacteria. We call the amœbæ in the blood good, because they free us of disease-germs. We call the amœbæ in the soil bad, because they eat the bacteria—the same thing for which we praise them in the blood. And we hate the bacteria in the blood because as they multiply they cause us pain and perhaps death. But each living organism is playing its own game of life—innocently, and even in the case of the scale-insect, the trichina and the hookworm—playing it beautifully.

LIFE is everywhere—in every chink, and corner, and chamber, and cranny. It is like steam under pressure—ready to rush in anywhere at the chance. It is all alike—the development of protoplasm through its power to adjust itself to conditions in its world, and to multiply. It is bad only where it injures us. And wherever it does us good, it is good—for us. Life turns over and over the grains of soil in the earth. It enters into the grain of wood. It permeates in myriad forms the tissues of animals and of plants. It is never bad. It is never good. It is just life playing the great game of life. And this principle of life moves all the characters in the immense Drama of Summer. It moves the borer moth to deposit her eggs on the bark of the tree. It moves me to worry about it. It pulls the strings which make me mound up the earth to make it hard for the larva when he attempts to get into the tree where he can live on green wood—which is a dainty feast for him.

The principle of life—did I say it is never bad nor ever good? Really it is never aught but good. For it is this principle developed to its highest which has made man a little lower than the angels. And to man has been entrusted the wonderful work, not of exterminating life—that were impossible,—but of looking over nature as you look over your farm, and saying in what way this principle of life shall be manifested. When he determines this manifestation successfully, he is the ideal farmer.

Hubert Quick

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Lime-Sulphur Bad for Potatoes

FARMERS who plan to use lime-sulphur, instead of Bordeaux mixture, for potatoes should abandon this idea for getting along with only one fungicide. The New York Experiment Station has established the fact that lime-sulphur used on potatoes dwarfs the plants and cuts down the yield. The crop sprayed with Bordeaux mixture yielded fifty bushels more per acre than the unsprayed, and the patch on which lime-sulphur was used yielded fifty bushels to the acre less than the unsprayed. This gives a difference of a hundred bushels to the acre in favor of the Bordeaux, as against lime-sulphur. Lime-sulphur for trees, Bordeaux for potatoes, seems the proper rule.

The Silo for the Small Farm

SILAGE is finding so many uses that smaller and smaller farms find the building of a silo profitable. The feeding of silage is practicable only when enough is fed to keep the top from molding. A few inches must be removed each day. By the use of a high and narrow silo, a small stock of animals may be made to eat a large amount of silage without molding. Formerly silage was used almost entirely for dairy cows; but now the fattening steers, the sheep, the horses, and to some extent the hogs and the poultry, are fed silage with perfect success. An instance is in mind of the successful feeding of silage to all the horses of a large farm during the last and hayless winter. By putting all these animals on silage, with such other feeds as will balance the ration, a very small farm may find the building of a silo a most profitable thing. It insures against short pasture, and it is the best way to utilize the best of all crops—corn.

Small Numbers May Coöperate

THE way to coöperate is to coöperate. Perhaps the movement is held back because of the fact that we are apt to think of coöperative associations as great in numbers and existing in a regenerated community. No great upheaval of the neighborhood is required. The Grimsby (Ont.) Coöperative Association consists of five fruit-growers only. At St. Catherine's, also in Ontario, the growers of fruit have formed a coöperative cold-storage company and built a little thirteen-thousand-dollar plant which does the business for them as thoroughly in all likelihood as the hundred-thousand-dollar commercial plant would do, and they get the profit of storage themselves. The way to coöperate is to coöperate, now, with your present neighbors—or so many of them as will join you. It is certainly true that we should not despise the day of small things. Twelve poor tailors of Rochdale, England, founded the immense coöperative stores of Great Britain.

Good Behavior in Federal Judges

FEDERAL judges are appointed for life and serve during good behavior. They may be removed by impeachment, but the removal is so difficult that only the grossest cases of bad behavior can be punished. There is a vast field of bad behavior which is open to the bad judge. The people can be protected against such judicial transgressors by no power save that of the high standards of the judges themselves. They may stain the judicial ermine with impunity, so far as impeachment is concerned, if they are that sort of men.

When a judge accepts the use of railway private cars, he stains the ermine. When a judge so comports himself that his sons and relatives are promoted to profitable employment in the service of railways and other great corporations, he stains the ermine. When a judge spends his vacations on fishing and outing trips with the

most frequent and most powerful litigants in the federal courts, he stains the ermine. When a judge speculates in contracts with railways and shipping companies which have or are likely to have suits to be decided by him, he stains the ermine. When a judge handles street railway or other receiverships, and after a few years is found rich by investments in these same properties—he or his connections,—he stains the ermine.

The federal judge who is fit for the place is by its acceptance set apart from ordinary means of making money, unless he is willing to stain the judicial ermine. He should become sanctified to this work, and neither he, nor his son, nor his daughter, nor his appointees, should stoop to profit through any matters even in appearance connected with the course of decisions.

Federal judges have not, in too many instances, lived up to this high standard. We mention no names, for the intelligent reader will be able to supply names from a reading of the magazines and daily papers. This fail-

A Soy-Bean Success



THE field of soy-beans pictured shows a crop forty-seven days after seeding. Grown on the experiment station farm, Wooster, Ohio, where about fifteen acres are now grown annually. Experiments made with this crop last year in South Dakota in the latitude of northern Iowa proved that the soy-bean can be made a good running-mate for King Corn much farther north than farmers have been led to expect.

Originally a native of Japan, this plant has developed types suited to the somewhat erratic climate of its native home. Several varieties, including Manchuria, Ito San, Medium Green and Guelph, are quick-maturing and hardier than others, and hence are adapted to the more northern corn-growing States. These ripen seed in from 112 to 114 days and are fit for pasturing, hay or ensiling (with corn) proportionately earlier.

Soys are growing in favor rapidly for grain and for fodder rich in protein, also for soil improvement. For catch or substitute crops this quick, upright-growing legume will make friends with the shepherd, swine-grower and dairyman. Culture and plant-food requirements are practically the same as for corn. Drill in rows twenty-eight to thirty inches apart, and allow two to three pecks of seed per acre. This year try an experimental plot, if nothing more.

ure to recognize themselves as set apart for service and cut off from money-making is the cause of the new demand for the recall of judges. Ten years ago such a thing had never been heard of.

When a minister of the gospel sets out to make money on the side, his spiritual life is usually marked for destruction. He finds that the Scriptures speak true as to the impossibility of serving both God and Mammon. The federal judge is bound by no less lofty ethics. Like the preacher, he can serve God and live on his salary, or he can serve Mammon and make money on the side for himself and his family. He cannot do both. He must be either in the world of business or out of it. He may thank himself for the growth of the new "heresy" of the recall of judges.

An income of \$1,113.11 for the seed from eighteen acres of Alsike clover, in addition to the fodder, sounds attractive. Mr. George Eisentrager of Genesee County, Michigan, secured this sum for last season's crop.

Wanted, a Name!

HONOR is another term for a good name. "A good name is rather to be chosen than great riches." But great riches are at least tangible and concrete. And honor without a term to represent it to the mind is misty, no matter how precious it may be. These thoughts are inspired by the act of the Wisconsin Agricultural College in honoring four men who richly deserve it, and in giving that honor no name. The men honored are W. D. Hoard, editor of *Hoard's Dairyman* and one of the finest figures in the agricultural annals of our time; A. A. Arnold of Galesville, Wisconsin, a master farmer in a State where there are many good farmers, and W. W. Marsh and C. W. Marsh, who invented the Marsh harvester and thereby developed the idea on which all self-binders have been based. The Marshes are also actual, working farmers.

Now this is fine of the great college which conferred honor on these men. But in doing a fine act the college simply gave the men parchments without names. The thought of giving a college degree to a mere farmer is no doubt a dreadful one, and we do not ask such a thing. But why not call it something? A French peasant by some great act of merit may secure the decoration of the Legion of Honor. Permit us to suggest to the College of Agriculture of Wisconsin that if it will call its honored farmers the Legion of Agricultural Honor, it will leave the sacrosanct preserves of the degree-holders unscathed, and will give to something which needs it a local habitation and a name. All the name these gentlemen have for the thing they got is "a parchment." An order of merit of real power for good may be instituted, if the minds of men are given a handle for their thoughts—a name.

A German inventor has put in effect a system based on the principle of the hydraulic ram, by which the waves of the sea do the pumping for the purpose of draining swamps along the shore. This should interest the Atlantic and Gulf States of this country.

Moros and American Children

THE Moros of Mindanao are the most warlike and savage of the Filipino peoples. It is a matter of pride to Americans that our government there seems to be winning them to the arts of peace. The provincial authorities have established agricultural schools, model farms, given vocational instruction, introduced improved seeds and tools, sold farming supplies to the people at cost, provided markets at fair prices and generally helped agricultural development. As a result, the Moros of ten towns in Mindanao sold twice as much produce in 1911 as in 1909. With an excellent model farm at San Ramon, near Zamboanga, as a nucleus, and, to quote from a report by Consul-General Anderson of Hong Kong, "an agricultural school for native boys in each district, and with a system of tribal farming under foreign supervision, provision is made for teaching the coming generation how to farm efficiently and profitably, not only 'pacifying' the country, but starting the people to take advantage of their wonderfully rich natural resources."

These are Moros, and on the other side of the world, Uncle Sam apparently believes in vocational education over there. But what will those legislators who oppose the Page Bill, and those agricultural college men who take the same attitude, say to excuse themselves for opposing a measure meant to give the American boys and girls as good opportunities for real education as we force upon the Moros? Why shouldn't the flag mean as good things here as in Mindanao?

Maximum Room at Minimum Price

By J. W. Griffin

THE greatest amount of space for the least expense," has been my motto in building barns. I have always tried to get all space under the roof cover in such a shape that it would be available for some purpose other than for a roosting-place for birds, a harbor for rats and mice, or a lurking place for spiders and other pests.

These plans are drawn to no uniform scale, but they are suggestive of ideas that may be developed by anyone. These plans, of a barn 36 feet long, 26 feet wide and 16 feet to the eave, with a comb elevation of 29 feet, appeal to me as suited to the small farmer who, with a few acres, eight or ten cows and two or three brood-mares, is trying to build up his soil and at the same time increase his bank-account.

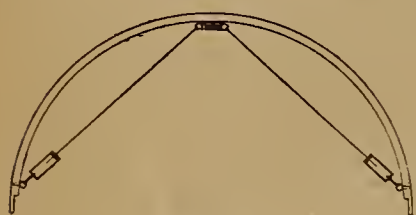
A man of this type considers the cost. He wants his money's worth. The saving, in framing this roof, is 1,000 feet of timber. As a barn is ordinarily framed, practically 2,000 feet is required for the roof.

The idea of this model was taken from the old covered wagon of the "49'ers." While it is not the exact shape of the wagon-top, it is largely so.

It is Made Like a Wagon-Top

No doubt there will be quite a difference of ideas as to the working out of these plans, but such plans as are here given can be adapted to many circumstances and conditions. They do not apply alone to Kentucky.

The Construction of the Roof: The arches, 7 of them, are placed 6 feet apart, making the building 36 feet long. The sides are 16 feet to the eave. The width of the barn is 26 feet. The diameter of the complete circle being 26 feet, one half of this is the rise in the roof at the center, the comb, which is 13 feet, making the barn from the level of the lower floor 29 feet 7 inches high. The arch is 6 inches thick. The sheeting and roofing make one inch.



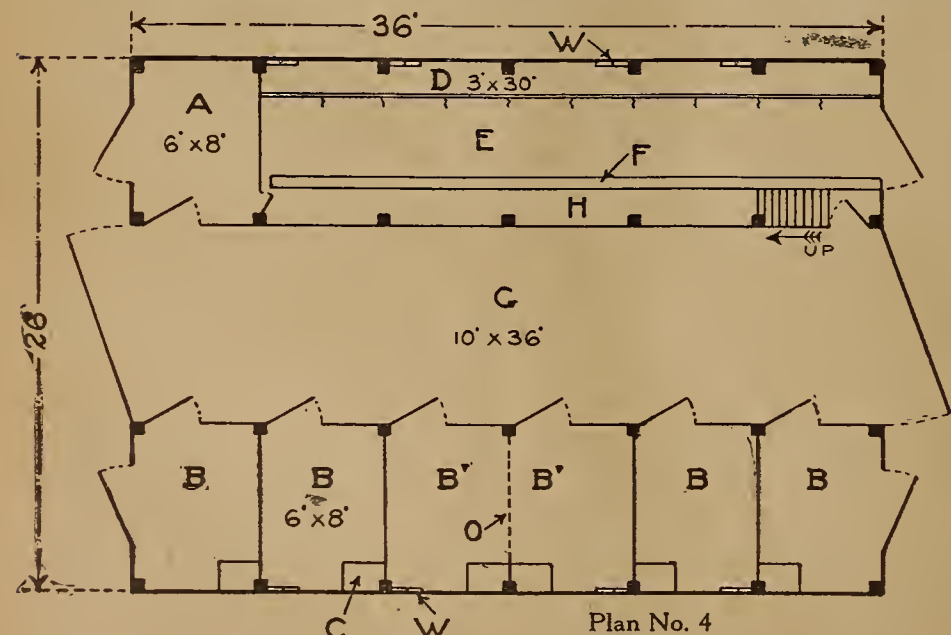
Plan No. 2

These arches are made up of 1x6-inch boards nailed together, as shown in Plan No. 3. The boards should be dressed and of straight grain. Elm, lind or cottonwood is good timber for the arches, since it is light and of a strength necessary for such building. The length of these arches, from one eave over to the other, is 39 feet, and since there are 3 feet, board measure, to each foot of the arch, there are 117 feet in one arch, or 819 in the seven. To prevent any possible expanding of the roof, the device, as shown in Plan No. 2, is used on two sets of posts, the third set from each end. These supports are 3/4-inch iron rods with screw bolts and swivel as shown.

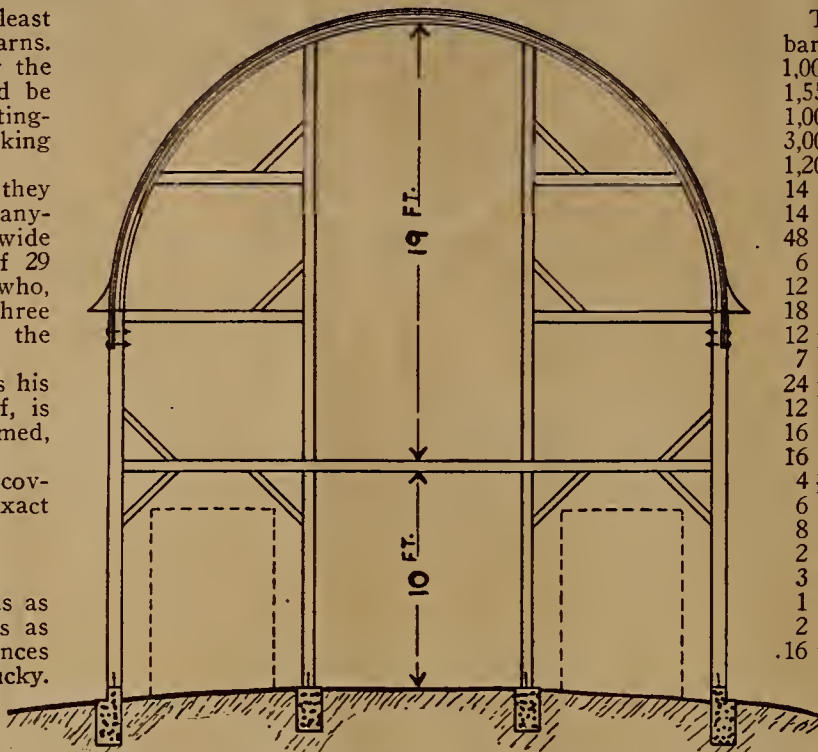
The Floors are Planned for Convenience

In Plan No. 1, we have the end framed and braced. Dotted lines show the position of the shed doors. The eave brackets, 1x2 feet in dimensions, are in position. There is a pair of these to each arch. In framing these arches to the posts, 3/4-inch bolts are used, two at each splice. The cross-ties are mortised into the posts. The braces are nailed with 20-penny nails. The bottom of each post sets over an iron pin, six inches above the concrete pillar. The pin is set in the concrete when the pillars are made.

Ground-Floor Plan: The principal advantage in building a barn of this width is that there is no lost space. Stall room for 6 horses and stanchions for 10 cows are allowed. Plan No. 4 shows this: A, calf-pen. B B, horse-stalls. B' B' may be changed into a box stall 8x12 feet, by taking out the bar partition, indicated by arrow (O). C, hay-chutes. D, feed-alley for the cows. E, concrete platform for cows. F, drain-trough behind cows, made of concrete. The trough is 1 foot wide, 2 inches deep at shallow end and has a fall of 6 inches in 30 feet. It empties into a ditch leading to the manure-pit. G, the main driveway. H, walkway behind cows. A rack for harness is located under the stairs. The feed and feed-mixing boxes are located up-stairs, as is also a cutting-box. This makes the loft convenient. Plan No. 5 shows the loft. The hay-chutes are located



Plan No. 4



Plan No. 1

along the wall and are two feet square. Those for the cows, on the other side, are the same size. These chutes extend three feet above the floor of the loft. Those for the cows drop to within one foot of the main floor, while those for the horses reach down to the mangers. The grain and bran bins can be located to suit the builder.

Plan No. 3 shows the method of framing or making the arches. The small squares represent the posts that are set in the ground in the same radius as that needed



The barn as built for Kentucky conditions

for the arches. These posts are five feet above the ground, and two or more feet in the ground. They should be very solid and set in a perfect circle or segment thereof. The arch is started by nailing a board to the inside of the row of posts. The boards should meet on a post. The next board is nailed to this one, and so on, until there are six thicknesses. In nailing these boards together, the nails should be about one foot apart, lengthwise of the board and one inch from the edges. These arches are held in position by a heavy wire, as shown in the plan. After the barn is up, the wires are removed.

How to Make the Roof

This same frame of posts is used for the seven arches. The first one should be made perfectly level. And when it is completed and the retaining wire put on, the next one may be started, and so on until the entire set is made. The arches should stay in the frame of posts for at least a month, as in this time they will have become set in shape, and will hold their position better on the building.

It is essential in all of this work that care be taken to get measurements exact, and that the work not be rushed to such an extent that the parts made will not be permanent in character.

Our southern conditions present peculiar problems. This barn, wherever built, must be adapted to conditions to be satisfactory.

- This list of material is of that required to build a barn of the size I have described in these columns:
- 1,000 ft. 1x6 in. plank, for arches. Elm, lind or cottonwood.
- 1,550 ft. No. 2 flooring, for sheeting. 3/4x7/8 in. matched.
- 1,000 ft. No. 1 flooring, for loft.
- 3,000 ft. No. 1 dressed siding.
- 1,200 ft. hardwood, for stalls and hay-chutes.
- 14 posts 6x6 in. 16 ft. long, for side.
- 14 posts 6x6 in. 10 ft. long, for inside.
- 48 pieces 4x4 in. 4 ft. long, for braces.
- 6 pieces 6x6 in. 12 ft. long, for loft supports.
- 12 pieces 2x6 in. 12 ft. long, for eave-plates.
- 18 pieces 2x4 in. 12 ft. long, for side nail ties.
- 12 pieces 4x6 in. 8 ft. long, for end nail ties.
- 7 pieces 6x6 in. 10 ft. long, for center beams under loft.
- 24 pieces 2x8 in. 9 ft. long, for shed joist.
- 12 pieces 2x10 in. 10 ft. long, for center joist.
- 16 pieces 2x4 in. 16 ft. long, for stanchion and rails.
- 16 squares roofing, the best you can get.
- 4 3/4-in. iron rods, 16 ft. long, with swivel and screw bolts.
- 6 pair 10-in. strap hinges. Outside doors.
- 8 pair 8-in. strap hinges. Inside doors.
- 2 kegs 20d. nails.
- 3 kegs 8d. nails.
- 1 keg 16d. nails.
- 2 sets weights and cords, for doors.
- 16 window-frames, 24x60 in. boxed.
- 16 sash for same, sash to slide on the inside.
- 16 wire screens for windows.
- 14 brackets 2-in. stuff, 1x2 ft. Curved as shown.
- 38 ft. of track for hay-carrier.

The labor in constructing this barn outside of the roof is just the same as for an ordinary framed-roof barn. But, in the roof, the labor is reduced at least one half. The framework of the bents and the arches are put together on the ground and then raised, one section at a time. Two sets of blocks and a hoisting derrick are needed for the work.

After the first end section is up and braced, each of the others, as they are raised, are plumbed and braced. The eave-plates are mortised into the posts near the top. These plates are then braced exactly the same as are the ordinary plates.

No mention will be made as to the cost of material or labor, as that differs so widely in different sections. The above list of material is reasonably fair, as to the amount required, but it may be varied. All 2x6's may be used instead of 6x6-inch posts.

A Water-Supply

By John Upton

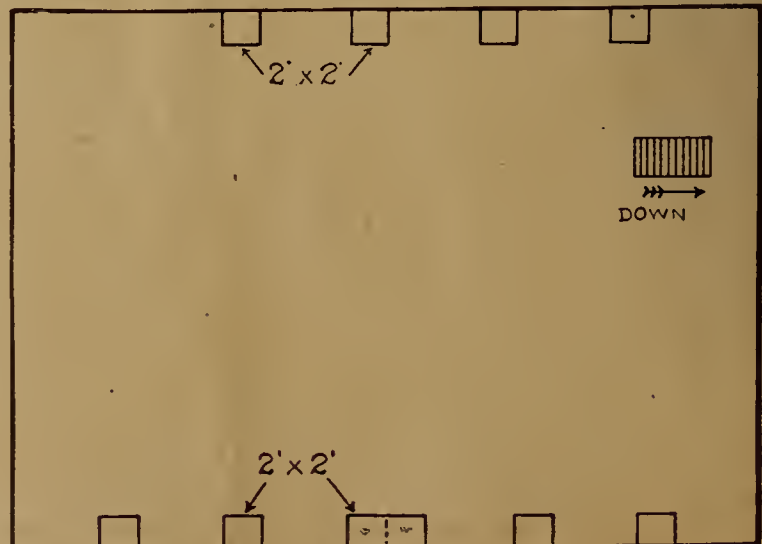
At my old home, here in New York, we had what might be considered an ideal water-supply, for the water was piped from a spring directly into the house, and when a man can have such conditions, he need not worry about water.

At present we have a flowing well, from which the water is piped to a hydraulic ram, which pumps the water into a tank in the cow-stable. From this tank it is conducted through pipes into buckets in front of the cows. An extra pipe with a faucet on supplies water for the horses. The overflow-pipe from the tank is run into another barn and allowed to run constantly. There is a float and shut-off valve to regulate the height of the water in the buckets.

This spring flows six gallons per minute. The ram delivers about two gallons per minute, to a height of ten feet above the ram, operating under a fall of about three feet. The feed-pipe is one and one-fourth inch at the ram end, beginning at the well with a three-inch tile and reducing. One-half-inch discharge-pipe is used with this size ram, but we put on a three-fourths inch. Three sizes in rams were tried before we had the right one. A No. 4 was too big, likewise a No. 3. On a No. 2 it became necessary to put a relief spring, to regulate the plunger. This size ram can be purchased for about \$6.00. There are higher priced rams which operate with little fall and force the water to a considerable height. Our entire outfit, including everything, cost but \$35.00.



Plan No. 3



Plan No. 5

Making a Common Farm Pay Well

By Robert H. Moulton

IS THE call of the soil proving stronger than the lure of the city? It would seem so. Yet figures show that while the current from town to country has increased amazingly within the last few years the trend is still in the other direction. Farms continue to be deserted, their owners believing that their best chance of working out the problems of life lies in the factories, stores and offices of the city.

In some of the Eastern States, notably New York, the number of acres of abandoned farm-land is amazing. It is still good, productive land, or could be made productive, but its owners don't think so. They will tell you that they tried getting a living from the land and failed. Why? The answer is, they didn't know how to do it—and perhaps not many of them tried very hard to learn.

Occasionally, however, we run across a man who, either from choice or through force of circumstances, ignores the lure of the city, gives himself heart and soul to the rejuvenation of his heritage, or purchase of acres, and succeeds to such an amazing extent that he comes to be looked upon as a wizard of the soil.

Of such stock is T. E. Martin, whose home is in Monroe County, in the western part of New York State—only, he wouldn't like to be called a wizard, or a genius, or anything of that sort. He would tell you that what he has accomplished in the way of turning fifty-seven acres of very ordinary, run-down and unimproved land into one of the best organized and most successful farms in the United States was not the result of any unusual ability or agricultural knowledge that he possessed, but to hard work, regular and persistent methods, and perseverance even in the face of most unfavorable conditions. Sticktoitiveness has been the keystone of his success.

In 1892, Martin, who was then a very young man, bought a fifty-seven-acre farm for \$5,000. He paid \$2,000, all the money he had, in cash, and gave a mortgage on the place for the balance. Whereupon some of his neighbors chuckled and observed waggingly among themselves that Martin could have bought just as good and a much prettier gold brick in town for the same money.

"That's all right," said Martin, when informed how his deal was looked upon by the older and presumably wiser heads of the community. "Let them laugh. It will do no harm. But also tell them to watch me."

They watched. They are still watching, in amazement, for this is what they see to-day: A farm that is debt-free, whose value has increased from \$87 an acre to \$175 an acre, which has a drainage system that cost \$2,500, and which yields annual net profits amounting to some \$1,100. In addition to this, the owner has a home and all the vegetables, eggs, chickens and butter his family can use.

Certainly Martin might, with perfect propriety, emit a few chuckles himself, incidentally making reference to the party who laughs last. But he doesn't. He tells his fellow farmers that they can do likewise; he is more than willing to show them how, and it is interesting to note that the majority of those who were once doubters and scoffers are now his most enthusiastic admirers and followers.

He Determined to Make Farming Pay

Martin was born on a farm and reared on a farm. But during his earlier years agricultural pursuits held no charm for him. His ambition was to be a civil engineer—and the chances are that he would have been a successful one had not circumstances interfered with his plans for the future. As it was, he found, after having received only a common-school education, that he would have to be a farmer. He determined to be a good one. This point settled, he bought his farm and set out to build it up and "make it pay." A measure of what he has accomplished may be found not only in the success of the farm itself, but also in the fact that the owner has been called to the management of the demonstration farms of a large railroad company.

Originally Martin's farm belonged to his father and his grandfather. Each of the latter had in turn made it yield barely enough revenue for sustenance. Their income from the farm averaged about \$400 a year—less than half an Italian ditch-digger earns.

When the farm finally came into Martin's possession, he faced all the drawbacks of an ordinary farmer, such as indebtedness, lack of capital, run-down land, poor fences, poor drainage, and many other circumstances of a similar nature.

After paying down his \$2,000, Martin had in visible assets, besides the farm, a wagon, a single carriage, a sleigh, three horses and one cow. For other necessary tools to operate the farm he was obliged to go into debt to the extent of \$250. He also bought three more cows, for which he gave his note. And again his neighbors shook their heads and prophesied his immediate finish. The buildings on the place were in fairly good condition and have since been but little altered, only certain modern conveniences being added.

With the land it was different. At least one fourth of it was waste land, swamp, pasture, etc. It also possessed the disadvantage of being poorly divided, and such fences as existed were of rotting rails and tumble-down piles of stone. Martin groaned in spirit after a trip of inspection around the place. His lamentations, however, were for the shortness of vision, the lack of method or system and the absence of all progressiveness on the part of his forebears rather than any discouragement over the hugeness of the job, with its multitude of perplexing problems, that faced him at that moment. He decided at once that a gigantic surgical operation

was necessary to save the farm; that it would have to be freed of traditions, as well as stumps, stone-heaps, rotting fences, swamps, and the like, and then fed on a rigid diet of businesslike methods.

The first year saw the clearing away of most of the old fences and the division of the farm into more regular shape. The land itself was next attacked, and stones and stumps began to fly. During the first fifteen years something like 1,200 yards of the former and several hundred of the latter were removed. This increased the available tillable area to a very considerable extent.

The Fight Was a Hard One

Martin had a hard fight the first few years. His chief source of income was from his potato crop, but frequently this was scarcely sufficient to pay expenses and the maturing notes. Moreover, he was obliged from time to time to add to his equipment, buying still on credit. The income from the butter and the poultry went to keep the family in groceries and other household necessities.

The extremely low prices prevailing from 1892 to 1900 formed a further handicap to successful farming and farm improvement. During this period potatoes sold as low as eight cents a bushel, wheat as low as forty-eight cents, rye at thirty-two cents, eggs at ten cents a dozen, butter at thirteen cents a pound and lard at six



The same kind of thought and work that transformed swamps to tillable land caused every part of the farm to return profits to the owner



cents a pound. There were times when small failures or successes counted for much; when, for example, the failure of a hatch of chickens meant curtailing the grocery-bill, and when a shortage in the potato crop meant failure to meet notes that were pressing to be paid.

Yet in spite of the adverse circumstances under which he labored, Martin held firmly to his original purpose of increasing the tillable area of the farm and the productivity of every acre. A systematic rotation of crops was early adopted and the fertility of the soil not only maintained, but increased. This policy soon began to show its effects. Gradually the income grew, and each year saw a little more of the debt wiped out and a little more added to the equipment of the farm.

With the farm well organized and giving good returns, Martin turned his attention to the "little things," which add much to the efficiency, comfort, convenience and profit of the farmer and his family, although not showing as large returns from a dollar standpoint.

From the first year he began collecting small tools, for repairing the farm equipment, and now has probably the most complete set ever brought together on a farm. Their total cost was about \$400.

Good Tools Soon Pay for Themselves

How the average farmer would throw up his hands in horror at the mere suggestion of such an expense! This is the way Martin looks at it:

"Perhaps some of the tools I have collected are unnecessary and superfluous. But the entire lot cost only \$400, which is not a large sum. The interest on this amount at six per cent. is only \$24 a year, and it is safe to say that there has never been a year when I did not save twice this amount in time, labor and cash. The average farmer's repair bill is far larger than this amount of interest and upkeep.

"An incident which occurred during potato harvest last year illustrates excellently the value of this repair and supply outfit. The short beam of the potato-digger was broken in turning the machine. Fourteen men were picking up the potatoes, while a team and two other men were hauling. The pickers were not far behind

the digger, and in half an hour or less would have caught up and been idle. But there was an extra part in the repair-shop, and this was secured and substituted for the broken part in such a short time that the digging was resumed before the pickers caught up. On many farms this accident would have stopped all work for at least the rest of the day and cost more than the price of the broken part and the repair tool in idle labor and delay of work."

Believing thoroughly in his ability to make it pay, Martin planned from the very first a complete system of drainage for the farm, and in 1894, while still heavily in debt, began laying tile drains. The first car-load was paid for with his note. When it arrived and Martin began to put it in place, there was a semi-panic among the neighboring farmers. They had, after painful efforts, reconciled themselves in a measure to Martin's other revolutionary methods, but this thing of running "bath-room fixin's" through a farm was too all-fired highfalutin', by heck! It was the end of the limit.

So they hung over the fences, while Martin worked, and discussed the advisability of having a commission appointed to inquire into his sanity.

Did these discussions swerve Martin from his purpose? Not so that you could notice it. Pursuing the even tenor of his way, he went along with the tile work, laying two miles the first year, and another two miles the following year. About this time the potato market went to smash, and having neither money nor credit Martin was forced to discontinue the drainage work, in 1896. The next year, however, conditions had improved, and he went back to the draining question. Each succeeding year thereafter a little more work was done, until finally the system was completed in 1909. To-day there are more than ten miles of drains on the farm.

What is a Practical Rotation?

The one thing which stands out above all others on this farm is its thorough and complete organization for business. A rotation of crops was begun at the very first. "The first rotation," says Martin, "consisted of wheat, followed by clover and timothy, fodder-corn, potatoes and buckwheat more or less irregularly. Next I made an effort to get all the fields in shape for a fixed four-year rotation of rye, clover and timothy hay, potatoes followed by rye, which was plowed under in the spring, and followed by potatoes again. But as this rotation failed to maintain the potato crops, it was abandoned, and in 1899 the rotation was shortened to three years and made the simple one of wheat, clover and potatoes, wheat having been substituted for rye, in 1898, on account of its larger yield and higher price.

"In 1909, I applied between 1,500 and 1,600 pounds of home-made fertilizer. It was made of nitrate of soda, fresh blood and fresh ground bone, and analyzed 3.89 per cent. nitrogen, 8.33 per cent. phosphoric acid and 13.33 per cent. potash. The cost of the ingredient materials f. o. b. the farm was \$34.18 per ton, or \$25.63 per acre. The great improvement of the farm in fertility makes the use of commercial fertilizer less each year. In 1910, only 1,200 pounds were used, and the yield was above the average.

"I consider spraying a very important item in the growing of a crop of potatoes. And the watchword should be thoroughness. Does it pay to do all this work?"

"Well, here are some accurate figures based upon a series of carefully made tests last season. The central row of a three-row check, unsprayed, yielded at the rate of 137 bushels per acre. Sprayed potatoes adjoining, where 1,427 gallons of Bordeaux were applied per acre, yielded 240 bushels of better stock, an increase of 103 bushels by spraying, and the total cost was \$13 per acre. Figuring our 18 acres at the same rate of increase, and the potatoes at 60 cents per bushel, less cost of spraying, a net profit of \$878.40 would be realized."

There are many unreckoned values that help to make living in the country worth while, and which are, at the same time, a valuable farm asset. The farm garden is one. On the majority of farms the importance of the garden is greatly underestimated, most farmers considering it a waste of time to care for it properly when it interferes with other work. This, of course, means the purchase of vegetables and fruits. Martin has demonstrated that the garden may not only be made to furnish the family with fruit, flowers and vegetables during the greater part of the year, but may do this without interfering with the regular farm work. The products from his garden have returned an annual cash profit of from \$50 to \$200.

Flowers play an important part in this really remarkable garden. A pyramidal bank of red and white, running the entire length of the garden, is grown. They are arranged in long rows of colors, the highest growing flower in the middle, a medium high one next and then a still lower growing one on each side. By timing the planting the flowers all bloom together, forming a beautiful sight. There are thirty varieties of roses, which are a source of special pride to Mrs. Martin. She takes the keenest pleasure in watching and studying these flowers and in telling the names and merits of the different varieties to visitors.

Mrs. Martin, by the way, has played no inconsiderable part in her husband's success. Believing firmly in his ability to make the farm a paying venture and a model of its kind, she has encouraged and aided him at every step, following the work and the methods employed so carefully that now, according to Martin himself, she knows fully as much about the business as he does.

Ever Notice A Field of Indian Corn

in the glory of its growing?

The best part of selected pearly white Indian Corn is used in making

Post Toasties

This food is carefully cooked—in a factory that is clean and spotless—not a hand touching it at any stage of the making.

Post Toasties with cream and a sprinkle of sugar are an ideal dish. Serve sometimes with fresh strawberries added.

"The Memory Lingers"

Sold by Grocers

Postum Cereal Company, Ltd.
Battle Creek, Mich.

The Market Outlook

Missouri-River Hogs Lead

THE latter part of May sent to the stock-yards much heavier shipments than were expected. An eight-cent quotation about the middle of the month was to a limited extent responsible for this. Naturally the price went down, but not in proportion to the increased supply. Fresh pork is the only cheap meat obtainable, and the demand for it is correspondingly large, hence the maintaining of hog values well up toward eight dollars. This condition has meant the cutting up into fresh pork much of the carcasses that at other times go into the cellars. It also puts the market on a cash basis with prompt clearances. Although the receipts for May about equaled those of May, 1911, the average price during the past month has been fully one dollar and fifty cents above that of one year ago. Were it not for the scarcity of beef and mutton, hog values would need a readjustment at a much lower figure.

The Missouri-River territory is furnishing nearly all the hogs now passing over the scales. Omaha and Sioux City are regularly receiving heavy shipments, and, on Mondays, Chicago gets a generous run from this source. The quality of these Iowa and Nebraska hogs is good, and the average weight is the heaviest of any time since the first of the year and nearly equaling that of this time last year, which was at that time considered above the normal. Good quality and good size are always indicative of a generous supply, so there are apt to be heavier receipts during the early summer than have heretofore been anticipated.

With the decline of hog values there was a corresponding break in the provisions market, and the trading there has lost its briskness.

Export clearances for meat and lard are not quite as large, and shipping orders have also decreased. The entire market has taken a slower pace, but is on a firm basis at a figure somewhat below eight dollars.

LLOYD K. BROWN, South Dakota.

Prices Seriously Depressed

THE sheep-market since about the last of May has been steady at very satisfactory prices for all good kinds of both sheep and lambs, while the unfinished offerings of all descriptions have been found hard to dispose of. The following may be taken as representing the average run of prices for the past month: ewes, \$4.25 to \$5.75; wethers, \$5.40 to \$6.50; yearlings, \$5.75 to \$7.50; lambs, good to choice, \$8.50 to \$9.50; common, \$6.50 to \$7.50. Spring lambs have been very scarce and varying much in quality, and have gone all the way from \$6.00 to \$10.00. A few lambs have been sold as feeders from \$6.00 to \$6.50; and a few breeding ewes around \$4.00.

There never was a better time for going into the sheep business, and especially the lamb-breeding and home-feeding part of it. It can be commenced on ever so small a scale, and any reputable commission house can be trusted to pick up a small or large bunch of breeding ewes. Good grades of Shropshire or any of the Down breeds will do, so long as they are bred to a thoroughbred ram. No time should be lost, as it is likely that they will take a month or so on generous feed to get into proper condition for breeding. Most of what it is necessary to learn on this subject can be found in FARM AND FIRESIDE from September to December, 1910.

The importance of this matter of sending sheep and lambs to market in an unfinished condition has been so often mentioned in these letters that there is danger of the subject being thought to be worn threadbare. Perhaps it must be admitted that the severe winter, the late spring and the high price of mill-feeds have afforded some excuse for feeders losing heart and sending immature stuff to market; but now that these conditions have ceased to exist, the practice should come to an end. Far, however, from that being the case, the number of unfit animals appearing on the leading markets appears as great as ever and so far to exceed that of the fit as to seriously depress the average of prices.

The *Farmers' and Drovers' Journal* of Chicago recently remarked: "The range of prices continues its widening performance, and no let-up need be looked for until fewer half-fed lots are received."

The *Breeders' Gazette* recently had this to say on this subject: "Live-mutton trade has displayed a very strong undertone, although buyers are disposed to discriminate against trash, and even mediocrity is greeted with a frown."

A tour among the retail dealers of any large city discloses the fact that much of the mutton and lamb offered for sale is of very inferior quality. The trade does not desire this stuff, but it has to take what it can get. The intelligent housekeeper knows that there can be no good, wholesome meat without fat, and will not buy the scraggy,

insipid stuff offered. Prices of all kinds of meat are bound to advance, but if this pernicious practice is not checked, breeders and feeders of sheep and lambs will not participate in them, for it is they, and not the dealers, who are to blame. As long as the production of wool was their sole end and aim, mutton was but little esteemed; but now, since the raising of the combined mutton-and-wool breeds is better understood, sheep meat is rapidly growing in estimation; and if our own farmers won't produce what is wanted, South America can and will fill the gap. Already our packers are taking steps to control that source of supply; and even far-away New Zealand is shipping frozen lamb to New York.

The wool trade is reported from Boston as being rather quiet, though in the West considerable business is being done at about twenty cents, and in Ohio and Michigan at three to three and one-half cents higher. In Europe and Australia the markets are very lively, while stocks seem to be low everywhere. The tariff scare is taking a rest.

JOHN PICKERING ROSS, Illinois.

A Problem in Values

IT NOW seems as if we were going to have good crops in western Iowa. We have plenty of moisture, and the ground is in fine shape. The alfalfa crop is very fine, never was better, and hay will bring a good price this fall, if we get, as now promised, a bountiful crop of everything and take care of it as we ought to after the lesson of last winter.

The great question will then be what to feed it to at a profit. What were some of the lessons we learned last winter? First, we learned the great feeding value of corn put in the silo and also the feeding value of corn-fodder and even straw.

I have been feeding calves for baby beef now for years, and they have always had the best of alfalfa-hay and ground corn and cob. This last winter I had one hundred calves in one yard, and having no alfalfa-hay to spare them, fed them on eleven pounds of shelled corn and eighteen pounds of ensilage, with one and one-half pounds cotton-seed meal added. We also kept wheat-straw in a rack. In ordinary years we use the wheat-straw for bedding. These calves were delivered on the farm October 1, 1912, weighing 368 pounds on an average, and cost me, laid down on the farm, \$1,940. They now are on alfalfa-pasture to the knees and are still getting eleven pounds of corn per head per day.

The cotton-seed meal was stopped just as soon as they went on grass. Why? Because I did not consider it necessary on alfalfa-pasture. I want fat on these yearlings from now on. They will make frame enough on the alfalfa. These yearlings now weigh over eight hundred pounds and are worth on our local market (Sioux City) about eight cents, so that I have made a cheaper gain on these yearlings on silage and cotton-seed than I did on alfalfa and corn, and I have learned this, that my farm can carry double the amount of cattle it has been carrying if I save and utilize the roughage. This last winter and even now there has been, even with our high-priced corn, a great profit made on some of the cattle marketed, and this has been mostly on heavy cattle. It is likely that from now on the yearlings will be in favor. The great mistake the average man makes who has yearlings, is to market them before they are ripe. They must be fat to bring the money. I do not consider a young feeder should start on calves, as they need careful feeding, nor do I advise feeding calves only. As a rule, the best profit in feeding cattle is when they can be turned quickly and it is seldom that calves fed out make any great profit above the cost of feed, unless they are finished, and this takes patience—and corn. On the other hand, just look again over these one hundred calves I speak of.

First, the investment is small, \$1,940; and yet they get away with a large share of my crop and will sell before fall for at least \$8,000, which is far from bad. I find it is not wise to make too much profit at one time. My two boys, fourteen and eleven, invested their savings in a few lambs and made one hundred per cent. profit in four months, whereas I fed one thousand last winter and did not make one hundred per cent. Now my eleven-year-old boy tells me I don't know how to buy. If that is so, I don't see how I can advise you what to buy. Stock cattle are selling very high now, considering quality; and feeders will cost us six dollars this fall. If everyone rushes in and buys heavy feeders on the supposition that they will pay as well as last year, someone is liable to feel pretty sick about January 15, 1913.

There is liable to be a soft place in the stocker trade about July 15th. If you can pick up anything then worth the money, and have the pasture, don't overlook it. A calf, if well-bred, even at six cents per pound, will grow out of it.

The fat-cattle situation seems to be holding its own, and it looks now like high prices on good cattle all summer. As the good cattle in feed-yards now are in strong hands, there is little prospect of any great decline for some time yet.

W. S. A. SMITH, Iowa.

Killing the Insects

THE protection of fruit-trees against insects and fungi is one of the most important subjects connected with orchard management. Fifty years ago there were comparatively few of these troubles, but with the increase in the number and size of orchards the fruit enemies also increased, but at a much more rapid rate, until to-day we find it necessary to be equipped with efficient spray machinery and with spray liquids to hold them in check.

Some insects and fungi may be largely destroyed while the trees are dormant and before the leaves appear. It is, however, necessary to do some spraying during the summer. For many years Bordeaux mixture was the favorite spray in summer against certain fungous troubles of tree-fruits and was used almost exclusively in many orchards. During the past few years, however, more or less injury both to foliage and to fruit has occurred in many places through the use of the Bordeaux. In some orchards the writer has observed a dropping of fully fifty per cent. of the foliage and, later, serious russetting of the fruit caused without question by the use of the Bordeaux, even when properly made and applied.

In the recent search for a better summer spray material it has been found that for some fruits dilute lime-sulphur accomplished the same results as the Bordeaux, but without injury to foliage or fruit. Its value for all fruits has not yet been fully determined, but unquestionably the results with some fruits have been very satisfactory, especially on apples.

The spray material is made by boiling certain amounts of lime and sulphur in a given amount of water, afterward diluting according to its density and the kind of fruit to be sprayed. The lump lime used should be good. It should contain ninety per cent. or more of calcium oxide. Flowers of sulphur or the light or heavy sulphur flour may be used. There are many formulas recommended differing somewhat in the quantity of the materials used. The concentrated mixture is preferred by many fruit-growers because of its convenience, as it may be stored and be available for use at any time. A good formula for making this mixture is as follows: lime, forty pounds; sulphur, eighty pounds; water, fifty gallons.

Slake the lime in about ten gallons of hot water. During the slaking, gradually pour in the sulphur, made into a thin paste, stirring well to prevent the formation of lumps. When the slaking has finished, add the full amount of water, and boil for one hour. Each boiling after completion should be tested with a Beaumé hydrometer. The liquid will keep with little change stored in a closed barrel, being drawn off as required. One test of its density will answer for the entire lot. As the amount to use depends on its density, it is absolutely necessary to know its strength. Hydrometers are inexpensive and may be secured from almost any of the wholesale dealers in druggists' supplies.

For use as a summer spray dilute the concentrated mixture according to its density and the fruit to be sprayed. For apples, if the density is thirty-two Beaumé, use forty gallons of water for every gallon of the lime-sulphur. For pears use a weaker solution, one gallon of lime-sulphur to fifty of water. Its full value for cherries and plums has not yet been established. It should not be applied to peaches or to grapes, and in many places is not safe to use on potatoes. Another formula is much safer for the peach, which will be given later.

An arsenical should be added to the diluted lime-sulphur for codling-moth. Probably arsenate of lead is one of the best and safest poisons for use with the lime-sulphur solution, at the rate of from two to three pounds per fifty gallons of liquid. If but one summer spraying is used with apples, it should be applied as soon as the blossoms have fallen and be completed before the calyx cups have closed. In this spraying, thoroughness is essential if good results are to be secured. A later spraying is often necessary.

The self-boiled lime-sulphur mixture is used as a summer spray for peaches, as the concentrated spray just described is likely to cause serious injury to the foliage even when quite dilute. It is made by slaking eight pounds of lime with eight pounds of sulphur, using only enough water to insure thorough slaking. As soon as the lime has finished slaking, dilute until the entire quantity equals fifty gallons, and strain into the spray-tank.

Where large quantities of lime-sulphur are used, it is usually more economical to make the mixture. In many places, however, where the amount of spraying to be done is limited and where there are no conveniences for boiling the mixture, the commercial concentrated lime-sulphur, which is now sold on the market by a number of manufacturers, is used and is as efficient when applied at the proper strength as is the home-made mixture. O. M. TAYLOR.

A news item says: "Two and a half million bushels of potatoes were imported into the United States in February, or about twice as much as the average annual importations during the decade ending with 1912."

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Poultry-Raising

Value of Standard Breeds



OST farmers are busy men, especially in the spring and early summer, when the poultry work is the greatest. To do it right takes some careful planning. Planning must be done in all the lines of farm work if any good measure of success is to be attained. My father was a successful farmer, starting with a few hundred dollars saved from school-teaching at twenty-five dollars per month. He sold all his products at market prices, never trying to produce or sell at special prices, although he used fine seeds and pure-bred poultry. He did not enjoy bargaining was one reason, I think, but he could have materially increased his income by keeping the wheat and corn and poultry strictly pure and high grade. He preferred to market in the regular way. When the Barred Plymouth Rocks first appeared, however, he bred them pure for a year or two, when a near-by fancier came and took, at one dollar each, all the pullets he would spare. At that time they would have brought considerably less on the market. I was a boy, and this one fact, as I looked on, had much to do with my starting to breed standard-bred poultry. My father always added to his income each year a few hundred dollars from poultry, although his main business was dairying.

Twenty-seven years ago there lived right near me a man who worked in the iron mills of Pottstown, Pennsylvania. This man kept twelve Plymouth Rocks in the back lot of a country tenant-house. The lot was altogether about forty yards square. They were a very good show grade, in shape, color of feather and size. They were of female-color line, with a few darker females in the pen. He raised a few each season and exhibited some at shows near by. This was back in 1884. Men of towns from ten to twenty miles away would come and take away birds at from two, to five dollars each. There was almost no extra expense after the first start, which was the eggs. The winnings at the shows would almost pay for the showing expenses.

After a few years he quit the iron-mill and bought a farm of thirty-six acres. Here the Rocks were increased to fifty-five kept in one flock. Sales of eggs and stock greatly increased. The birds were taken to from three to five near-by shows, and they won many of the firsts. About four hundred were raised each season, and the surplus hens and pullets all sold to men who saw his stock at the fairs. About 1893 the flock was divided by building two houses in the apple-orchard, and the whole orchard made into two large yards. One of these was now mated for darker or cockerel line and the two others mated for light or standard female line. The strain was kept up to the very best practical lines. They always laid the year around. I cannot give figures in detail, but the prices of cockerels were from \$1.50 to \$5.00, and a few at \$20.00; the cull pullets often brought \$1.00, each, in the fall, at which time all the culls are sold. The good breeders brought from \$2.00 up to \$10.00. You will readily see that the poultry paid a very neat sum.

This man raised five children. One of the sons took the farm a few years ago, and the father has taken a house near by. He helps run the small place and the chickens, and keeps one mating at his home. They run five matings now. Three are dark, as the call is greater now for cockerel or male-line males. The man and his wife recently took a three-months' vacation trip to California.

He is one of the many all over our land. He had very little schooling, but was well educated in his calling; he was not planned for large business enterprises and did not care or strive for it. He played safe from the very beginning. The great danger is that most of us will begin by building two or more houses each year and spend large sums to beat this or that breeder, and risk large sums in advertising. Finally we go broke. This I have seen more than once. There are farmers who have built up large businesses in standard-bred poultry, but they are the ones who went slow. I have depended on advertising, but I began with ten dollars a year outlay. I felt my way and made it pay for some years, then began enlarging as I learned the trade.

What breed of the many would be best for the average farmer? One rule is never to take what you do not like. I prefer Brown Leghorns. Many prefer White Leghorns. When you have Leghorns, you must hatch most of them with incubators and use brooders—although enough of the Leghorn hens will want to set to brood quite a few chicks during the late spring. They make the very best mothers and sitters too, but they cannot be moved from their laying-nest into a hatching-room. It will usually break the

broody spell. White Leghorns must be washed to show them. It is quite a work to wash a team of White Leghorns. The same applies to that extra desirable fowl, the White Wyandotte, or to any white breed. If you desire a large breed, I would advise either White Wyandottes, Partridge Plymouth Rocks or Barred Plymouth Rocks. The White Wyandottes will always be popular, as well as will the Barred Rocks. I think the Partridge Rock will become very popular. The plan I would pursue is: Buy either a pair or two and a setting or so of eggs, as you see fit. Buy stock on approval. Buy good females always. They have most to do with shape, males with color, although in Rocks and in all colored breeds the females have great color weight. Study out a plan that seems to suit your place and will fit in with your work. In order to mate birds, you will need one or two yards. One male is sufficient to a yard. Cull the general flock, too; cull for color and shape. If you decide on Rocks, you had better breed only one color line first, until you have mastered it. Breed good birds, and near-by breeders who advertise will buy some of the birds.

You must feed well to have the standard size. This feeding matter must be considered, for I have found many farm flocks are about half fed. I know of one where there were two hundred head last fall. The grain fed cost just about two dollars a week—while I feed about \$5.50 a week to two hundred head. Under this scant feeding, a Leghorn pullet that should weigh three to four pounds will stop at two and one-half pounds and be unsalable as a breeder. The same effect will be produced on the larger breeds. They will be from one and one half to three pounds under weight and worthless as breeders of extra valuable birds. When you have a flock of standard-bred birds, a local demand will grow. This demand comes just when eggs are most plentiful and cheapest.

A flock of standard-bred fowls is an added asset to the farm, both in value and in looks.

W. W. KULP.

Easy to Rear Goslings

WE OFTEN hear of people having poor success with goslings. These people would probably tell you that goslings were difficult to raise. The fact is they are easier to raise than any other domestic fowl when one becomes familiar with their habits and understands their needs.

And in spite of the fact that geese bring less by the pound than other poultry, they



They are not difficult to raise

are profitable. It takes so little grain and work to bring goslings to a marketable size. And they grow very rapidly.

If there is no danger from hawks or wild animals, one can raise nearly every gosling that hatches. At least, every one that is normal.

• They are never troubled with gapes and very seldom have bowel diseases. They will get lousy, however, unless one is as careful as with other poultry. We used to believe that a gosling would not get lousy, but have found that to be a mistaken idea.

It has often been said that a gosling will live and thrive if it is given half a chance. We have found this to be true.

They should not be housed or fed with other poultry, not even with ducks. Geese, both old and young, eat very slowly, and, besides this, feed that would be all right for other fowls might be all wrong for geese. For instance, whole grain is not suitable for goslings. Don't feed whole wheat or cracked corn to goslings, unless the grains are thoroughly cooked and cooled.

What a gosling needs is plenty of tender grass from the start, and a little ground grain about twice a day. If grass is scarce, a substitute must be provided, and they will require more grain and cooked vegetables. Both together make an excellent ration for goslings. During the first few days after hatching, they should be fed oftener than will be necessary later on. Stale bread, moistened with skim-milk seems to be the best ration. Sometimes it may be varied by feeding the bread dry, or substituting corn-bread. After they begin to eat grass with apparent relish, they require very little other feed until old enough to force for market.

If they are to be marketed as green geese, they will, of course, need more grain and other feed than if they are not marketed until later. A good ration for growing goslings is composed of equal parts corn-meal and bran, moistened with skim-milk

and mixed with cooked vegetables. If there is plenty of pasture, the above mixture should not be given oftener than twice a day. If the goslings are not being fattened for the market, once a day may be sufficient. If only fed once each day, it should be in the morning. When grass is plentiful, they will fill themselves so full during the day that when they come in at night they are nearly ready to burst, or at least they appear to be.

A very important part of a gosling's diet is sand. They must have it several times a day, but it should never be mixed with the feed. Place it where they can have access to it all the time. Gravel will not do. It must be coarse, sharp sand. Broken sandstone will do very well. A gosling will never have bowel trouble, if plenty of sand is provided, unless there is something wrong with the feed.

Never allow the feed to ferment. In hot weather it is apt to sour if allowed to stand from one day to another. Sour feed will cause convulsions in goslings or young ducks.

Goose eggs require from twenty-eight to thirty-two days to hatch, according to variety and method of hatching. They require less time when hatched under geese than in any other way, but geese make very poor "mothers." They are nearly always cross and will sometimes pick the goslings out of the shell before they are ready to hatch. Therefore, it is best to use large chicken hens for hatching goslings. Goslings need the services of a hen only a short time. They soon outgrow her wings.

A large chicken hen can usually cover from five to seven eggs, according to size. Some geese lay larger eggs than others. Never give a hen more than she can cover without spreading her wings. It takes much warmth to hatch goose eggs. When the goslings begin to hatch, they should be closely watched. Very often they need a little help. The shell and lining are very strong, and sometimes the goslings are unable to break through. About the time they begin to pip, the eggs should be dipped in water, heated to 100 degrees Fahrenheit.

Take the eggs from under the hen one by one, and replace as soon as moistened. Sometimes the eggs will be pipped a long time before the goslings are ready to come out. Don't be in too great a hurry. They are not ready to come out as soon as the shell is broken; but see that there is a small opening to admit air. It sometimes happens that while the shell is pipped the lining still remains unbroken. When this occurs, take a pin and very carefully puncture the membrane. Make a tiny opening, being careful not to injure the gosling. If not hatched in twenty-four hours, pick off some of the shell. Don't leave goslings in the nest very long after hatching. Place them in a basket lined with flannel and set it in the sun or next the kitchen-range. Provide comfortable houses (not coops) for goslings. See that they have plenty of clean water to drink. We hatched ninety-six last year and raised eight-two. Not a gosling died of disease. Several were killed by rats and hawks.

ANNA W. GALLIGHER.

Set some hens late for late-hatched chickens and winter fries, but keep them warm and push them right along. Feed lots of bran and wheat now to start early molting, if you want winter eggs.

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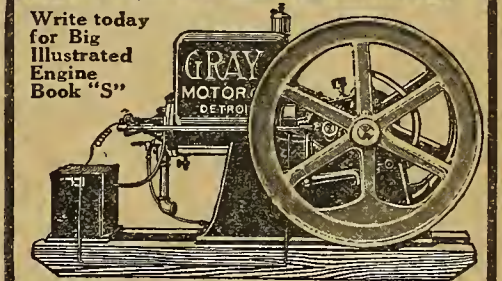
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Crops and Soils

Anglegworms

By G. Henry



IF AN anglegworm could talk, it is easy to imagine his criticizing us for not making the most of our many natural advantages over him. Of course, an anglegworm would judge us as worms, from the worm viewpoint. He would probably be just as conceited as we are, who judge all other living things from our viewpoint. So we may listen to him—and don't be too sure that he can't talk. We have a great deal to learn about our associates: the animals and insects and vermin and birds.

"What do you think of these big two-legged, two-armed worms?" one anglegworm might ask his brother. "Here they are, so strong and big that they can crush us with one crunch of their boot-heels, and still they live much as we live.

"They are born, they grow from small worms to big worms, they work and eat and sleep, and they die, just as we die.

"They burrow in the earth as we do.

"Sometimes they want rain so badly that they pray for it, for with all their pretensions to knowledge they do not know how to make it rain. Like us, they simply have to wait for rain. And when it comes, they don't always make the most of it. Where is the anglegworm so silly that he doesn't crawl out to enjoy himself after a nice warm rain?"

"When we grow so old that we can't take care of ourselves, we just naturally die. The job is completed: the anglegworm has lived and died—without very much suffering. But the big human worms often live to such old age that they can't work to support themselves, and their affairs or business methods are so arranged that many of them have been unable to provide for this dreadful time, and many of them suffer a great deal—suffer things which we anglegworms know nothing about.

"I have heard noises so terrifying in the back of the farmhouse near which I live," the anglegworm might go on, "that I have nearly worn my head off boring my way to the surface to learn what was the trouble. And it would be simply what is called a row: two people quarreling and fighting about some small matter—love or money or politics—over which we wouldn't trouble ourselves at all."

Then the anglegworm, seeing a heavily booted human worm coming his way perhaps, would quickly crawl back into the hole from which he emerged, quite satisfied, no doubt, that anglegworms are fully as wise and happy and prosperous as we imagine ourselves to be.

Syrup from Sorghum

THE sorghum crop, when cultivated mainly for syrup, can be made to serve a double purpose, since sorghum molasses finds a ready sale at a good price, and the blades of the plant make an excellent rough feed for cattle, sheep and horses. Then the seed is a crop of importance, as feed for chickens and for almost any other farm animal.

When we cultivate the sorghum for syrup, a large, well-developed stalk is needed so the plants must not stand too thick on the ground. The soil should be well prepared by plowing and harrowing until it is leveled down, and the clods are all pulverized.

A liberal application of a good grade of complete fertilizer should be used. The fertilizer should be well mixed through the soil, as the sorghum roots take complete possession of the soil. The rows should be laid off from three and one half to four feet apart, and the seed planted in hills from eighteen inches to two feet apart in the row. The seed should be covered about one-half inch deep. The planting should not be done until the soil is warm. When the plants get up one or two inches high, they should be thinned to four or five stalks to the hill. Thorough and frequent shallow cultivation should be practised until the plants become two or three feet high. After this the plants will shade the ground and will keep the weeds in check. About the time the seed reaches maturity the blades should be pulled off and allowed to cure; then they should be bound into bundles and put away for winter feed. The seed-heads are then removed and the juice crushed out of the stalks.

The evaporator is the best device for boiling down the juice, but if only a small amount of sorghum is to be made, a shallow pan with an iron bottom and wooden sides may be more economical, as the pan can be made at a cost of from three to four dollars. The pan is set over a furnace made by digging a trench in the ground to fit the pan.

The easiest and best way to cleanse the juice before boiling is to construct a long, deep, narrow box into which the juice is put and thoroughly mixed with a silty clay and allowed to settle. The green impurities adhere to the small particles of clay and sink to the bottom. A box eight feet long, eighteen inches wide and two feet high is a very good size for a cleansing-box and can be constructed with inch lumber of

the proper width. Small holes are put about one inch apart from bottom to top of one end and stopped by wooden plugs. The holes are for drawing off the juice as the clay and impurities settle down. One peck of well-pulverized clay is sufficient to cleanse seventy-five gallons of juice. It is thoroughly mixed with the juice in the cleansing-box by stirring, and it soon begins to settle after the stirring ceases and can be drawn off by opening the top hole first, then opening the holes downward in succession as the clay settles. This method does away with the disagreeable method of skimming the green scum off as the juice boils, since the juice comes from the cleansing-box perfectly clear, and it makes a better quality of syrup than is usually made by the old method of skimming as the juice boils. A white, silty clay that is clear of sand is the best kind of clay to use. A. J. LEGG.

If you cannot dress up your religion in overalls, its Sunday habiliments are sham.

Farmers are not inclined to count their board at very much, but the man in town knows that the butcher, the baker, the doctor and the fakir get all he makes, and he doesn't see real butter or cream from year's end to year's end. The farmer needs a better memory.

The greatest of all implements, the plow! Don't let it lie in the field for days, and weeks sometimes, to rust and rot. Use a slide and fetch it in every night. Put it in the dry with the singletrees. That is not half the trouble that rubbing it to get the rust off is.

Higher Standards—for Revenue

A College Boy Packs Apples

HIRAM WEST had always been as straight as men are made. His apples had been packed better than any that he had seen or heard of. He packed them better than his customers wished, for Hiram came from stock whose word had ever been better than their bond.

Mann came from Harvard and didn't know an apple from an apricot by sight, but he had read every book and bulletin which he could lay his hands on. He knew the story of Hood River Valley and of Wenatchee. He knew the grades enforced in Canada and those voluntarily adopted by western organizations. The value of accurate sorting, careful packing and an unlimited cull-pile had been pounded into him.

And because I had promised to pull Mann out of bed if he didn't get up early in the morning, Hiram had hired him to help us during the apple-picking season. Together we persuaded Mr. West to try some western style box packing and to send for Andrews, the trained packer, who hailed from an agricultural college.

Hiram raised good apples, but he didn't know how to reach out for the best markets. His fruit was banded and packed better than his selling agents demanded, but the commission man loomed big and he did not see beyond him. And it is not easy to see past that big bulky individual. To get beyond him one must have faith and knowledge. One must know the best way to pack apples and then have the faith to send them out to find their markets. Such local trade as sought Hiram he did not encourage, for it was not of sufficient volume to pay, and he never dreamed of developing it to a point where it might absorb his crop.

Hiram had lived for forty-six years on that hilltop, rarely venturing beyond it. Mann had lived his score of years in the city, and we knew the folks that wanted apples and couldn't get them for less than five cents apiece. It was this market that we wanted to try for, but to get it we must jack up the standards on that farm.

We spent a few days with the picking gang and learned a lot. It took us only that long to find out that we could pick more carefully and fully as fast as the best of them. We threw out the poor, small apples, did not bruise the good ones and kept our baskets free from twigs and leaves. Then Andrews came, and we retired to the packing-house.

Andrews showed us how to sort apples for his work. Under-sized apples, blemished and bruised ones were all thrown out. Next we graded for size, for uniformity of color and shape. At first it took us half a minute to an apple, but before many days they were flowing through our bands in solid streams as fast as we could pick them up. And then we learned the difference between box and barrel packing. Mr. West would bring in some barrels of apples and say, "Here, boys, are strictly fancy apples; I picked them myself." And they were "fancy" for the barrel trade, too, but the box is another breed of chicken. Slight bruises, imperceptible insect stings, slight irregularities of shape, would throw apple after apple out of the fancy box. But the bruise was the injury that tried my soul, for I knew that it could be so easily avoided. It simply meant care in picking and emptying. Mann and I had tried it out, we knew it could be done, so I went out and had a talk with the boys. I told them that we were trying to put up some really high grade apples, but that the careless bandling was injuring so

many of them that it was almost hopeless. They reformed for a few minutes and then forgot all about it. At noon they would come into the packing-house to see the new method of packing apples. But it was the size of the cull-pile that impressed them. Day after day they saw that we were relentlessly throwing away apples only slightly bruised.

This was the heaven that began to work on Hilltop Farm. The cull-pile grew and grew, and its effect became broader and broader. John wanted to help us in the packing-house, and he began to develop the care that we asked for. Jim would occasionally bring in a basket of exceptionally fine apples to show us what he could do. Joe would mark a whole barrel that he had gathered and come around to see them after they were packed. Then it was that I proposed to Mr. West one more reform, a clearing-up each day after work—every ladder and every picking-basket on the place to be brought in and put under cover. In the packing-house we had swept and garnished our workroom each day after hours, so as to start fresh in the morning in clean surroundings. It helped our work, but more, it helped our spirits. We felt more like asking the girls to come help us clip stems or paste labels when we knew that we were good housekeepers ourselves.

Mr. West had watched our work closely, and he allowed me to try this new suggestion. Fifteen minutes before quitting hour, I would call the boys. Ladders and baskets, picking-rods and unfilled barrels were brought under cover and put in order. And from that day dated the picking of boxable apples. The moral effect accomplished what we had never been able to do by talking. The cull-pile and the system of order brought into life a spirit that made dollars for Hiram.

The apples now came to the sorting-table with few bruises and the boxes of fancy grade began to heap up. Our inspection and grading was as rigid as ever and the same slight defects threw out apples, but the mass of bruised fruit grew less.

The revenue developed steadily. The first boxes sent out were in the nature of surprise packages. Customers didn't know that there were such apples to be had. Orders and re-orders came in, orders from old customers and from friends of customers. A box sold for as much as a barrel, and we had the barrel apples left over. Higher standards had been established on Hilltop Farm. HENRY WOLFE.

It pays to have a dozen extra sections on hand and a few rivets; never can tell when you may need them.

Transportation of Explosives

WITH the largely increased use of dynamite on the farm for the removal of stumps, breaking rocks, excavating holes for tree-planting, ditching and subsoil pulverizing, the danger to the public of transporting the large quantities of explosives has increased accordingly.

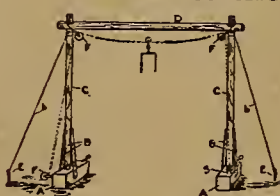
In view of this fact, the Interstate Commerce Commission has provided an additional safeguard in the form of a revision of the regulations governing this subject. This revision took effect March 31st last.

The regulations as revised allow dynamite and similar explosives to be transported only by freight by a public carrier over steam and traction railways, and prohibits transporting explosives by express or on cars used for passenger traffic.

Explosives cannot be held by railway companies over forty-eight hours after arrival at destination, but must be returned to the consignor if not called for by the consignee at the end of that length of time.

The penalty for infraction of this rule is a fine not to exceed two thousand dollars, imprisonment for eighteen months, or both, for each offense. Farmers ordering dynamite should take notice.

Lifts the Hay



WE HAVE used this hay-rick builder and stacker for two years, and it is a wonderful help. AA are the shoes, its main foundation. A ring can be put in each shoe so the whole affair can be moved by hitching a horse at each shoe. BB are braces which brace the poles (CC). Four feet from the top of the shoe they are spiked to the poles (CC) on both sides. Wire braces are shown at bb. EE are in the ground twenty feet from the stacker. The pulleys are marked F. The pulley to the right is to keep the rope from twisting or cutting. The rope is drawn through the right pulley and tied in the staple (S).

Each shoe has a square hole cut in it within two inches of the bottom for the poles (CC). The tops of the poles (CC) are cut square. Pole D has two square holes, one at each end, to fit down over poles CC so that the tops of poles CC are four inches above pole D. The rope is designated by the dotted line. The shoes are eight inches wide, ten inches thick and fourteen feet long. FRANK WILLIAMSON.

Weeds by the Roadside

IT is well worth while to keep watch of the weeds growing along roadsides and in waste places, because very often newly introduced pests appear first in such situations, from which they may rapidly spread to adjacent fields. Along the borders of one's own farm it is also well worth while to keep the roadsides clean and free from weeds already introduced to prevent a similar invasion.

In order to keep the roadsides free from weeds, it is very desirable to clean them up in spring, removing stones and anything else that makes mowing difficult. If the surface can be safely burned over, the stones and rubbish will show up better and many weed-seeds will be destroyed. Then an occasional mowing throughout the season will keep the weeds down and the highways attractive.

Some weedy plants seem to find the roadsides most favorable to their growth. Thus the blue blossoms of the chicory and the white heads of the wild carrot are more likely to be seen along the highways than in any other place. The former is comparatively harmless, although at times it may prove troublesome inside the fences, but the carrot is certainly a most dangerous pest, especially when it grows near pastures and meadows.

Chicory and wild carrot

In New England one can see many grass-fields ruined by it, and in the Middle West it is becoming more abundant each year. The plant is a biennial, getting started from seed this year and blossoming and fruiting next. Fortunately it reproduces only by means of seeds, and not by rootstocks or runners, so it can be suppressed by preventing seeding. This may be done by repeated mowings to cut off the successive crops of flowers that appear. A few scattered plants are easily cut off with a hoe or pulled up by the root, but when a meadow is badly infested, it is best to plow it up and plant to hoed crops for two or three years.

The wild parsnip is closely related to the wild carrot and is an even more dangerous plant to have growing along the roadside, for its seeds are light and winged so that they are blown considerable distances to start new colonies. When once established in grass-land, it can be eradicated only by persistent efforts. A few can easily be pulled by hand, but a large colony must be kept down by repeated mowings or by plowing and planting to hoed crops. Like the carrot, this parsnip is a biennial, getting started one year, producing seeds the next.

The burdock is another troublesome pest which is especially likely to get started in waste places, whence it spreads to other localities. The great roots must be cut off with a sharp grub-hoe and the plants kept from fruiting a year or two before the pest is subdued.

Prickly lettuce is one of the most notorious roadside weeds. Although it has not yet appeared in all parts of the United States, it is sufficiently wide-spread to be very troublesome. It commonly reaches a height of four or five feet and bears small yellow flowers at the top of the plant. The milky juice of leaves and stems is a characteristic that helps one to know it. The small seeds are furnished with fine wings that enable them to be carried for miles by the wind. Repeated mowing of roadside patches is necessary to keep the seeds from spreading.

One of the surest signs that a pasture or meadow is returning to its wild condition through neglect of mowing or tillage is to see the brakes starting up here and there in little patches. Every such patch is a center that spreads rapidly until it covers a large area, so that several patches may run together to occupy a whole field. When once the brakes have become established, hard-hacks, sweet ferns and other low shrubs soon appear and start a tangled growth that gives shelter to gray birches, spruces and other trees, so that the meadow or pasture is soon well along toward a forest. Usually, however, it is a forest of very little promise, on account of the baphazard planting and the poor quality of the trees that compose it.

It often happens that these brakes start first along the roadside and spread through the fence to the adjoining grass-land.

These brakes spread from a common center by the thick horizontal rootstocks sent out in all directions just beneath the soil surface. Each rootstock sends up a leafy stalk at frequent intervals, so that the surface of the ground is soon well shaded. These leaves and stems are not relished by cattle and there are practically no insect or other enemies that attack them. Consequently the brakes have things very much their own way unless the landowner puts up a vigorous fight against them.

Like most plants with thickened rootstocks, much of the material of growth for a new season is stored in summer in these roots. Each year the leaves start into



The sign of failing pastures

growth, send food materials down to the rootstocks and die. If the brakes are not cut until late in the season, much material for the next season's growth has already been stored up. Consequently, early and repeated cutting with a scythe is desirable if we are to exhaust the vitality of the roots. Such treatment is worth while for a season, even if the infested land is to be plowed, for turning over the rootstocks without such preliminary exhaustion seems only to give them new vigor and to enable them to send up new shoots as fast as they are cut off.

On waste lands these brakes are not altogether worthless. When they come up in May, before the leaves unfold, the thick stalks are juicy and tender and are often used for greens. Cooked like asparagus and served on toast, they are good eating. But in acres devoted to farming they are a sure sign of neglect.

Many other kinds of ferns are often called brakes, but the true brake fern or bracken is the one here pictured. C. M. WEED.

Bale all the surplus hay while you and the teams are practically idle. It may be stored away in small space if wanted for summer feeding. If desired for the market, it will sell better.

How and When to Cultivate

EVERY farmer knows that the soil's surface must be kept fine and porous if the crops are to grow, but the would-be farmer is often puzzled to know just when the work should be done and how the tools should be used.

About a week after the soil has been stirred, the surface begins to harden either by the drying out and settling together of the soil particles, or by the mechanical effect of pelting rains. When this hard, crusty condition exists, the stems of young, tender plants cannot easily expand in growth. When it extends lower to the region of the roots, the plants begin to starve, as the moisture-supply is cut off.

The moisture-conserving, weed-destroying process of cultivation should be well under way by May. If neglected through this month or the next, the grower need not count on profits.

Widely different soils require somewhat different tools and methods of cultivation. The various stages of growth also demand different treatment. The practical tool is one with adjustable teeth, knives or hoes which can be adapted to soil and crop conditions.

The depth of cultivation helps to determine the depth of the moisture-supply. Usually young crops may be very closely cultivated, running near the hills and thus saving much hoeing, but as the roots spread, serious injury may be done the crop by very close work. One's knowledge of the root habits of plants must be his guide. Deep cultivation is injurious to many crops when the fruit is large.

Melons and cucumbers may be cultivated until the vines cover the ground; corn, until it is as high as a horse's back; asparagus, all of the growing season, and potatoes, until they are in blossom. With the final cultivation the soil should be thrown toward the plants.

However, it must be remembered in cultivating that the tool alone cannot insure the right mechanical condition of the soil. One must rely somewhat upon wind and weather. To obtain the best results from cultivation, the work should be done soon after a rain, thus killing weeds and mellowing the soil with the least effort. The length of time after a rain for the best results of cultivating varies with the different soils. The soil is right for cultivation when it crumbles away from the tool in mellow undulations, but when it clings like paste to the cultivator-teeth and lies behind the tool in caked ridges, stop cultivating, for you are fulfilling none of its purposes. Such cultivation does real injury to clay soils, as these ridges do not so readily yield to subsequent workings. M. ROBERTS CONOVER.

Cost of Tractor Plowing

A CONNECTICUT reader who is considering land in Alberta, Canada, writes, asking the following questions of Mr. J. A. King, who recently told in FARM AND FIRESIDE of tractor farming.

1. Are the figures on the cost of operating as stated in the paper for breaking new land or stubble, or simply for seeding?
2. What do you figure the cost of new breaking if the estimate given does not apply to new breaking?

Mr. King says:

1. Figures on cost of operation, as tabulated in my article, are for plowing stubble-land. I find that here in Iowa there is little difference, if any, in the cost of plowing stubble-land and timothy and clover sod. In the West and Northwest, in plowing the wild native sod, it is more expensive than it is to plow the stubble-land in the same locality. A tractor will here or there, if in stubble-land, pull eight fourteen-inch plows, but will probably not exceed hauling six 14-inch plows plowing the native sod, and there are some places in Manitoba, in the west and northwest, where the tractor will not exceed hauling five plows in breaking. This, of course, would reduce the number of acres plowed per day and so increase the cost.

2. As stated in the above, the cost of plowing will vary somewhat according to locality, because of the nature of the soil. The cost, also, of fuel will vary considerably in various parts of the country. For instance, engine distillate, which here costs us four cents per gallon f. o. b. the station, in parts of the Canadian Northwest will cost twelve cents, fifteen cents and in some instances, where far from distributing points, has been eighteen cents per gallon. Of course, the Canadian imperial gallon will be about sixteen per cent. larger than the American gallon, our standard of measure.



Careful culture means large crops

Ever try round corners on the meadow, cutting it clean and keeping the teams on the move? It saves a lot of time and the horses' shoulders, too.

Kill Corn-Root Lice

DID you ever have patches of corn dwarf and turn yellow, with a reddish tinge, when there was apparently no reason for it? Likely the corn is suffering from aphid or corn-root lice. To make more certain, examine the ground carefully and see if you can find ant-hills near. Then as a final test pull up some stalks of corn and see if you can discover some tiny bluish-green insects on the roots.

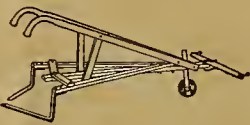
These tiny lice suck the juice from the corn roots, stunt its growth and reduce its yield. They secrete a sticky substance known as "honey-dew," which the ants are very fond of and hence protect the lice which produce it. In the fall, the little brown ants take the lice-eggs into their nests and care for them until spring. Next spring, when the eggs hatch, the ants place the young lice upon the roots of smart-weed or some such plants, and when the corn has been planted and is growing, the ants move the young lice to the corn roots with damaging effects.

To prevent this, the farmer has to fight the ants as well as the lice. Deep cultivation, which destroys the ants' nests, helps and is often quite effective. The aphid feeds to some extent on other plants, but the corn is the best food and without it the aphid soon disappears. Rotation of crops is the best means of ridding the farm of plant-lice. Rotation of crops and deep cultivation of land is the prevention. P. E. McCLENNAN.

Butler is the leading Kafir-corn-growing county in Kansas. The 1911 crop is estimated at three million bushels. Its introduction in Kansas was in 1885.

A Weed-Destroyer

THIS weeder and cultivator runs about two inches deep, and leaves a fine soil mulch. It will not clog. Its use will destroy milk-weeds. It is made out of two-by-four studding and old spring-drag teeth turned and sharpened. Aside from shaping and sharpening the knives, any farmer, having a few bolts costing about one dollar, can make one. JESSE POE.



To Kill Wire-Grass

A FRIEND OF FARM AND FIRESIDE in northern Indiana has a wire-grass pasture which he wants to convert into a permanent pasture minus the wire-grass. The so-called wire-grasses are many. Such grasses as propagate by means of creeping root-stalks constantly reproduce new plants at the rooting joints, as couch or quack grass, Johnson grass, Bermuda grass and members of the blue-grass family. This pasture, if adapted to tillage, should be completely pulverized to the depth of four inches with a cutaway or disk harrow in July and kept harrowed once a week so long as the soil remains dry during the remainder of the season, allowing no green spear of grass to get a foothold.

By fall the mass of roots will be practically lifeless if the season has been normally dry and hot. The whole should then be turned under ten inches deep, using a jointer. In the spring, harrow every week until time to plant a cultivated crop, then keep perfectly clean and the battle will be won. B. F. W. T.

Handy Seed-Dropper

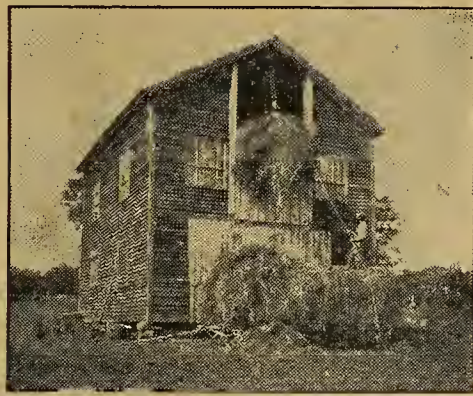
AN OLD garden hose about three and one-half feet long, attached to a funnel that fits snugly, makes an excellent dropper for garden and field seeds. No stooping is necessary. E. O. SUPPGER.

Cane Hard on the Soil

MANY farmers avoid planting cane, because they think it is hard on the ground. In some respects this, as the writer has seen, is true. All sorgho crops have the ability to use the water content of the soil down closer than most plants do. The effects are plainly seen the following season if the cane is followed by a spring crop. However, sowing some legume crop in early summer after harvesting a crop of cane would bring the soil into fine working order for either wheat or corn. C. BOLLES.

Farm for Sale

A MISSOURI reader asks for advice concerning the purchase of a farm in New York State which is offered, with the whole outfit and equipment, live stock included. The proposed deal looks like an attempt, on the part of the owner, to sell the farm stock and farming equipment, and just throw the farm in. My advice is: "Never buy a cat in a bag." It is true enough that many good farms are offered for sale cheap in this State, simply because the owner did not understand how to make farming pay and put the blame all on the farm rather than himself. There are as good chances to make money by farming in this State as in any other locality; Florida, California, Oregon, etc., not excepted. The secret of success here, as in some of the adjoining states, is clover rotation, alfalfa, etc. But always investigate by personal inspection before you purchase. Run-down farms can be brought back to productivity, but it may require some capital besides good management to do it. T. GR.



Good hay requires proper storage

DOCTOR'S SHIFT

Now Gets Along Without It.

A physician says: "Until last fall I used to eat meat for my breakfast and suffered with indigestion until the meat had passed from the stomach."

"Last fall I began the use of Grape-Nuts for breakfast and very soon found I could do without meat, for my body got all the nourishment necessary from the Grape-Nuts and since then I have not had any indigestion and am feeling better and have increased in weight."

"Since finding the benefit I derived from Grape-Nuts I have prescribed the food for all my patients suffering from indigestion or over-feeding and also for those recovering from disease where I want a food easy to take and certain to digest and which will not overtax the stomach."

"I always find the results I look for when I prescribe Grape-Nuts. For ethical reasons please omit my name." Name given by mail by Postum Co., Battle Creek, Mich.

The reason for the wonderful amount of nutriment, and the easy digestion of Grape-Nuts is not hard to find.

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The parts in the wheat and barley which Nature can make use of for rebuilding brain and nerve centres are retained in this remarkable food, and thus the human body is supplied with the powerful strength producers, so easily noticed after one has eaten Grape-Nuts each day for a week or 10 days.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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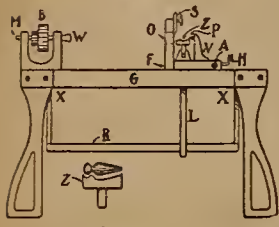
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Farm Notes

A Neglected Money-Maker



FARMERS on average-sized farms find that there are many days when work which yields cash returns is scarce. To such as these the lathe and workshop should appeal. There is an unlimited sale for the products of the lathe. Knife-handles, file-handles, awl and chisel handles, crank-handles, rolling-pins, chair-rungs, porch fixtures, toys, etc., are always in demand. The selling price of these articles vary from three to eight dollars per thousand, according to size, material and complexity of design.

In this line of production the majority of farmers have what the manufacturer calls "the advantage of supply"; that is, he has on his own farm, close at hand, the requisite raw materials in the form of small poles, slabs of wood, or edgings from a sawmill.

The steps in producing a finished handle from the raw material are as follows: The poles or slabs are cut in lengths varying from two to three feet in some multiple of the length of the handle, seasoned and then split up into square sticks varying in size according to the diameter of the handle to be turned. The sticks are placed in the lathe, and by the combined motion of lever and foot press a rough handle is produced as rapidly as the motions can be made.

Three or four hundred of these rough handles are then placed in a slowly turning tub containing a quantity of fine sharp sand. In this tub the handles are polished and made ready for sale. It is not an uncommon day's work for one man to split the sticks and turn 2,500 handles in ten hours. Figuring these at an average selling price of four dollars per thousand, the cash returns for one day's work in the shop would be ten dollars.

If we estimate that the machinery would be used fifty days during the year, the expense incident to this daily production may be estimated as follows.

Expense of getting the raw material to the shop.....	\$12.00:	One day	\$0.24
Interest on cost of 5-horsepower engine, \$120, @ 5%.....	6.00:	" "	.12
Interest on cost of lathe, \$100, @ 5%.....	5.00:	" "	.10
Interest on cost of smoother, \$30, @ 5%.....	1.50:	" "	.03
Cost of gasoline for one day (3 gallons).....		" "	.60
Cost of lubricating oil.....		" "	.10
General yearly expenses, such as for batteries, lathe-blades and accidental breakage (a high estimate if care is exercised).....	15.00:	" "	.30
Average freight charges on 2,500 handles.....			.40
Daily expenses.....			\$1.89

The daily net gain would, therefore, be \$10, less \$1.89, or \$8.11. If a man's time is considered to be worth at the rate of \$1.50 per day for odd spells, the year's net profits on \$250 invested in machinery would be (\$8.11, less \$1.50, times 50) \$330.50, or enough to pay for the machinery in a single year and leave \$80.50.

The engine can be used for various other purposes on the farm. Moreover, with such a workshop it is possible to keep hired help the year around to a good advantage.

Explanation of first illustration: A, handle; B, belt-pulley; F, carrier; G, frame-guide; H, adjusting screw; L, leaner; M, pulley shaft; P, tail-stock point; R, knee press; S, smoothing-blade; V, tail stock; W, taper screw cavity; X, hinges of knee press; Z, chisel.

MONROE CONKLIN, JR.

Trapping Humanely

I REGRET to have seen in FARM AND FIRESIDE articles on trapping animals in which not a single word of caution was given to the boys who are supposed to do it. The unfortunate creatures which, through no fault of their own, have become superfluous and annoying, should be killed in a humane manner. The articles that I have read do not even advise that the animals be caught in traps that do not torture them. Everyone knows that the most horrible cruelty can be inflicted by means of steel traps. At the very best, the animals are frightened beyond

description by being caught. The least cruel way that I know of is to catch them in traps in which they can move around. They should then be drowned or chloroformed. However, this last method is often least convenient in country places.

MARY F. LOVELL.

EDITOR'S NOTE—Mrs. Lovell encloses a pamphlet written by Mr. A. W. Dimock, in which he says: "I have followed a trapper over his line of traps. The trouble of the trapped animal is over when he reaches it. A blow or two on the head with a club which he carries ends its life. But it is not pleasant to think of the days of torture while the wretched creature strove to tear its leg from the iron jaws until the flesh was worn to the bone. Traps are often left untended for days, and I have found them with dead and decayed victims clutched in their serrated jaws. Always they bore evidence of long-continued suffering and suggestion of fever, thirst and starvation, added to that torture, which in the days of the Inquisition was called the 'boot.' For usually the flesh of the leg had been lacerated until the bone lay bare, and often that was crushed."

Bacteria, Yeasts and Molds

BACTERIA are not the only microscopic plants that are worthy of note; yeasts and molds likewise produce many changes of importance on the farm.

Yeasts can be recognized under the microscope, because they multiply by producing buds and not by splitting into halves as do the bacteria. Usually, too, the yeasts are somewhat larger than the bacteria. Molds can be distinguished from both the preceding because of the formation of cobwebby threads. A mold is usually much larger and more complex than either bacteria or yeasts.

Yeasts are important, because they can change sugar into alcohol and carbon dioxide gas. The housewife makes use of this fact in making bread; the yeasts which she uses produce the gas which causes the dough to



Bacteria Yeast Two forms of mold All highly magnified

rise. Yeasts also change the sugar of fruit juice into alcohol, as in the preparation of wine or cider. Yeasts are probably also important in bringing about the fermentation which causes silage to keep.

Molds are active in producing decay, and in some cases cause disease.

R. E. BUCHANAN.

Business ethics should forbid anyone to grow rich by impoverishing others, and farm ethics should forbid anyone to grow opulent by the impoverishment of his fields.

The Wood-Thrush

AS THE name implies, these are the woodland thrushes; while their cousin, our red-breasted robin, prefers the open fields and the lawns of the towns. They are slightly smaller than the robins, with cinnamon-brown upper parts, being reddest on the head and shoulder; underneath white, with large black spots on the breast and sides. The nest, too, resembles that of the robin's, and is to be found in bushes or trees. Their food habits resemble those of their relatives, but they gather it from the woodland floor instead of in the open country.

But it is as musicians that they surpass the robin; and, as I am not a musically minded



person, I cannot do better than quote a musician who has endeavored to place bird-songs on paper. I refer to Mr. F. S. Mathews' (our illustrator) "Field Book of Wild Birds and Their Music." He says, in speaking of the wood-thrush: "His music steals upon our senses like the opening note of the great Fifth Symphony of Beethoven; it fills one's heart with the solemn beauty of simple melody rendered by an inimitable voice! No violin, no piano, no organ, confined to such a limited score can appeal to one so strongly. The quality of tone is indescribably fascinating; it is like the harmonious tinkling of crystal wine-glasses, combined with the vox angelica stop of the cathedral organ."

To me the bell-like tones sound like celestial music, and I always wish that they would vibrate in my ears for ever and ever. Amen.

H. W. WEISGERBER.

Intelligence

News of Interest to Every Farm

A calf with no hair was born recently on a farm near Mount Carroll, Illinois.

Governor Burke of North Dakota, was raised by an Indiana farmer, who found him on the streets of New York.

Judged by the number of victims which it has caused to bite the dust, the motor-car has already more to its credit than all the deadly weapons of war.

Black-head in turkeys has made its way from this country to South Africa. Thus diseases sweep over the world—sometimes faster than the knowledge of their prevention or cure.

A woman in Washington, Pennsylvania, was saved from the blow of a highway robber by the protection to her head of a "rat" worn in her hair. Superiority of the headpad to the footpad, as it were.

A French physician gives as the result of his experience the opinion that diseases of children are sometimes caused by milk from cows fed on distillery and beet-sugar-factory slops and refuse. It is thought that a poison is developed which passes into the milk.

Are swine plague and hog cholera the same disease? Koeppen, a German scientist, thinks that the plague, when it is seated on the lungs, is an infection from the intestines of animals having cholera. If this is true, the two diseases are different manifestations of the same sort of infection.

Doctor Wiley recommends to Congress the passage of a "net weight" law forcing manufacturers who sell in packages to mark each package with the weight of the contents "truly stated." The State of North Dakota has had such a law for some years, and it has worked well.

Cotton-growing has entered Greece. Eight thousand acres were grown in that country last year, and it is believed that within three years the area will be extended to 250,000 acres. The Greek product sold in Liverpool at from twenty to twenty-three cents a pound. Cotton-planters, attention! Study mixed farming!

An exchange says: "Secretary Wilson told the Senate finance committee at the hearing on the free sugar bill that enough sugar could be grown in North Dakota to supply the United States." Perhaps so, but do we not need that land for something else much more than we do for sugar-beets. What about some more wheat?

Cockroaches have been found guilty of spreading the germs of consumption. In addition to this, where milk and other foods are kept in places infested by cockroaches, it has been found that the insects carry into milk the bacteria which causes it to sour, and spread the spores of various molds and other harmful taints in foods.

It is reported that the natural pastures of the Philippine Islands are enormous in area and capable of supporting many millions of live stock. There are also many crops available for finishing the beeves, including corn, sorghums, sweet potatoes, cassava, peanuts, velvet beans and cow-peas. Hay can be cured in Luzon in the dry season, and good grasses are said to be available.

The California Experiment Station finds that by cutting morning-glories every five days with knives running three inches below the surface, the roots become impoverished and die. On ten acres thirty cuttings cost thirty days' work, being nine dollars per acre. Less than half a dozen shoots appeared on the ten acres the next year. Ordinary cultivation did no good at all.

Keep the geese or other birds in a darkened room. Let in the artificial or natural light every now and then. The birds will imagine that it is just that many mornings and will be ready to eat each time. At least that is what several men in Europe believe, and they are following this method and that successfully in fattening poultry. In this way the fowls will eat six or seven times a day.

The Alaska experiment stations report great progress in farming in their territory. Potatoes, rye, barley, wheat, strawberries and other small fruits grow well there. Live stock promises well on Kadiak Island with long-wool sheep and Galloway cattle. Some of the Siberian alfalfas introduced in this country by Professor Hansen are being tried out at Fairbanks. Many vegetables grow well. Short-season varieties are being bred square for the climate. There are 15,000 square miles of agricultural land in the Tanana Valley alone. Homesteads may be taken up of 320 acres each, but the homesteader must pay for the surveying, which costs several hundred dollars. Farmers will do well to hesitate long before venturing into a land so strange to the average man, and so untried.

The Sunshine and Lend-a-Hand Club has been organized in Berks County, Pennsylvania. Its membership consists of members of the community who enroll for the purpose of carrying school-children in motor-cars to the county field day and play picnic at Kutztown. The only requirement for members is the ownership of an automobile and the willingness to be kind. Capable of being adapted to the conditions in any State which has children, autos and kindness.

Sugar-beet pests caused a loss of \$10,000,000 last year. Besides cutworms, which are found almost everywhere, the wireworm is bad in Southern California, the curly-leaf hopper and webworm do much damage, the beet-aphis is bad in the Northwest, grasshoppers are destructive from Michigan to Kansas, white grubs cause trouble in the North, and in the South the flea-beetle and blister-beetle do great harm. The cutworm is the worst and sometimes migrates in great armies.

A report from New South Wales, Australia, states that where milking-machines have been used for nine years, the verdict of the users is that the milking has been done cheaper than is possible with hand milking, and the milk can be kept cleaner. This, of course, in the hands of capable operatives. The milk yield of the cows is not appreciably cut down on the adoption of the milking-machines, and cows milked for five years with the machines seem to give as much milk as when milked by hand.

People used to think that peanuts were safe from insect harm. But now that many of the nuts are broken in thrashing, the insects get in and destroy millions of dollars' worth of this valuable product yearly. When sacks are piled in warehouses, and the shells are cracked by the tramping of workmen, the "bugs" get in and ravage. The common moth of Indian meal is the worst offender. Proper handling will cut down this loss. After the pests get in, the only available way to get rid of them is to apply heat to the temperature of 120 degrees Fahrenheit.

A new "champion cow" has scored. The greatest cow in the world is owned by Dan Dimmick & Co. of East Claridon, Ohio. She gave in a year 27,404.4 pounds of milk, which contained 1,058.34 pounds of butter-fat. This is equal to over thirteen hundred pounds of butter. Four good dairy cows as cows go would not have done better. And she ate no more than a poor cow would have eaten. Her name is Banostine Belle de Kol, but she isn't to blame for that.

The name comes from the idiocy of the Holstein-Friesian breeders' custom of hitching the city directory of some town in Friesland to the tail of every fine cow.

Just Hit Them

HERE is an illustration of the best fly-catcher ever invented and which is very easily made. Take a piece of common wire-cloth fly-screen about six inches wide by eight inches long, and after bending over about one-half inch all around, fasten it between two light pieces of wood about twelve inches long. When Mr. Fly lights, just hit him a light tap. It never fails to kill.

MRS. W. H. CORWIN.

Fair Dates for 1912

FOLLOWING are the fair dates for 1912, as arranged by the American Association of Fairs and Expositions:

- Aug. 26—Iowa State Fair, Des Moines.
- Aug. 26—Ohio State Fair, Columbus.
- Sept. 2—Minnesota State Fair, Hamline.
- Sept. 2—Indiana State Fair, Indianapolis.
- Sept. 2—Nebraska State Fair, Lincoln.
- Sept. 2—California State Fair, Sacramento.
- Sept. 9—South Dakota State Fair, Huron.
- Sept. 9—Wisconsin State Fair, Milwaukee.
- Sept. 9—Kansas State Fair, Topeka.
- Sept. 9—Kentucky State Fair, Louisville.
- Sept. 9—West Michigan State Fair, Grand Rapids.
- Sept. 9—Oregon State Fair, Salem.
- Sept. 9—New York State Fair, Syracuse.
- Sept. 9—Colorado State Fair and Exposition, Denver.
- Sept. 16—Interstate Live-Stock Fair Association, Sioux City, Iowa.
- Sept. 16—Michigan State Fair, Detroit.
- Sept. 16—Central Kansas Fair Association, Hutchinson.
- Sept. 16—Tennessee State Fair, Nashville.
- Sept. 16—Vermont State Fair, White River Junction.
- Sept. 16—Colorado State Fair, Pueblo.
- Sept. 23—Interstate Live-Stock and Horse Show, St. Joseph, Mo.
- Sept. 23—Tri-State Fair, Memphis, Tenn.
- Sept. 23—Montana State Fair, Helena.
- Sept. 23—Oklahoma State Fair, Oklahoma City.
- Sept. 30—Interstate Fair, Spokane, Wash.
- Sept. 30—Oklahoma State Fair, Oklahoma City.
- Sept. 30—Missouri State Fair, Sedalia.
- Sept. 30—Utah State Fair, Salt Lake City.
- Sept. 30—Interstate Fair, Trenton, N. J.
- Oct. 7—American Royal Live-Stock Show, Kansas City, Mo.
- Oct. 7—Illinois State Fair, Springfield.
- Oct. 7—Muskogee Fair Association, Muskogee, Okla.
- Oct. 14—Northwestern Live-Stock Association, South St. Paul, Minn.
- Oct. 14—Texas State Fair, Dallas.
- Oct. 28—Louisiana State Fair, Shreveport.

Garden and Orchard

Orchard Cropping

ORCHARDISTS, I think, now agree that the ground occupied by a bearing orchard should not be otherwise cropped. Many, however, grow crops up to the bearing age—some even claiming that such crops pay the cost of maintaining the orchard up to the bearing period.

Undoubtedly in the rich virgin valleys of the West, where water is abundant and the essential plant-foods and vegetable matter or "humus" are seemingly inexhaustible, a double cropping, consisting of annual cultivated crops and growing trees, has really been a financial success. Where, however, one must buy his commercial fertilizer and pay as high as \$2.50 a load for manure, it is well to take the proposition squarely in hand and size up the situation. It is evident to me that some crops must be eliminated from consideration: first, all those crops not cultivated; second, crops leaving the ground bare in the late fall; third, crops which, because of their gross feeding, will interfere with the growth of the orchard.

It is very rarely that a young tree can grow normally in a hay or grain field. The demands of these crops upon the water content and available plant-food in the soil are too great.

During the normal cultivating season of the orchard—with or without additional crops—the much-prized vegetable matter is gradually being burned by the sun. Some soils having much "humus" could lose their surplus through several years of constant cultivation without noticeable injury. If these soils were located where the winters were mild, on slopes where no washing would occur, it might be possible to grow a full-season crop in the young orchard for several years without much harm. But this is an extreme case, and it is a bad plan to leave the ground bare in the dormant period. Whether or not we crop our orchards, we should plan to put back all or more "humus" than is consumed. The cover crop does this for the non-cropped orchard, and the only crops harvested should be those maturing early enough to permit being followed by a cover crop.

Theoretically, we should be able to fertilize a field in such a manner that however peculiar or great the demands of the growing crops are we could replace them by fertilization. And in the future a balanced ration for the soil will be considered just as important as the balanced ration for the cow. At the present stage of farm practice, this cannot be done, and consequently we cannot recommend growing in the orchard such exhausting crops—even though they may be very profitable—as sugar-beets, tobacco, cabbage and onions.

The Value of Standing Stalks

Where the orchard is exposed to high winds, I believe that corn, planted not too near to the trees, is a good crop to raise. This is particularly true for spring-planted trees, which need a certain amount of protection before getting a good foothold. Last year, I planted my corn in just such a location. Few of the eight hundred peach-trees died, and the rest made a very satisfactory growth. About the first of August—it might better have been sooner—I planted oats in the corn-rows, and by November the field was green with oats standing knee high. In about half the field the corn was cut. In the other half the corn was husked without cutting. The standing stalks last winter held the snow wonderfully well. The snow there was about three feet deep, while there was only about half as much snow in the oats alone. But not considering the value of the snow covering, the combination of oats and stalks will be well worth while in furnishing an abundance of vegetable material to be plowed under early in the spring. The showing of the two plots is unquestionably in favor of leaving the corn-stalks standing in the field. Early-maturing beans and early potatoes are two good crops for us to grow. Both are off by the first of September, when it is still time to get a good growth of rye. This year fifteen acres of beans planted in the orchards gave me a gross return of \$315, and three acres of early potatoes brought about \$150. This, of course, more than paid for raising the crops and cultivation and care of the trees in that space. But there is the fertilizer proposition—an expensive one! I find, too, that my two-year-old trees in a cropped orchard (beans) did not do as well as resets in an uncropped cultivated orchard where there were larger trees to compete with and no better soil.

Small fruits are sometimes grown successfully in orchards. Such a farm I have in mind near Hilton, New York. Currants, in this case, are planted among apples, peaches and grapes. The currants have more than paid for the farm, the cost of the trees and their care up to maturity. I attribute this unusual case much more to the aggressiveness and character of the grower, however, than to the method itself.

Sometimes a part of the cover crop may be harvested to good advantage. A certain grower in the East last year sold the largest of the turnips resulting from a cover crop. From the amount he harvested and the market price, I think the crop must have paid cultivation expenses. Enough turnips were left to supply a soil covering and an abundance of vegetable matter.

I am not sure how my arguments may impress my readers, but my opinion as to the general proposition of cropping the orchard may be summed up in a few points: In the bearing orchard, no crops should be grown. During the period up to maturity crops should be raised for only a few years, and these should be short-season crops. Although some orchardists grow no crops whatever, in my experience it does no harm to crop the first year, and the practice may even prove a benefit to the orchard.

A. J. ROGERS, JR.

Some people suppose that they are thinking over a proposition when they are merely collecting their prejudices against it.

It's Worth Remembering

IN A recent issue of FARM AND FIRESIDE I was given the method of protecting young apple-trees from rabbits by wrapping building-paper around the bodies of the trees. This I have found not to be altogether satisfactory. The paper is often neglected and left on the trees until midsummer, then taken off, or torn off by wind and rain. The hot sun beating down on the hitherto protected and shaded part is almost sure to scald the young tree.

The most desirable method I have found to stop the "bunny" is to wash the tree with beef or hog blood for perhaps twelve or fifteen inches above the ground; or rub the tree with a beef-liver, which will serve as well as blood. One application will answer for twelve to eighteen months; then I would favor repeating the application. It is a splendid protection. WM. HECKMAN.



Making More Potatoes

WHILE animal-breeding is at present a far more important industry than plant-breeding, the possibilities of plant-breeding are the greater, owing to the larger number of individuals involved and the shorter time required for a generation, and is now receiving considerable attention from the scientist and farmer.

The potato is one of the staple farm crops particularly adapted to experimental work in this line. The propagation is entirely by budding or asexual methods, thus troubles due to crossing, or dangers of unintentional cross-fertilization are avoided.

The method that appears to give the best results in actual farm practice is that of selecting a number of the best obtainable tubers and cutting each into four pieces. These are planted in four hills that are marked in such a manner that they can be distinguished at any time. When harvested, the product of each of the four hill units is placed in a paper sack and labeled. These sacks are then weighed, the number of marketable tubers counted, and examined for imperfections of any kind.

The seed for the second crop is selected from the best yielding units, with consideration for size and shape of the tuber. This process can be kept up indefinitely. After the best seed has been selected for the breeding plot, the remainder from the best hills may be used for a multiplication plot, where commercial seed is grown. The characteristics that should receive attention, aside from increased yield, are: the number in the hill, which should be such as to give a medium-sized tuber, with the increased yield, the shape and smoothness of the tuber, and the ability of the plant to resist disease and insect enemies.

Four years' work under these methods have shown some interesting results. There appears to be a correlation between high-yielding hills and resistance to disease and to the ravages of the potato-beetles. Fifteen per cent. is a conservative estimate of the actual increase in the field crop due to pedigreed seed. This does not take into consideration the increased quality of the crop.

The ground used for a breeding plot should all be in the same state of till and fertility, and the character of the soil should not vary. The crop should be planted, cultivated and fertilized in the same manner as the field crop, excepting that, of course, the seed must be planted by hand to insure accuracy in the records. C. OWEN CARMAN.

Garden Notes

By T. GREINER

Forcing with Dynamite

IN THESE days we hear a good deal about planting trees with dynamite. Instead of digging the holes for young trees with the spade, a stick of dynamite is inserted about eighteen inches deep in the center of the spot where the tree is to stand, and there exploded, thus loosening the subsoil down to a considerable depth and giving the tree-roots the best possible chance to spread and feed. I recently built a new house on a half-acre lot in the heart of the village. The soil of the lot is underlaid with stiff clay. I desire to fix it up for a home garden for a tenant, also to plant some grape-vines, a few trees, etc. This plan of breaking up the subsoil, and thereby enlarging the water-reservoir below, which must supply the moisture to the growing plants during a dry season, appeals so forcibly to my notion that I am preparing to plant and explode small charges of this explosive not only for the trees and vines, but also over a portion of the vegetable-garden. It is just possible that at the expense of a few dollars striking results may be obtained. The advantages of such procedure for trees have already been well established.

Nitrate of Soda

I am asked about the use of nitrate of soda. If, as a home gardener, you can manage to secure some nitrate of soda from a large grower near you, or in some other way, by all means give this a trial. It often has quite striking results. This especially on spinach, beets, onions, lettuce, cauliflower, cabbages, etc. Scatter a little of it broadcast over your garden, say a pound of it to a strip eight or ten feet wide and forty feet long. Or if you happen to have common saltpeter or saltpeter waste (nitrate of potash), you may use that in place of the other. Sometimes these nitrates give even more marked effects if applied in combination with lime. Still, in the home garden we can raise very good crops of very good vegetables, if otherwise managed right, without the use of a pound of nitrates. But as a market-gardener, raising spinach, beets, onions, lettuce, etc., I would greatly miss nitrate of soda if I had to do without it.

For the Radish-Maggot

A Washington reader inquires about remedies for the radish-worm.

The radish-maggot, which is the larva of a fly that in general appearance resembles a common house-fly, is a hard foe to fight. Sometimes we lose whole beds of radishes through its depredations, and at another time we may not see a specimen of the maggot in a bed. The free use of tobacco-dust around the plants has a tendency to protect them from attack. Spraying frequently with tobacco-tea or kerosene emulsion, aiming particularly to reach the stem near the ground with the solution, may kill some of the maggots while first hatched or trying to eat their way into the fleshy part of the root. As a final resort, you may try growing the radishes under a cloth (muslin) cover, in the same manner as is now recommended for growing cabbage-plants to protect them from maggot attack.

The Wheel-Hoe

If I had to do without my Iron Age or other wheel-hoe, I would very speedily reduce my garden operations to a few square rods. I like to sow garden-seeds with the drill, and to cultivate my plants with wheel-hoes, either horse-hoe where rows are wide enough, or hand wheel-hoe for narrow rows. This saves lots of work. But I want the hoe-blades clean and sharp. If we handle them carelessly, they are liable to rust, and the dirt will stick to them. I have looked my supply over, giving the blades a good rubbing over and oiling, and also ordered a few extra sets of hoe-blades. They do not cost much, and "new blades cut clean." Clean work adds much to the pleasures of gardening.

A Lame Horse Is Worse Than No Horse at All

For You Have to Keep on Feeding a Lame Horse While It Is Not Earning a Cent for You. Don't Waste This Money.

Mack's \$1,000 Spavin Remedy Will Positively Permanently Cure Any Kind of Lameness.

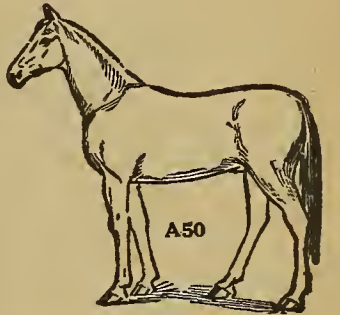
Have you a lame horse? You can't afford to keep it and you can't sell it. You can put it out of its suffering—or you can practically give it away. Losing money any way you figure.

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Mack's \$1,000 Spavin Remedy has saved many a horse for years of hard, useful work, that veterinarians gave up. Whether it is spavin, ringbone, thoroughpin, curb, capped hock, shoe boil, sprung knee, ruptured tendons, sweeny or any other cause of lameness, Mack's \$1,000 Spavin Remedy will cure it. If it does not, your money will be refunded—every cent of it. If you can't get Mack's \$1,000 Spavin Remedy at your nearest druggist's, send us \$5 and we will ship it to you direct, express prepaid, and send our \$1,000 Guarantee Bond to refund your money if the cure is not made.

If you have any doubts what is the cause of the lameness, use the coupon below and our expert veterinarian will diagnose the case and tell you just exactly what to do to bring about a permanent and speedy cure. Don't delay. Every day you put it off your horse may become worse, and you are losing money besides. Our free book, "Horse Sense No. 2," should be in the hands of every horse owner. McKallor Drug Co., Binghamton, New York.

On picture of horse mark with an X just where swelling or lameness occurs, then clip out coupon and mail to McKallor Drug Co., Binghamton, N. Y., with a letter telling what caused the lameness, how long horse has been lame, how it affects the animal's gait, age of horse, etc. We will tell you just what the lameness is, and how to relieve it quickly. Absolutely no charge. Write to-day.



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exclusively. This is because Tubulars have twice the skimming force of other separators, skim twice as clean, pay a profit no other can pay. Tubular cream and butter bring extra prices, because dairy Tubulars contain no disks to chop or taint the cream. For these reasons, over 100,000 dairymen in Iowa alone use Tubulars. Ask for free trial and exchange proposition. Write for Catalog 112.



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Live Stock and Dairy

Dairy-Cow Profits

SCIENCE is ascertained facts. Dairymen want facts upon which to base their practice. Only a few dairy farmers in the country are proving that dairy farming can be made to pay a large labor income. All these dairymen practise wholly or in part the plan of feeding I will describe, which is fully approved by the state agricultural institutions, and by the most progressive and successful dairymen. There are two things dairymen will do well to work for: Cut out the boarder cow and cut out the grain-bill.

First get rid of the cow that cannot pay a satisfactory profit when rightly fed. The scales alone can tell you which cows you can afford to feed.

The essentials for a good ration are that it be fairly well balanced; that is, the ratio of protein and carbohydrates shall be about one to five and one half, or one to six. It may be somewhat wider to make use of available food. It should be digestible, palatable, succulent and grown on the farm.

The following formula, with mixed hay as a basis, is fairly well balanced, but lacks nearly all of the other requirements: mixed hay, 20 pounds; corn-meal, 3 pounds; oat-meal, 2 pounds; buckwheat middlings, 2 pounds; cottonseed-meal, 1 pound. In this ration there are 2,473 pounds of protein and 13,184 pounds of carbohydrates. The ratio is a little more than one to six. Those who wish to make up a ration will find bulletin 154, furnished free by the New York Experiment Station, Geneva, an aid.

The above ration is the best that could be

formulated with timothy or mixed hay as a basis, and on many dairy farms all foods except the hay would be purchased. Its main deficiency is succulence, and because of this it is less palatable and less digestible. There is no way to add water to the ration and get as good results as to feed succulent green foods that contain water. One objection to purchased foods that dairymen buy lies in the fact that they may be adulterated with ground corncobs, peanut-shells, oat-hulls, mill-sweepings, screenings, etc., which are not digestible.

The ration that best feeds the cow for maximum milk production cannot be generally purchased, but must be grown on the farm. The plan of dairy farming by which the soil best feeds the cows I will describe as follows.

During the season when the cows are stabled top-dress grass-sod that needs renovating. It will pay well to supplement the stable manure with finely ground raw phosphate rock scattered in the gutter and used as an absorbent. Of course, the gutter should be tight, so all the liquid may be saved.

Plow the ground so top-dressed in the spring, and plant (in New York) in drills, three feet or more apart, six quarts of Pride of the North corn, or a similar variety, and four quarts of Medium Green soy-beans. This soy-bean grows in bush form and does not hinder the growth of corn by winding around it. Mix the corn and beans well, and drill them in together. Before the last cultivation of corn sow between the rows a cover crop of rye, rape, clover, vetch or whatever may be adapted to the soil and the climate.

The soy-beans mentioned will ripen with the corn, and when both are in the milk stage, cut and put in the silo, and you should have ensilage heavy with corn and beans that will be nearly a balanced ration, will be succulent and palatable, and the cash outlay will be small.

The next spring seed the corn-ground with clover or alfalfa, after applying lime and inoculating for alfalfa if it is to be sown. Sow the alfalfa, if the soil is of good depth and well drained, as follows: make a fine seed-bed, and sow just before planting-time (about May 1st) one-half to one bushel of equal parts of Canada peas, and either oats



Getting ready to produce profit

or barley, preferably barley, per acre, and harrow in quite deep. This is for a nurse crop. Next sow thirty pounds of alfalfa per acre if soil is right for it, if not, thirty pounds of clover and timothy, which is made up two-thirds clover. A little alfalfa-seed mixed in will tend to inoculate the soil. Roll or plank in the seed. The peas and barley can be allowed to ripen and the grain ground for the cows. They may be cut in the milk stage and cured for hay.

This plan of dairy farming provides corn-and-soy-bean ensilage, oats and peas (grain or hay) and alfalfa or clover-hay for the winter ration, and green alfalfa and ensilage to supplement pastures in summer. The ration is fairly well balanced, is digestible, palatable and succulent, and is grown on the farm, so is a scientific ration for the dairy cow.

Although dairymen get a large milk production with the ration, yet some find it can be increased somewhat by feeding additional grain, and it may pay to do this for maximum production.

Dairymen who have tillable land, should practise the short rotation, unless they can keep the land in alfalfa for several years, for with it the farm will feed the cows, and dairy farming will become a profitable business.

W. H. JENKINS.

EDITOR'S NOTE—Here's a terse, brief statement of the essentials of good dairying, not only in New York, but everywhere, by a practical dairyman. Those who wish to study the art of balancing their rations should buy a book on feeding.

Sow some rye on the oat-stubble, first stirring and harrowing it well. It will furnish fine winter pasturage, and act as a great fertilizer next spring, when the soil is again stirred.

Never buy a thing simply to get rid of the agent. You, of course, get rid of him, but you also get rid of your money, and a little of your power to say no in refusal of things you do not want.

If you are a little doubtful as to the keeping qualities of the corn you first gather, put a load in one crib, then a load in another, allowing each load to air out well before being covered up by the next load. You will thus avoid heating and subsequent mold.

Avoiding Sore Shoulders

I HAVE found that sore shoulders on horses at plowing and cultivating time are due largely to a lack of humane thought, and to neglect on the part of the driver. We cannot be too careful about fitting the collars. The trouble lies there. The collar should be fitted to every horse with precision and pains. It is cruel and a mistake to change harness from one team to another without carefully adjusting the collars each time. The padding in the collar should be worked down with the hands until it conforms to the shape of the horse's shoulder. The surface of the collar should be clean and free from grit.

When the collars are removed after working, it takes but little time to bathe the shoulders in cold water, and it counts for a great deal. It toughens the shoulder and removes all sweat and dirt. Galling will never occur if the horse is not overheated beneath the collar. It takes some thought and care to prevent this, especially on sultry humid days.

Cultivating is very strenuous and heating, and upon sultry days the team should be rested often, the collar being lifted from the shoulders to allow them to dry and cool.

Many think galled shoulders a necessary evil, but sore shoulders can be prevented and are more easily prevented than cured. If I think I cannot avoid galling upon a hot, humid day, I prefer to put the team in the barn.

C. J. GRIFFING.

Milk in Hot Weather

THERE is always trouble with milk and cream in hot weather. They will spoil if you give them half a chance. It is possible to keep them good, however, and on a dairy farm absolutely necessary.

The bacteriologist says that in warm milk or cream the bacteria multiply every twenty or thirty minutes, so that before long our milk is a regular menagerie. It seems that the system is like that of the old horseshoer who charged a cent for the first nail and doubled the price each nail. The results soon amount to enormous figures.

In actual practice, we are too busy to stop and count the bacteria. And if we tried, it would be pretty hard to see them unless they were magnified a few hundred times. But we do know that the milk sours very quickly if it stands a while warm. We are able to make it stay sweet a long time—a couple of days if we wanted it to—by cooling it immediately after it is milked.

Where there is much milk to handle, the best way is to use one of the regular coolers or "aerators." They are not expensive, and they help wonderfully in keeping the milk in good condition. If there is only a little milk, it may be cooled pretty rapidly in pans set in cold water.

People are deceived sometimes in the length of time it takes to cool a big can of milk set in the cellar. Try it with a thermometer and see. It won't be all cool for nearly twelve hours. And that gives those germs a big start. Sudden and rapid cooling is the big secret in keeping milk and cream in summer.

A. C. PAGE.

Alabama Hogs

A READER in Venezuela writes to us relative to hogs. He hopes to secure in America just the type of hog which will do well in his country. We quote the answer of Mr. Dan T. Gray, Animal Husbandman of Alabama Polytechnic Institute:

We have a pretty warm climate here in Alabama, but we find that almost any breed of hogs do well here except the white ones; the white ones tend to sun-scald. The red and black breeds, however, seem to suffer no more from the heat here than they do in the North. I have lived in both the North and the South and cannot see that our hogs here get warmer than they do in the North. The kind of breed that you want will depend upon how you feed and handle them. Here in Alabama we want a hog that is a good grazer, as we depend on pasture crops for the profits. This being true, the Duroc-Jerseys and the Berkshires have become very popular, as they are both excellent grazing animals. I think that you would make no mistake in selecting either one of the two breeds mentioned above. If you do not intend to depend upon grazing so much, the Poland-China would be a good breed for you.

I think that you will experience no particular difficulty in taking hogs from this climate to your home, although I would select the cool part of the year for making the transfer. When you take a hog from here, you should feed him lightly for a few days after he gets there, and use cooling and loosing feeds, as shorts or bran. It would also be wise for you to purchase young rather than old animals; young ones will stand the change better than old, heavy ones.



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Every sensible person wants the **best** of everything, but in many things the best is beyond their means and they must necessarily be content with something less.

In the case of the Cream Separator, however, the **best** is fortunately the **cheapest** as well, and it is of the greatest importance that every buyer of a separator should know this.



Moreover, the **best** is of more importance in the case of the Cream Separator than in anything else, since it means a saving or a waste **twice a day every day in the year** for many years.

It is true that DE LAVAL Separators cost a little more in first price than some inferior separators, but that counts for nothing against the fact that they **save their cost every year over any other separator**, while they last an average twenty years as compared with an average two years in the case of other separators.

And if first cost is a serious consideration a DE LAVAL machine may be bought on such liberal terms that it will actually **save and pay for itself**.

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The FARMERS' LOBBY.

I DON'T know anything that constitutes a poorer equipment for a man setting out to discuss things than plain, old-fashioned ignorance. When ignorance gets tangled up with the assumption of information, and a neat, effulgent gloss of conceit and superiority is cast over the whole, it makes a combination that's pretty hard to beat, no matter where you find it.

That's the equipment that evidently was possessed by the man who wrote an editorial in a Minneapolis newspaper recently. It was based on an article in the Lobby a few weeks since discussing the coöperative agricultural banking systems of Europe. Any who read the Lobby letter on that subject may recall that it pointed out the need, in many sections of this country, for more adequate methods of extending credit to the farmer. The tendency to make it easier and more attractive to invest money in the cities than in the country was suggested. The country doesn't get capital so easily as it ought, nor in such ample supplies as it needs. This, as to important parts of the country certainly, and I think as to practically the entire country, is so well known, and rather obvious, that I had not supposed there would be anybody to question that particular premise.

But the Minneapolis editor did. He pointed out in his crude piece that the Lobby was full of sky-blue prunelles and bigoted buncombe. The fact, he declared, was that the country was just chock-full of money that it was trying to unload on the farmer, and the farmer was lolling around in wealth, wondering how to get rid of it; banks were competing with each other for the privilege of lending him money that he didn't want.

"It Would Make a Man Tired"

That sort of thing makes a real farmer tired. It's off the same goods with a lot of the stuff we have to read nowadays about the farmers all riding in automobiles, and being natural-born aristocrats. It's true that there are some farmers with automobiles; a lot of them, in the aggregate; but every time I make inquiries about that vague region where "all the farmers have automobiles and there isn't enough loaning business to keep the poor loan companies going," I am referred to the next county or the next state. It's like the end of the rainbow and the pot of gold; it just isn't anywhere in particular. You can see the rainbow, so, of course, it exists; and you can read all this junk about the farmer being so rich he can't afford to drink anything less expensive than Mumm's Extra; but you can't find the rainbow when you hunt for it, and you find but mighty few of these putridly rich farmers. When you do, they mostly aren't farmers; they're landlords, city farmers, or something else of a fancy character.

To deny that there is wide-spread need, east, south and in the transmissouri west, for better banking and credit systems in the farmer's behalf, is about as sensible as to deny a locomotive that butts you and your cart off the track. Legislatures of some of the States have initiated movements to investigate and if possible adapt the European systems to this country. The Southern Commercial Congress at Nashville in April brought David Lubin all the way from Rome to tell it about the German, French and Italian systems of rural coöperative banking; and now the Department of State at Washington has taken up the subject and instructed five ambassadors or ministers of Uncle Sam in Europe to investigate and make detailed reports.

Not only this. The Nashville congress resolved to send a commission to Europe to investigate the whole subject. It was first intended to send the commission this year, but at the time of writing indications are that its tour will be postponed for some months in order that further preliminary work may be done and advices secured through Mr. Lubin, the State Department work and other sources.

If there were further demand for evidence that something remains to be accomplished in this country toward improving the financial facilities at the farmer's disposal, it could be found in the attitude of Mr. Myron T. Herrick, the newly appointed ambassador to France. Mr. Herrick has for many years been the head of one of the greatest savings and investment concerns in the country, in Cleveland. He is a widely experienced, thoroughly practical financier. He has had relations with New York finance, but has never got his vision skew-hawed by being a part of the New York financial coterie.

Saving Money to the Farmers And How the Necessities of Life May be Supplied More Cheaply to People Everywhere

By Judson C. Welliver

He has lived in Ohio, doing business with city and country banks, and directly with farmers. Probably there is not a man in the land who has more information as to the needs of American farmers in this regard. What does Ambassador Herrick think?

The answer is that he is full of zeal for the State Department investigation, and is going to be the right hand of Secretary Knox in making it. He has been for years looking into the European systems of rural banking and credits, believing they were needed to be adapted to this country. He was instrumental in getting the Department to take up the inquiry it is now making, and really laid out the detailed plan for it, as I am assured.

Farm Banks Can be Operated Here

Mr. David Lubin, representative of this government at the International Institute of Agriculture in Rome, also laid his own studies of this problem before the Department, and coöperated with it in making plans for the work ahead. It is proposed, when the ambassadors have gathered all the facts, to have a committee of thoroughly equipped men formulate a detailed plan that will work here; then legislation to make it possible will be formulated, and our legislators will be asked to do the parts that properly fall to them and their work.

The difficulty with my superior editorial friend in Minneapolis is that he has no conception of what this is all about. Bless him, nobody is worrying about the chances of an Illinois or Iowa farmer managing to place a mortgage on a finished farm. That isn't the question. Right here in my own county in Maryland we are talking about building a farmers' elevator and starting a coöperative merchandising society in connection with it, like the one at Rockwell, Iowa, that you have all read acres and acres about; and what do we find? The first farmers' club that discussed it was brought face to face with the fact that to do such a thing makes it almost necessary to have some sort of a banking division to the business, so that the farmers can finance it themselves!

Dreams with a Meaning in Them

In France, for instance, there is provision for creating such an enginery to back up the vast coöperative efforts of the rural communities. We need coöperation of an effective, efficient sort, among farmers, in buying, marketing, selling, everything; and we haven't any independent means of binding ourselves together for want of just such institutions as the coöperative banks of agricultural Europe. It would mean saving of money to the farmers, better profits on their business and cheaper necessities for the people who must buy from them.

When the suggestion of a farmers' coöperative bank was made, at our club meeting, by a neighbor who talked right wisely of the project, the majority of those present leaned back, drew long breaths and half shut their eyes. That all sounded populist, visionary, impossible, to them. They remembered that line of dreams, that Loucks and General Weaver and that kind of folks used to hand out, but supposed that nobody nowadays dreamed of such things.

But the man with the vague notion of a bank at the back of the big coöperative project was right none the less, and there is plenty of testimony in Europe's experience to prove it. There may be some basic reasons why the same plan is unworkable in this country; perhaps the Southern Commercial Congress Commission, and the Department of State investigation inquiry, and other efforts, will demonstrate that there are such obstacles. But I don't believe there are, and nobody else seems to who has taken

the trouble to look a little into the whole problem and to get a bit of information about general experience. My Minneapolis friend would write lots more intelligently if he would take the same trouble to get a few facts and then keep them on straight.

* * *

The Present Parcels-Post Situation

Since the publication of the Lobby letter on the Lewis Parcels Express Bill, so many communications have come with reference to it and the parcels-post question in general, that I am going to give a little more attention to it right here. A conference of friends of parcels post was held here late in May, at which the general opinion was that they ought to get behind the Lewis Parcels Express Measure, drop all the other proposals, and make up their minds to fight it out on this line if it takes two or three congresses. Dr. W. A. Henry of Connecticut, formerly of the University of Wisconsin, whose great work of founding the real experimental work in agriculture is well known to readers of FARM AND FIRESIDE, attended this conference, and after careful consideration agreed that this was the right course. So did President Creasy of the Pennsylvania State Grange, and other friends of postal reform. Doctor Henry is the man who set up the big letter-writing job on Congress, that was put into operation the week of April 18th, and that did so much to focus attention on this parcels proposition. One congressman told the conference that he guessed the folks at home meant it when they said they wanted parcels post: he had over five hundred letters and telegrams in one week demanding action on it.

"You didn't need to flood me with so many letters. I'll never get 'em all answered," he told Doctor Henry. "I've been for real parcels post all the time; why not concentrate your fire on the chaps that are opposed?"

"We couldn't differentiate," replied Doctor Henry. "We thought it might be a good thing to remind everybody that the country is in earnest about this thing. You'll get your letters answered if you do a little extra work, and by the time you have explained to those five hundred correspondents that you are for what they want, you'll not be liable to forget it."

Another congressman tells me he got fifteen hundred letters and telegrams, from April 15th down to date. His people just seemed to have dropped business and taken to writing letters on this subject, all at once. It certainly did have a great effect on the congressional mind.

Following this conference, a statement was given out that "there is now no question whatever of the passage of legislation at the present congress, either at this or the next session. There is, however, serious danger that if passed this session the measure will be so inadequate and picayune as to be worthless to producers and consumers alike."

Legislation that Would Mean Much

This was followed by a statement of the conditions which must be embraced in any such legislation, to make it of real value, thus:

(a) The fullest "collect on delivery" privileges. Where the farmer sends his eggs and butter to his customer, he must have the privilege of having the price collected from his customer when desired, and the rate or postage paid by the consignee. If no such "collect on delivery" of price and postage is given, little use can be made of the system by either farm, merchant or factory.

(b) An enlargement of the mailing privilege to include farm and factory, and mercantile articles, and products. The present law excludes nearly all of these from the mails.

(c) A weight limit high enough to meet the needs of shippers, whether of the farm, the factory or the store. A fixed eleven-pound limit, that cannot be enlarged administratively, will preclude the most important part of the traffic of all three, and force it, at higher rates, from its natural channel, the postal system, to the express companies.

(d) Rates only so high as the articles can pay, and still move to their natural market with a profit. A uniform rate, like a flat rate for all distances, would prevent more traffic moving than it would move, just like the eleven-pound limit, and the silly rule of requiring the rate to be prepaid.

(e) Expert rate-makers who understand what rates the articles can pay, and move the traffic necessary to be moved. Rigid, law-made rates will prevent, by their non-adaptation to the character of the traffic, more articles moving than they will move, and mulct the treasury besides.

(f) Since the whole question is one of rates at last, the lowest rate of railway pay obtainable, at least as low as the express companies pay the railways. In 1908 the mail pay to the railways amounted to 13.2 cents a ton-mile, while the express companies paid only 7 cents a ton-mile to the railways, excluding equipment in both cases.

(g) The same facilities and privileges from the railways that are given the express companies; and provisions for the insurance or indemnification of shippers for shipments lost.

"What is the object of the legislation?" proceeds this statement. "Manifestly to secure relief from the prohibitive express charges, and to extend the service to the country. The express charge now is about sixteen times as high as the freight charge, while in other countries it is only five times as high. Besides, nearly one half of our population, the country, is not reached. The express companies are our 'parcels post,' and the real trouble is that they are in private hands, achieving the lowest service, but securing over a hundred per cent. profit on the investment devoted to the service, with rates so high as to prohibit half the traffic, and a service so limited as to reach less than half the people. Obviously the thing to do is to take this 'parcels express post' out of the private hands, and add it to the postal system.

"Reverting now to the conditions, a, b, c, d, e, f and g, not one of them is observed in any of the pending 'parcels-post' measures. There has never been a subject so unfortunate before Congress. Up to this session, it has received no study from Congress, publicists or the universities. The House, willing to act, feels incompetent to do so intelligently. They want time to do the work right, they say.

We May Expect a System That Will Work

"Meanwhile the Post-Office Appropriation Bill contains a rider, as it passed the House, providing for a joint committee of House and Senate, three members of each, to take up this whole subject and report a bill on the first Monday of December, dealing with parcels post and postal express. If the Senate adopts this rider, the people may reasonably hope for a small-shipment transport system that will work. If it does not, and action is forced at this session, when the members are thinking mainly of national politics and expending their energies in getting reelected, it is practically certain that only some ill-considered proposition like the Anderson or Bourne bills may be adopted—toy schemes which utterly ignore all the essentials of a working system.

"So-called parcels-post bills have been introduced by the score, fixing rates of eight or twelve cents a pound; that is, \$160.00 to \$240.00 a ton, when the average charge of the express companies for a ton of packages aggregates but \$31.20. The truth is that these bills do not represent any adequate consideration of the subject matter at all. Even the Anderson Bill restricted the mailing privilege to 'fourth-class matter,' when practically nothing produced on the farm comes within 'fourth-class matter.' The Bourne proposition utterly ignores giving the shipper the right to have his price collected on delivery, and makes the shipper prepay. This is ridiculous and unnecessary. It would kill the traffic or force it into the hands of the express companies, which do C. O. D. and collect transport charges from the consignee like the railways.

"Another defect of these bills, suicidal in character, is the limitation of weight to eleven pounds. In Belgium, Hungary, Austria and Germany the weight limit is above one hundred pounds; and there can be no sane objection to permitting the postal system here, as its facilities develop, to increase the limit to the same point. Take condition 'f' again, the matter of railway pay for carrying the packages. In a country of long distances, like ours, nearly the whole rate must go to paying the railways. Accordingly the rate must be higher or lower as the railway pay is higher or lower. The express companies pay the railways seven cents for hauling a ton of their matter a mile, while a like ton of postal packages, as mail, pays, for the same service, [CONCLUDED ON PAGE 20]

It's No Dream

YOU find mighty few putridly rich farmers. When you do, they mostly aren't farmers; they're landlords, city farmers, or something else of a fancy character.

To deny that there is wide-spread need, east, south and in the transmissouri west, for better banking and credit systems in the farmer's behalf, is about as sensible as to deny a locomotive that butts you and your cart off the track.

A Change of Scene

How It Was Managed Without a Railroad Journey

By Mrs. J. C. Coon

THE little dark bedroom where Rose Harvey lay was suffocating. Tom had tacked a blanket over the west window in order to shut out the sun's fierce rays, but it also shut out every particle of fresh air. The doctor looked grave as he fanned the tired face on the pillow with a folded newspaper. After a few minutes he handed the newspaper to Della, motioning her to take his place, and left the room, anxiously followed by Tom.

"Something must be done, and at once," he said to Tom. "Your wife must have a change. I hardly see what you can do, unless you can take her over to Fairview to the Sanatorium."

Tom could only look up, helplessly.

"Or, if not that, then a good trained nurse might pull her through, though I admit I don't know where you

turned her face toward the screen of living green with the first interest and appreciation she had shown for many days. Tom sat down by her with the newspaper fan.

"The doctor spoke about a change for you, Rose. Do you think we could take you to the Fairview Sanatorium?"

She shook her head feebly.

"I don't want to go. I'd be worrying all the time about the children."

"But we must do something, dear. What about sending for your sister Olive?"

Mrs. Harvey shook her head again.

"Why not, Rose? I thought that would be just what you would like best of all things."

"There's no place for her to sleep save that hot little kitchen bedroom," she said, weakly. "You know, Tom, Olive isn't used to living as we do. I've looked forward all these years to inviting her to make us a visit, but we've never had things so she could be comfortable here." Tears came into Mrs. Harvey's eyes, and she turned her face to the pillow in an effort to hide them.

"Don't worry about it, Rose," Tom said, pleadingly. "Sometime I hope we'll have things in better shape; just now the question is to get you well and strong again."

There was quite a long silence, during which Tom was thinking deeply over the problem. Glancing down, he saw that his wife's eyes had closed in natural sleep, something unknown for several days. After fanning a few minutes longer, Tom tiptoed silently out and closed the door after him.

James was despatched to town to send a telegram to Hallie, Tom's sister, to come on the first train. Also James was to make several purchases—a new single bed, some canvas, mosquito-netting and, last but not least, some palm-leaf fans.

While he was gone, Tom looked over the ground adjacent to the house, returning often to the open window to peek through the tree's foliage and see that Rose still slept. By the time James returned, Tom had made a trip out to the foot of the orchard to see that the children were all right, and had also cleared of underbrush, weeds and sprouts a space twenty feet square under a great spreading maple that stood several rods east of the house.

The two men were very busy under this tree until Rose awoke, when Tom sat by her again, while James continued the work under his instructions.

Della came slowly toward the house when the distant whistles blew. The three children were happy and talkative. Tom intercepted them before they reached the house, and turned them back to the granary, where they had a supper of bread, milk and baker's cookies, all carried from the pantry by Della. It was not until Wilber, the baby, was asleep in Della's arms, and the other two were nodding, that Tom brought them into the house and got them quietly into their little beds for the night.

The doctor came back late in the evening, worried that he had been able to find no one to sit up through the night. His face, however, took on a more encouraging look as he felt Rose's pulse, and he nodded approvingly at the open window. Before he left, Tom took him out to inspect the work that had been going on under the big maple.

"The very thing. Get her out there the first thing in the morning. I believe you're going to pull her through yet, Tom, even without a nurse."

Tom kept his lonely vigil throughout the night, giving the medicine hourly and soothing Rose after her wild dreams. The fever ran a little less high than the night before.

In the morning James put some finishing touches to the work under the maple-tree, while Tom cared for Rose and Della prepared a meager breakfast. Della was a fourteen-year-old village girl whom the doctor had brought out to help through the emergency.

"Rose," Tom said, after the children had eaten breakfast and again been sent to the orchard to play, "you know your favorite maple out there, where you said you would so like to have a summer house?"

"Yes," Rose said, without interest.

"We've fixed you up a sort of summer house now, and I want to take you out there. I think it will help you to get well."

"Oh, Tom!" Rose's eyes were grateful, and her lips quivered. "But how can I get out there? I can't walk."

"I'm going to lift you on the cot, dear, and then James and I will carry you. It will be no trouble to get you there, or to bring you back, either, if you don't happen to like it."

The cot was quickly arranged, and Rose was carefully lifted to it. Then she was slowly carried into the great outdoors that looked so glorious that July morning. Past the rows of old-fashioned shrubbery, through the grape-arbor and under the cherry-trees the little procession went; then through a screen door into what seemed a roomy bower of evergreens.

"Oh, Tom, it's too good to be true," Rose said, gazing about her, and then letting her eyes rest on Tom's face to be assured she was not dreaming.

"I guess not," Tom said, as he lifted her to a new single bed that stood in the middle of the bower-like room.

"I'll be an ungrateful wretch if I don't get well now," Rose said, half laughing, half crying; "tell me when you fixed all this for me."

"Why, James did most of it yesterday afternoon. It's only a roof of canvas stretched over a ridgepole and a few branches of evergreen put on the underside to make it look better. Then you see we left the sides high to let in plenty of air, and screened in ends and sides with mosquito-netting."

"Oh, it's so restful, Tom. I believe I'll just sleep all day out here, and to-morrow be well and strong again."

"I hope you will. I've got some more ideas in my head, and I hope by to-morrow you'll be able to help me get them into practical shape. So just rest now and be good."

Rose lay very still, feasting her eyes on the refreshing green and drawing in deep respirations of the pure air. The world had grown beautiful and enticing all at once. Yesterday it had all seemed so dreary, and she had thought that were it not for the children she would be so glad to die. She did not think Tom would care very much. But now she knew that Tom would care; and this thought, even more than the pretty bower and cooling breeze, was giving Rose a new and stronger hold on life.

The morning train brought Hallie, and she very soon gave a touch of order and cleanliness to the neglected little house. Tom busied himself within call of the "Sanatorium," as Rose had named her tent, and was glad to see his wife improving and again enjoying natural sleep.

In the afternoon Rose called Tom to her bedside. She had been thinking of what he had said about his plans.

"I'm so much better, Tom; tell me about the plans you spoke of this morning, won't you?"

"Oh, it was about the house; I'm going to fix it up and make it comfortable, at least, as you've wanted to all along. I've concluded it's a mighty foolish thing to get along with such little hot closets for bedrooms, in hopes of building something after a while that will make all the neighbors stare. I have decided to make several changes now."

The planning took some time, for it necessitated much drawing, erasing and figuring on Tom's part, but it was enjoyable work. It included a small new kitchen, in order to leave the room that had served both as kitchen and dining-room for the latter purpose only. Also, it included the cutting of an outside door in each of the tiny down-stair bedrooms, as a door gives a larger opening for ventilation in summer, and in winter, when closed, lets in less cold than a window. Rose also suggested having a large eight-foot doorway cut between the front bedroom and the living-room, the opening to be hung with plain curtains.

Cheap awnings were planned for the west windows of the bedrooms. The awnings would shade their sleeping-rooms from the hot rays of the afternoon sun and assure them of a more comfortable and pleasant place to rest after their hard day's toil.

For the low, long chamber up-stairs, which was a veritable oven in summer-time, it was decided to cut a hole for ventilation in the middle of the ceiling; then, high up in each gable end, to take out the clapboards, and fill in the space with slats instead, slanted so they would turn the rain. This would create a draft through that dark, cobwebby space between ceiling and shingles, which becomes so charged with hot air.

A small porch at both front and back doors, good screens for the windows and doors, and a coat of paint completed the list, and Rose looked over it with a happier light in her eyes than Tom had seen there for many days.

"I didn't realize how much you cared about these things, Rose. I've had all my plans on the crops and the stock, and never thought much about the house. It's the way with men I guess, but it's downright selfishness. Just as soon as you are able to stand the noise of hammering, we'll begin work on the house."

"Tom, I believe that kind of hammering will be a regular lullaby and will help me to get well."



"'You get the children and take them down to that big shade-tree at the foot of the orchard'"

could get one at once. She must have someone to care for her, at once. Haven't you some relative that knows how to nurse?"

Tom shook his head.

"Something must be done if we save her. I'll be back this evening, and if possible, bring someone to help you through the night. In the meantime have the girl keep the children quiet, or take them away to the neighbors, and you must get the temperature of that room lowered; as it is, the heat is enough to make a well person sick."

The doctor hurried out to his buggy, and Tom called Della from the bedside where she was faithfully fanning Mrs. Harvey.

"I'll fan her now, Della; you get the children, and take them down to that big shade-tree at the foot of the orchard. From there you can call James, and tell him to come to the house at once. You can stay out there with the children till the town whistles blow; build a playhouse for them, and keep them quiet and away from the house."

Tom did some thinking as he stood by the bedside fanning, after Della had gone; also he indulged in some severe self-censure. He had never meant to make a drudge of his wife, nor to condemn her to such a bare, unsatisfying existence. But there had seemed no help for it. Times had been hard for both of them, and each baby had added to the toil for the frail mother. Now she lay so weak and helpless that Tom's face paled as he thought of the possible consequences. He had resolved to do his best to help Rose in any way possible.

The doctor had said "lower the temperature of the room." Tom looked about, and finding a large white handkerchief, he sprinkled it copiously from the water-pitcher, then folded it and laid it on Rose's hot forehead. Next he sprinkled the blanket that hung before the window, and then, dampening still another cloth, he began to drive the flies from the room.

Hearing James, the hired man, enter the kitchen, Tom went out to him.

"James, I want you to knock off hoeing this afternoon and help me get things more comfortable for my wife. First, we've got to shade that west window. Take an ax, and go and cut down one of those small scrub trees in the wood-lot, one with a thick, leafy top and tall enough to reach to the top of the window. We'll just fasten it up outside like a Christmas tree, and get a fresh one every day if necessary. Be careful not to make any more noise than possible when you bring it around."

Tom returned to his wife's room, where he quietly renewed his efforts to reduce the high temperature. In fifteen minutes James was back from the wood-lot with a dense little tree over his shoulder, and five minutes more sufficed to set it upright before the window, a length of wire holding it in place. Tom took the blanket down and, as quietly as possible, took out both sashes of the window, they being the old-fashioned kind, without weights. The fresh air that suddenly flooded the room was so refreshing that Mrs. Harvey



"'Go and cut down one of those small scrub trees in the wood-lot'"

About Mailing Letters

By Hilda Richmond

THOUGHTFUL people everywhere deplore the fact that so many "frills" are included in the present educational systems, and that children are overloaded with a multiplicity of things, instead of a few essentials, but one thing among the educational frills deserves favorable mention. They are teaching the boys and girls not only how to write letters, but how to mail them as well, and surely this is a commendable move. Only about one out of a hundred boys and girls may need a knowledge of basket-making or clay-working, as taught in the schools, but every single one will be vitally concerned with letter-writing sooner or later. Many a business man who has made hundreds of thousands of dollars, would part with a good share of his wealth to be able to construct a good letter. A carefully addressed, substantial-looking letter bespeaks a careful, sensible person, and shows the receiver that time and consideration were given to the missive.

First of all, have a clean, substantial envelope strong enough to travel across the country without bursting, as the cheap ones do, and have it of the regulation size. All well-bred persons conform to custom, even in letter-writing, and very large, very small, very long or very short envelopes find no favor with them. The regulation sizes issued by the government are the sizes most easily handled in offices and on trains, as the tiny envelopes are apt to slip out of the packages, and the long ones must be doubled over, unless they are the regulation long or legal size, which is usually tied in a packet with others of the same size. Colored note-paper is not considered good form, and postal clerks everywhere wish that people would use the stylish white, as colored papers with pale inks are hard on their eyes. If all letter-writers could remember that much of the mail must be sorted and tied in a rapidly moving train by a dim light, or by hurried clerks in offices, they would surely have more consideration, and not send out such monstrosities as they do.

Having secured a good envelope, write your own name and address on it first in black ink on the upper left-hand corner, if you have not your own printed envelopes. It is a good thing to have the name and address neatly printed on all envelopes, but if this is not done, it can be written there. This insures return to you in case it is not delivered, and also helps correct errors. Many an error that might have cost thousands of dollars has been quickly and easily corrected, because the return address was given, where if it were absent the letter would have had a long and tedious journey through the Dead Letter Office if it ever returned to the writer. Next write the name and address of the person who is to receive it, taking care to add the whole address. Because your friend is prominent in the community, do not omit the street or route or box. A new clerk or carrier may be on the day it arrives, and he may not know where to take it if insufficiently addressed. It only takes a minute longer to make it complete and show that you believe in aiding the postal clerks and carriers all you can, but it may mean much to you to leave it off. Where there are two or more persons of the same name, the letters are often several weeks old before they get to the right person, as many patrons have the bad habit of not returning mail promptly that does not belong to them. It isn't pleasant to have a letter containing private news peddled all over the country before it reaches the right person, but when this happens, it isn't the fault of the postmaster. He simply guesses which one shall receive it first, and sees that it makes the rounds.

And above all things never put glass articles or money in letters, or anything else that is unmailable. Of course, money is not unmailable, but it surely ought not to be in common envelopes with no safeguard. You cannot tell how soon you may be tempting some clerk to become a thief by carelessly thrusting a bill into a thin envelope. With post-office money-orders to be had for a few cents, and registered mail to reach the little places where orders cannot be cashed, there is no excuse for putting money in letters.

Lastly, put your stamp in the proper place, the upper right-hand corner, for many of the offices now have canceling machines, and the stamp in the wrong place means delay and extra work. The machine cannot bound out of place to strike a stamp put on carelessly in the wrong corner, so it must be sorted out and done by hand. And even in offices where every stamp is marked by hand it means extra work to put the stamp on wrong. Usually such mistakes are credited to young and foolish girls, but I have seen business men who would not conform to the rule of putting them on right. Such carelessness is nothing but selfishness.

Somebody is sure to say these are only trifles, but trifles make perfection, and perfection is no trifle, as a man once said.

Sunday Reading

WHEN I asked the one who was my bride eight years ago what she thought should be said on this subject, she answered, "Don't tell just the old familiar things that people have heard so often, but suggest some fresh ideas."

So there I have my program pretty well mapped out. I know what I must leave out, and as to what I must put in, well, that is not so easy, but perhaps the best way to bring people fresh ideas is to look at some of the old, deep, sacred truths from one's own viewpoint, and then write the impressions as simply and straightforwardly as possible. It is worth trying, at any rate.

Now the moment you think of roses by themselves, how many different kinds appear to your inward vision! It would take a very large garden to give room for all the varieties. The florist's catalogue gives column after column of their names and descriptions. And if you have studied such lists yourself, have you not noticed how each variety has some special charm of its own, so that you find it hard to decide which ones to choose if you are planning a rose-bed for your own home?

June brides are much like June roses in this regard. No two of them are the same in appearance, temperament or character. Yet all are brides, and each is the most beautiful and adorable to the one who has chosen her as his ideal and won her consent to "share his sorrows and double his joys" on the life journey.

Knowing this, we cannot feel much sympathy for the young man who complains that he is unable to make any choice, and so lets the precious months and years slip by while he still balances and hesitates and postpones what might be a glad life for a sweet girl and himself together.

What should we think, for example, of someone who said he had hoped to have a splendid crown of roses in the midst of his garden, but that he had found it so difficult to make any choice among so many attractive varieties that he had decided to do without their brightness and fragrance entirely? We might pity him for so weakly resigning his purpose, but we could scarcely sympathize, and for us his plot would always lack what should have been its chief charm. And so I think we should feel toward the man who let his opportunities for the dearest joys of life slip through his fingers, just because he could not, as it were, bring his decision "to a focus."

Here we come upon a difference between the roses and the brides of June, and that is, in their abundance. We have to acknowledge that there are not enough brides in June or in any other month, either. Frankly facing this fact, let us see if we can find any reasons for it or suggest a remedy.

It ought to be laid to heart by all thoughtful members of the community that any young woman who has the ability and willingness (and we venture to claim that few have *not*) to become a wife, should fail of the opportunity for this fulfilment of her life. But how many there are who now endure just this deprivation! Let any reader of these words think for a minute of his or her own acquaintance and townfolk, and undoubtedly there will occur to mind numerous instances of the sort. Truly, these things ought not so to be!

The reason? More than one, doubtless, there is. Low wages, for example, all too frequently constitute one of the chief obstacles to what would otherwise be an eagerly made offer of marriage on the part of a

young man. The fall of wages to the point at which only a *single* man can support himself, and that scarcely with proper comfort and self-respect, is an undeniable and most harmful condition in many American cities and towns to-day. The result is a compulsory self-denial of marriage for too many young men and women, who under sane and equitable conditions, where the race for wealth for a few did not tend to reduce wages to a competitive "starvation point," would at the normal age make one another happy, and bless and benefit the whole community as well, by unions of true love. We must never let ourselves get accustomed to such a wrong as this, but strive by whatever influence we can exert to call a halt upon such inhumanity that is against both private and public good.

But this is not the only reason why June brides are fewer than June roses. It is easy for some young men, who by more vigorous and intelligent exertion could surpass their present earning capacity, to lay the blame for their own half-hearted achievement on "society" and give as their whole excuse for not marrying some cause outside of themselves.

What these laggards need is a new vision of their own half-wasted powers and the resolution to prove themselves men enough, in the face of discouragement and even rebuffs, to win and hold a place which they may be honorably proud to ask a gentle, brave and affectionate girl to share with them.

On the other hand, there are young men and women who from an ideal of service and self-denial become convinced that by remaining single they can be of the greatest use to their fellows. Concerning this generous and heroic, though usually mistaken, purpose, I should like to repeat here the advice given by a New York City clergyman of influence to a young man who felt that his own work would be more effective if he remained unmarried.

"If it is really the most unselfish life you are seeking," he said, "you will certainly choose the married rather than the single. The discipline, self-denial and consecration required of those who meet the calls and obligations of a true marriage are all greater and deeper-going than in the 'celibate life.' If you want a balanced and informed opinion as to this, do not go to one who has known *only* the married life, or to one who has known *only* the single. It so happens that I have known the first, and for many years the second, as well, and I assure you from my own experience that there is no real comparison between the two for actual self-abnegation.

"I truly believe that every man who is strong and of a clean life, owes a deep obligation to make some woman happy with his devotion. You must remember that a woman has more pain and sorrow to bear than a man; she needs the gladness that pure love brings her, and it is a high privilege and duty that a man has, to be the means of making this her possession."

"Ah," someone may answer, "it is not often that such ideals as these are held or imparted to others; ordinary living is on a lower plane." And yet this minister was not proposing an impossible standard or a dream-world life for either husband or wife. Why, then, cannot more of those who wish to bring the message of the June roses to another's heart, do this in the spirit of a true *ministry*, realizing day by day more deeply what a privilege it is to make even one other human life in this world happier than it would have been without that chivalrous love?

Mother's Helper

By Haryot Holt Dey

"I SCARCELY know how to get along," said the girl's mother, "since my little helper is married."

The remark was such a gracious eulogy that I can't help but say something about it. I suppose the thing we missed being—once when we had the chance—must always come back to us sooner or later, and so it is that now although the mirror reflects white hair, to remind me what a long time ago it was, the thought is present with me that I missed the principal issues when I was a girl at home.

But then no one ever told me what a grand thing it was to be at home with mother; no one ever told me what a splendid thing it was to be young; no one thought to tell me that I was the choicest blossom in the garden of the family; no one ever hinted what possibilities lay hidden in the fact that I was somebody's big sister. It seems strange to me now, as I look back, that I was so dull that I could discern none of these things.

My mother was a plain, undemonstrative woman who never praised her children. She feared that she might awaken vanity, and vanity is a flaw in character. Sometimes when I was dressed to go out, I would ask her if I looked well. I used to wish she would think I did, and say so; but she always said gravely that if I behaved as well as I looked that I would get along all right. I grew up with the idea that Mother didn't care a great deal about me. What a strange thought that was! As if a mother wouldn't care! As if all mothers didn't care!

I married to displease her. Still, I didn't think she cared a great deal. Afterward I heard that she cried every day for a long time. I even heard that she said all the sunshine had gone out of the house. Ah, to think that I was the sunshine, and didn't know it! Do you see how it is that I say I missed all the issues? Sometimes it comes back upon me with a great force when I look into the eyes of a girl who doesn't know her own value, who doesn't know that sweetness is strength; and I long to tell her. I know now that I was enshrined in my mother's heart, and that I was the keenest disappointment of her life. Think of it! Do you wonder that I say I missed all the issues?

I believe the truth came upon me most forcibly last summer when I was visiting some friends in the country. There was a daughter of the house name Lillie. She was a frail girl, and seemed not able to do a great deal of work, and yet everyone in the family depended upon her.

Lillie was what I called a thought girl. She never seemed to be in a hurry, and yet she was never late in finishing whatever she had in hand. The little brothers, who seemed to be her particular care, were always ready for church in speckless attire long before it was time to go; the portions of work which fell to Lillie's share were always done in season, so as not to interfere with the system. One day I asked Lillie how she managed to do so much work so quietly and so well. She said she sat down and thought it all out before she began it.

However, there were a good many things which Lillie did not think out first, only as she kept the loving thought in her mind. For example, if a little brother had the toothache in the night, it was Lillie who gathered him up in her arms and took him into her own bed and comforted him until he fell asleep with the aching face soothed by her warm arm. When Father cut his hand out in the field, it was Lillie who knew just where to put her hand on soft linen with which to bandage it. When Mother was not very well, it was Lillie who knew how to cook the dinner, and was relied upon to do it. Lillie knew how to coax little brothers to do things for her, and, as many hands make light work, it seemed to me sometimes as if a domestic fairy was back of all the results. Lillie was Mother's helper. When I looked into her young, flower-like face, delicate as a wild rose, again I knew what I had missed in my youth.

My mother had many little children younger than I, and it was always my impression that she loved to stay at home from one year's end to another to take care of them. I had to have children of my own to convince me of my mistake. In the years that have come to me heavily freighted with experience to waken me, I have sometimes wondered whether I ever asked her if she were not tired. I have wondered that I did not even once say to her: "Let me take the baby into my room to-night, and you go to bed and sleep all night long." She was a very kind, unselfish mother. But she should have told me, tried to wake me up, and not allow me to miss all the issues.

I was just an every-day kind of a selfish girl. No arraignment of myself could be too severe. As I said before, the reflection in my mirror shows whitened hair and a few furrows well plowed into my face, and my eyes look sadly into the reflected eyes in the looking-glass when I think of what I missed, not being Mother's helper.

A Linen Bridal Shower

By Mary Eleanor Kramer



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Ethel Jones
Inglenook Farm
June 10, 19--

The outside cover-page

farm-home one of the great her city home contained all the luxuries wealth and position could procure.

Mrs. Preston wrote her niece, asking for the pleasure of entertaining her and her girl friends at a linen shower, some time during the early part of June, the date to be fixed later.

Then she set about her preparations for the affair, which included frequent excursions to a little brook, flowing through a part of her land, on the banks of which flourished a half-dozen gnarled wild crabapple-trees, which were to play no small part in the coming festivities.

Finally the invitations were issued for June 10th, the only departure from the usual form being a simple announcement that the color-scheme would be pink and white. The hour was set for 2:00 P. M., as the trolley made its schedule trip past her door at 1:45 each afternoon.

The day was bright and sunny, and not too warm. The bevy of girls (twenty-four in number) were met at the entrance to the grounds by their hostess, who led them up the grassy path and into the old farmhouse.

The dainty pink and white packages, with which each guest was laden, were left in the reception-room as the guests ascended the stairs to the chamber overhead to remove their wraps.

Meanwhile, below stairs, two deft-fingered maids collected the packages, fastened a broad white tape securely around each and carried them out to the rear lawn, where a clothes-line had been stretched between two trees; to this they fastened them by means of safety-pins passed through the overlapping tape.

Near by the clothes-line six small tables had been arranged under the shady boughs of an enormous elm-tree. The tables were covered with spotless white, and in the center of each was a glass bowl, filled to overflowing with the fragrant pink blossoms of the wild crabapple, the bowls being so arranged as to appear to be spilling their fragrant beauty over the snowy cloth beneath them.

As Mrs. Preston marshaled her guests out at the rear hall-entrance, they greeted the scene before them with cries of surprised rapture. Each guest found her appointed place by means of a place-card. These cards were an achievement within themselves, being designed and executed by the clever hostess. They were made of a fold of ivory-white cardboard, just heavy enough to admit of their standing upright when partially opened. The lettering was in palest pink, the right shade having been acquired by the use of a tube of rose-madder paint, thinned with turpentine to the consistency of a writing-fluid. The outside cover-page bore in its center the name of the guest, directly beneath which were the words "Inglenook Farm," and beneath that the date, June 10, 19--.

On the second page appeared a dainty pen-and-ink sketch of a Puritan maid seated at a spinning-wheel, the maid being executed in palest pink, the wheel in deeper rose. On the third page was written, in a neat and attractive manner, a little couplet in rhyme, especially fitting to each particular guest, that of the bride containing the following lines:

Oh, maiden of the tender heart,
For whom this day is set apart,
May none of Life's tempestuous hours
Be darker than thy bridal showers.

WHEN Mrs. Preston received a letter from her favorite niece, Louise, announcing her engagement to a young farmer, she immediately set about planning some little social event in honor of the occasion.

Mrs. Preston was not rich in worldly goods, her home being on a small farm adjacent to and in easy reach of the city, through the medium of the electric trolley, which passed her door at regular intervals. But she possessed wits and ingenuity, and this, combined with a most lovable, gracious character, made a visit to her

delights of Louise's life, although the luxuries wealth and position could procure. Mrs. Preston wrote her niece, asking for the pleasure of entertaining her and her girl friends at a linen shower, some time during the early part of June, the date to be fixed later.

The Women's Titanic Memorial

SOMETIMES I'm glad I'm a woman! At other times I'm proud of it! But when I think of the Titanic, I'm grateful, oh, so grateful, to those men who paid the price of each woman's safety in the lifeboats by giving up their own hopes of deliverance that the women might have first place.

They tell us that chivalry is dead, that gallantry and the hoopskirt went out of fashion in the same year. But the story of the Titanic's sinking and the cry of "Women and Children First" disproves all that. Surely, as women, we are in duty bound to show our gratitude.

When I heard that some women in Washington are intending to build an arch in memory of the men who died just as truly for me as for any other woman, I just had to tell you women readers of FARM AND FIRESIDE about it, and ask you to join me in helping this cause.

Only one dollar is asked from each grateful woman. Mrs. Taft gave the first dollar. The movement is in the hands of such people as Mrs. John Hay, Mrs. John Hays Hammond, Edward J. Stellwagen and George X. McLanahan.

If you feel, as do I, that the saving of the women, because they were women, is as much my affair as though I personally had been taken aboard the Carpathia, a survivor of the dreadful catastrophe; if you feel, as do I, that some recognition of the greatest service one human being can offer another is due those brave and gallant gentlemen, gentlemen in the true sense of the word, who went down, that women and children might live, then I know you'll want to send a dollar, along with mine, to be used for the Women's Titanic Memorial in Washington.

If you care to do this, you can send the money to me, and I will be glad to forward it to Washington, along with my own contribution, as a token of gratitude from the women readers of FARM AND FIRESIDE.

After all, isn't it a small thing to do in honor of men who died that women, poor and rich, foreign and home-born, might live, they and their children?

The refreshments were simple, yet substantial enough to allay the hunger arising from the long ride from the city. The color-scheme was carried out in the refreshments.

The first course was ham sandwiches, and olives stuffed with pimentoes; the sandwiches were made by cutting sandwich-bread into thin slices, a cake-cutter then being used to cut the bread into heart shape. On the bread was spread a thin layer of salad-dressing, on this was placed a crisp lettuce-leaf fresh from the farm garden, then a layer of ham cut in the thinnest possible slices, its pink edges just protruding beyond the upper bread slice.

Next came a chicken salad, served on lettuce-leaves, with a heaping teaspoonful of mayonnaise surmounting each helping. With the salad came fresh beaten biscuits, made earlier in the day by the hostess.

The third course was strawberries served with fresh country cream whipped to a froth. The little cakes accompanying the fruit were heart-shaped and covered with white and pink icing.

Tiny cups of fragrant coffee concluded the luncheon. At the close of the luncheon the hostess announced that the future housewife would now gather in her linen. A splint clothes-basket was handed Louise, and she took the packages from the line. The basket was carried to the hostess' table, now cleared of everything except the flowers; here the packages were unwrapped amid the exclamations of admiration from the girls.

A walk to the brook and a raid on the old crabapple-trees completed the afternoon; and, as the guests bade the hostess



Sketch of Puritan maid

a fond farewell, each bore away not only an armful of fragrant blossoms, but an added page to her Book of Memory, to which her thoughts would ever revert at the faintest suggestion of the odor of crabapple-blossoms.

Miss Farmer

THE country girl's the girl for me—I married one! She is the genuine American girl; she typifies feminine America.

"This with no lack of appreciation for other kinds of American girls—factory girls, cheerful and pretty; office girls, sweet and neat; rich girls, charming and nobby; suffragette girls, serious and prim; high-brow girls, wise and whole-

some; fun-loving girls—but the farmer girl, 'Miss Farmer,' is the girl to which we must look for mothers of typical American men.

"And since there are so many Miss Farmers, we need not grow discouraged about this country."

Thus talked a foreign-born American citizen who has traveled a great deal in this and other countries.

My foreign-born friend, in the language of the street, "has the right dope." There are facts and facts to prove that he is correct. Abraham Lincoln's mother, Horace Greeley's mother, Grant's mother—all girls born in the pure air of rural districts, where they saw the sun through an atmosphere unsoiled and unspoiled by factory smoke, or cheap, expensive polish, or society fads; where no monkey dinners were given, and Mother was the teacher of ethics and morals.

And why shouldn't it be so, pray? Doesn't the country girl see the world as God made it—the natural world? She sees real grass, can watch it grow. She observes that rain is a blessing, and not a curse, as it must appear to city girls who read in rain dirty streets, postponed pleasure trips or ruined pretty dresses.

Country boys may not be any better nor purer than city boys, but they are more primitive—and primitive things do seem to stand the test of time and temptation with more success than artificially polished things. Country boys think—oh, it's easier to think while following a plow in a quiet field than while walking down bustling, noisy, crazy Broadway!—and after thinking hard enough, they are the boys who "shine up" to Miss Farmer.

Miss Farmer has a stronger body than Miss City; and since the telephone reaches her and the R. F. D. brings the newspapers and magazines daily, she has every opportunity to keep her mind in prime condition. G. HENRY.



The packages were unwrapped amid the exclamations

A Variety of New Fashions

Just the Right Clothes for Warm Summer Days

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Drawings by
Miss Savage
Patterns, 10 Cents



No. 1985—Slip-Over Blouse with Sailor Collar

Pattern cut for 32, 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36-inch bust, two yards of thirty-six-inch material, with three fourths of a yard of contrasting material for collar and cuffs. The price of this pattern is ten cents



No. 2022—Play Hat with Buttoned-on Crown

Pattern cut for 2, 4 and 6 year sizes. Quantity of material required, three fourths of a yard of twenty-seven-inch material. This little hat is especially attractive when made of white pique with scallops embroidered in white, while for everyday wear it is also pretty in color. One special advantage of this very smart-looking play hat for a little girl is that the hat can be so easily washed and ironed. The crown buttons on to the brim, so that it can be quickly taken off and washed, and then laid out flat to iron. Price of this pattern, ten cents



No. 2040—Peplum Blouse with Large Armholes

Cut for 32, 34, 36, 38, 40 and 42 inch bust. Quantity of material required for medium size, or 36-inch bust, for the blouse: one and seven-eighths yards of twenty-four-inch material, with one and one-fourth yards of thirty-six-inch material for the guimpe. Pattern, ten cents



No. 1825

No. 1825—Girl's Yoke Dress

Pattern cut for 4, 6, 8, 10 and 12 year sizes. Material required for 8 years, two and three-fourths yards of thirty-six-inch material, with one fourth of a yard of embroidery for yoke and arm-bands. Price of this pattern, ten cents



No. 1814

No. 1814—Box-Plaited Dress, Double-Breasted

Pattern cut for 4, 6, 8, 10 and 12 year sizes. Quantity of material required for medium size, or 8 years, six yards of twenty-four-inch material, or three and seven-eighths yards of thirty-six-inch material. Price of pattern, ten cents



No. 2011
No. 2012

No. 2011—Tailored Waist Buttoned in Front

Pattern cut for 32, 34, 36, 38, 40, 42 and 44 inch bust measures. Material for 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or two and one-eighth yards of thirty-six-inch material. The price of this pattern is ten cents

No. 2012—Three-Piece Skirt Buttoned in Front

Pattern cut for 22, 24, 26, 28, 30, 32 and 34 inch waist measures. Length of skirt, 40 inches. Material required for medium size, or 26-inch waist, four yards of twenty-seven-inch material, or three yards of thirty-six-inch material. The price of this pattern is ten cents

No. 2031—Three-Piece Skirt with Flounce

Pattern cut for 22, 24, 26, 28 and 30 inch waist measures. Material required for medium size, or 26-inch waist, four and three-fourths yards of twenty-two-inch material, or three yards of thirty-six-inch material. Price of pattern, 10 cents



No. 2011
No. 2012



No. 2031



No. 2031



No. 1990—Misses' Low-Neck Kimono Blouse

Cut for 12, 14, 16 and 18 year sizes. Material for 14 years, one and three-eighths yards of thirty-six-inch material, three and one-half yards of embroidery banding, four inches wide, and one-eighth yard of silk. The price of this pattern is ten cents



No. 1991—Misses' Three-Piece Skirt

Pattern cut for 12, 14, 16 and 18 year sizes. Quantity of material required for medium size, or 14 years, two and one-fourth yards of thirty-six-inch material, with two yards of embroidery banding. The price of this pattern is ten cents



No. 2007
No. 2008



No. 2007
No. 2008

No. 2007—Yoke Waist with Single Rever

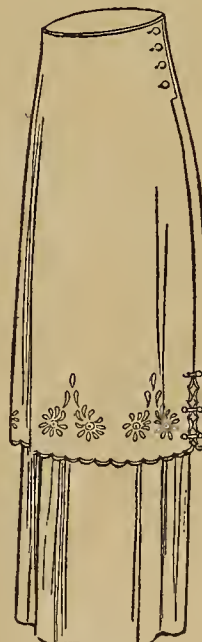
Cut for 32, 34, 36, 38, 40 and 42 inch bust. Material for 36-inch bust, two and three-fourths yards of twenty-two-inch material, or one and five-eighths yards of thirty-six-inch material, with two yards of lace and one yard of contrasting material. Price of pattern, ten cents

No. 2008—Skirt with Side Tunic

Pattern cut for 22, 24, 26, 28, 30 and 32 inch waist measures. Length of skirt, 41 inches. Material for medium size, or 26-inch waist, nine yards of twenty-two-inch material, or five and three-fourths yards of thirty-six-inch material. The price of this pattern is ten cents



No. 2030



No. 2030

No. 2030—Skirt with Tunic Buttoned at Sides

Pattern cut for 22, 24, 26, 28 and 30 inch waist measures. Quantity of material required for medium size, or 26-inch waist, eight and one-eighth yards of twenty-two-inch material, or four and seven-eighths yards of thirty-six-inch material. Price of pattern, ten cents

FOR every attractive design illustrated on this page, a pattern may be purchased for ten cents. Be sure to send your order to the nearest of the three following pattern depots: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, 1538 California Street, Denver, Colorado.



OUR YOUNG FOLKS' DEPARTMENT



A Joyous Fourth

By Virginia B. Jacobs

HE WHO wrote of the joys of anticipation must certainly have realized the great pleasure that all children have when preparing for a party or show.

Our little community had fifty children, ranging in age from five to fifteen years, and yet we determined last year to be "safe and sane" on the glorious Fourth. You know that implies that all must have a part in the preparations as well as a share in the final festivities, for July 4th is a long summer day, with possibilities for many kinds of activity. You and I also know that children's activity tends toward doing wrong things, if no right outlet for it be presented.

With this idea in mind, we planned that our celebration should be a somewhat continuous performance.

Here is our program for the day. Perhaps you will try it for your friends this year:

July Fourth

- 11 to 12—Garden Inspection
- 2 to 3—Porch Puzzles
- 3 to 4—Cracker Hunt
- 4—Band Parade
- 5 to 6—Flag Dance

Gun Drill

Patriotic Exercises at Noon and Sunset
"Inspection"

In May, packets of seeds were given to the children and prizes offered for the gardens showing the best arrangement of beds and for most flourishing crops, the inspection and award of prizes, for the best work done, to take place the morning of July 4th.

The forenoon was spent by most children in getting out the very last weeds, tying up trailing stems and removing every withered leaf. The gardens were beautiful! It was hard for the Inspection Committee to decide who should have the five prizes.

At noon we all went to the schoolhouse and sang patriotic songs, and listened to the reading of the Declaration of Independence. After more singing, we went home for dinner and to dress for the afternoon's celebration.

Porch Puzzles

At two o'clock the children met on a large porch which we had previously decorated gaily with flags and streamers of red, white and blue. At small tables they set to work to form the picture puzzles, each child choosing all the pieces of the same color from the group of colored bits before him. You will want to know how to make the puzzles.

From magazines cut pictures of famous Americans and historical scenes. Paste them on mounts of red, white or blue cardboard. Turn them over, and on the back of the cards draw zigzagging lines in all directions. When the pictures are quite dry and flat, cut them in pieces by following along the lines. Keep all the bits for each picture in a separate envelope.

When ready for the contest, mix to-

gether the pieces of three pictures, each one on a different colored mount.

This can be played as a progressive game if the winners at each table will move forward to the next table after each puzzle has been rightly pieced.

Then you can have lots of fun by getting up a firecracker hunt.

Many days beforehand, if some of the older children will work several hours, pounds of hard stick-candy may be transformed into harmless firecrackers by wrapping them in red tissue paper with bits of string attached for the fuses. Scattered around in various hidden nooks and secret spots in the yard and porch, it will take quite an hour to locate them. The girls' sewing club can make the little bags of red-and-white-striped muslin with bright blue strings. Each child keeps all the crackers he finds in his own bag until the final count is made. Then Sharp Eyes may share with his slower fellows, so that all can have candy to munch.

Band Parade

While the hunt was going on, strange sounds had come to our ears from the near-by barn. Then the doors opened, and out came our band, a number of the smaller boys drilled by a big brother.

Combs, pans, horns and anything that could make a noise were their instruments. White paper caps with cockades and pompons, and epaulettes and straps of red, white and blue tissue paper made their gay uniforms. Along the path they came to the martial noise from their pipes and drums. I am sure you will agree that we could not call it music. Up the street, and down the street, they paraded and pounded with a vigor unrivaled by any real band of grown-ups. The onlookers laughed themselves sore.

Flagpole Dance

Our Maypole had been brought out from the school cellar and stood on a large, open lawn. To make it higher, another pole had been spliced above it. At the very top was a curious bundle of red, white and blue, which everyone "guessed" was a flag. A hundred tiny flags had been wrapped in the large flag when it was rigged to the pole. While the children stood ready to salute, a string was pulled, and as the large flag fluttered proudly into proper position, the small ones flew gaily all about and were eagerly picked up by young and old.

Sixteen girls in liberty caps and sashes

of the tricolor gave many figures from the dances we had used at our May party. The streamers were of the national colors, and the effect was beautiful as they went weaving in and out around the pole, with the merry evolutions of the dancers.

Gun Drill

The boys' exhibition was a gun drill such as genuine soldiers practise in an armory. As the boys had all made their own wooden guns from old boards and pieces of packing-cases, you can well understand their pride in this military demonstration.

Six o'clock was the official supper hour. Baskets and boxes were brought out, and we sat under the trees for our picnic meal.

At sunset a bugle blast summoned us all together again. Around the flagpole we gathered. Another bugle call, and Old Glory dropped down from its airy position for the day! We sang again the national airs of our beloved country, and with happy thoughts we started homeward in the summer twilight.

Do you wonder that the boys and girls of our place want another such Fourth again this year?

Will not others be inspired by our enthusiastic celebration to join the movement to take from the day the dread possibilities of danger and disaster, and to fill it with merriment, and tasks well done, and cheery comradeship with their neighbors? For such are the beginnings of good citizenship!

Cousin Sally's Letter

DEAR COUSINS: Just imagine—commencements, class-days and Fourth of July, all to be talked about in the same letter! June's a busy month.

Of course, there are very few of our cousins who are graduating. I find most of our boys and girls are in school in the fifth to seventh grades. But we may look forward to our coming commencement days, even if they're not to be this June. And then, what are you going to be? Have you made up your minds?

Although I'm two weeks too early, I'm going to announce our July contest now. It's to be a letter telling me what you want to do when you're through school. Just pretend some fairy godmother came along and said:

"You can do anything you wish the day after you leave school." What would you do?

Tell me in as few words as possible! Be sure to put your full name and com-

plete address on the letter you send me. And then see the nice prizes I'm going to give for the ten best answers. The prizes are going to be "extra nice"!

As for July 4th! Well! Who has to talk to boys and girls about July 4th. They all know what to do. And they usually do it with a will. But I'm hoping you're going to find all the fun you need in a sane Fourth. Have you ever tried it? Suppose you do so this year! How surprised you'll be at the fun you can get out of other things than cannon and pistols and firecrackers. Try it this time, and tell me how you like it.

Affectionately yours,
COUSIN SALLY.

Can You Answer These?

How many years old is our country?

Where is the famous Liberty Bell?

Why is July 4th called "The Nation's Birthday"?

What city was the first capital of the United States?

For how many years did the Americans fight for independence?

See how many of your friends can answer these questions without referring to a history.

The Winning Letter

IN OUR last issue, the prize-winners of the February contest were announced. We promised then to publish the winning contribution. It is so good that we feel sure you will be delighted to read it.

FORGOTTEN

When I behold this mournful sight,
This creature stiff with cold,
With shelter none from wintry night,
With figure bent and old,

It makes me think how cruel the man
Within the house must be,
And that I must do all I can
To end such cruelty.

It makes me feel as though I should
Do something now, to-day;
So I have thought of what I could
Accomplish in this way.

This picture in my home I know
Could never profit me,
For please recall that long ago
I joined the C. S. C.

But in the ancient schoolhouse hall
'Twould cast a moral everywhere
Upon the children, each and all.
Yes, I would hang it there.

From your loving cousin,
FRANK C. HOUT, age 15,
R. F. D. No. 2, Middlebury, Indiana.

Don't you think that is an excellent piece of work?

The first prize, which went to Cousin Frank, was a beautifully framed picture of the forgotten horse. Of course, he will hang it in the schoolhouse, when he returns to his studies next fall.

Don't you think Cousin Frank should write us what his teacher thinks of the picture?

Some Interesting Facts About Fireworks

By J. A. Stewart

FIREWORKS have always played a conspicuous part in the world's famous events. There are national celebrations in many lands which must be observed fittingly, and rockets, bombs, set pieces, wheels and fancy demonstrations are the indispensable adjuncts on all the occasions.

The Chinese and Japanese are perhaps the largest consumers of fireworks. They utilize firecrackers, seldom setting off less than a whole string of them at one time. And they also buy large quantities of the various spectacular pieces, for use in holiday celebrations, the dedication of buildings and other ceremonies.

Not only public and national holidays, but also birthdays and saints' days are celebrated with fireworks in Mexico, where the use of all classes of fireworks is more general than in the United States. It is the practice in Acapulco to solicit public subscriptions for the celebrations of public holidays.

In Saltillo it is the holiday custom, especially on the eve of religious feast-days to explode a great number of home-made noise-making rockets, called "cohetes." These are made by enclosing the explosive in clay and attaching it to a small stick which serves as a handle to throw the rocket in the air. The use of primitive fireworks is common among the native Indians in Mexico as part of the

ceremonies at marriages, deaths and fiestas. On the day devoted to a popular saint among the Mexicans, all those who bear the saint's name begin and end the day with fireworks.

In Venezuela, also, large quantities of fireworks are used for celebrating the national holidays, church feast-days and the annual carnival. Fireworks are used extensively, too, in Peru, where they are sold almost exclusively by Chinese merchants, who get them from the homeland.

The Chinese are not only the great consumers, but also the great manufacturers of firecrackers. Practically all the firecrackers used in celebrations in all lands are made there. Nearly every coolie's home is a firecracker plant—a sweatshop. The hours of labor are from 6:00 A. M. to 11:00 P. M., and there are seven such working days a week—more than a hundred hours of toil.

It is piece-work, and much of it is done by women and children. Besides having long hours, the trade is very dangerous, unhealthy and poorly paid. Thirty men and ten women can make one hundred thousand firecrackers in a day, the men receiving seven cents and the women five cents each, for the seventeen-hour day's work.

Naturally, under these conditions, the American manufacturers cannot compete with the poor, patient Chinaman in get-

ting up the small firecracker. But the large firecracker, which has deservedly called down popular denunciation, is an American product. It is one of the results of the demand for novelty and more noise for Fourth of July celebration uses; and it reached the menacing size of thirteen inches. A firecracker of this size makes a report like a cannon, and if it were exploded in a house, would shake the building and break up the furniture in the room.

The sane and safe Fourth of July campaign is rapidly doing away with the dangerous fireworks. In many States, the laws forbid the manufacture of firecrackers more than six inches long, and the use of dynamite and picric acid is prohibited in the manufacture of fireworks, cartridges and toy-pistol caps.

The elimination of the dangerous products has happily made room for the exploitation of more safe manufactures, such as torpedoes and other fireless fireworks. Manufacturers have readjusted their factories to conform with the requirements, and it is authoritatively stated that they have suffered little or no financial loss as a result. The reported failures, when investigated, have been found to be due to other causes, and have proved to be a coincidence and not a result of the improved Fourth of July agitation. Most producers are only too willing that the

dangerous fireworks should be eliminated. They have turned their attention to making the large and beautiful display fireworks to be handled by experienced operators.

Practically all the imports of fireworks and firecrackers in the United States come from China. In 1909, the value of these reached \$358,106, which included 4,864,638 pounds of firecrackers valued at \$305,653. In 1910, the total value of imports decreased (by nearly \$100,000) to \$262,945.

The production of fireworks in the United States has reached tremendous proportions, employing an army of thirty thousand people. Yet the exports from this country are so small a quantity as not to demand notice in statistical reports. New York is the largest fireworks market in the United States. It is stated that three million dollars are annually expended there for fireworks, and that twelve million dollars are spent for pyrotechnical displays on the Fourth of July in the country at large. Take, in addition, the amount spent for fireworks at Christmas-time in the South, and the total is swelled to nothing less than fifteen million dollars a year.

The manufacturers in all parts of the world give the estimate of twenty-five million dollars as the total public investment in pyrotechnics for a single year around the globe.



Flagpole dance by sixteen girls

Get Rid of Them Now!

By Leo L. Redding

OUTDOOR LIFE
Will Not Offset the Ill Effects of Coffee and Tea When One Cannot Digest Them.

A farmer says:
"For ten years or more I suffered from dyspepsia and stomach trouble, caused by the use of coffee, (Tea contains *caffeine*, the same drug found in coffee) until I got so bad I had to give up coffee entirely and almost give up eating. There were times when I could eat only boiled milk and bread; and when I went to the field to work I had to take some bread and butter along to give me strength.

"I doctored steady and took almost everything I could get for my stomach in the way of medicine but if I got any better it only lasted a little while. I was almost a walking skeleton.

"One day I read an ad for Postum and told my wife I would try it, and as to the following facts I will make affidavit before any judge:

"I quit coffee entirely and used Postum in its place. I have regained my health entirely and can eat anything that is cooked to eat. I have increased in weight until now I weigh more than I ever did. I have not taken any medicine for my stomach since I began using Postum.

"My family would stick to coffee at first, but they saw the effects it had on me and when they were feeling bad they began to use Postum, one at a time, until now we all use Postum." Name given by Postum Co., Battle Creek, Mich.

Ten days' trial of Postum in place of coffee proves the truth, an easy and pleasant way.

Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

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

LOOK out for the fly—it's venomous. Scientists have been putting the ordinary house-fly under the microscope, and the revelations have startled even those who had previously suspected the insect's share in the spread of disease.

Cholera, typhoid fever, dysentery, tuberculosis, cholera infantum or "summer complaint," anthrax and some forms of parasitical worms, all are known to be carried by flies, either on the hairy legs and bodies of the insects or in their digestive apparatus, to be deposited on food or deposited in the "fly-specks," which it leaves behind like a poisoned trail.

Commonest of all diseases carried by the fly is typhoid. Whole epidemics of typhoid have been definitely traced to flies, and the name "typhoid fly" has been given to the insect by Dr. L. O. Howard, chief bacteriologist of the Department of Agriculture. Germs of all the diseases mentioned, sometimes as many as six millions or more on a single fly, have been found in the filth adhering to the sticky feet and bodies of the pests. And even if one is skeptical about the dangers of germ-borne diseases, a very brief study of the habits of the fly will make even the least squeamish person revolt at the thought of eating food over which a fly has walked. For the fly is not only hatched in filth—decaying animal refuse being the medium the mother fly selects in which to lay her eggs—but in its adult life it chooses filth by preference as its feeding-place and playground. Watch the flies in the kitchen. They will flock about the baking-pan or the pie-tins, but take the cover off the garbage-can and see them make a bee-line—or a fly-line—for it.

Up to ten years ago almost nothing was known of the house-fly and its habits. Since its danger has become recognized, the problem of how to keep flies out of the house has become a much more vital and serious one than it used to be. To be sure, a flyless house has been from time immemorial one of the tests of the careful housekeeper. But the old-fashioned housekeeper, who kept her windows tightly closed and the blinds drawn, in order that she might boast that there were no flies in her house, is as much out of place in these days of fresh air and sunshine and hygienic living as is the fly. So the problem that confronts the modern housewife is a much more complex one than her grandmother faced. Flies were dirty in grandmother's day, but that was all, so far as anyone knew. Many a well-meaning housekeeper preferred to clean up after the flies rather than to exclude the light and air. Now the laws of hygiene and right living demand the light and air and also the exclusion of the fly.



The foot

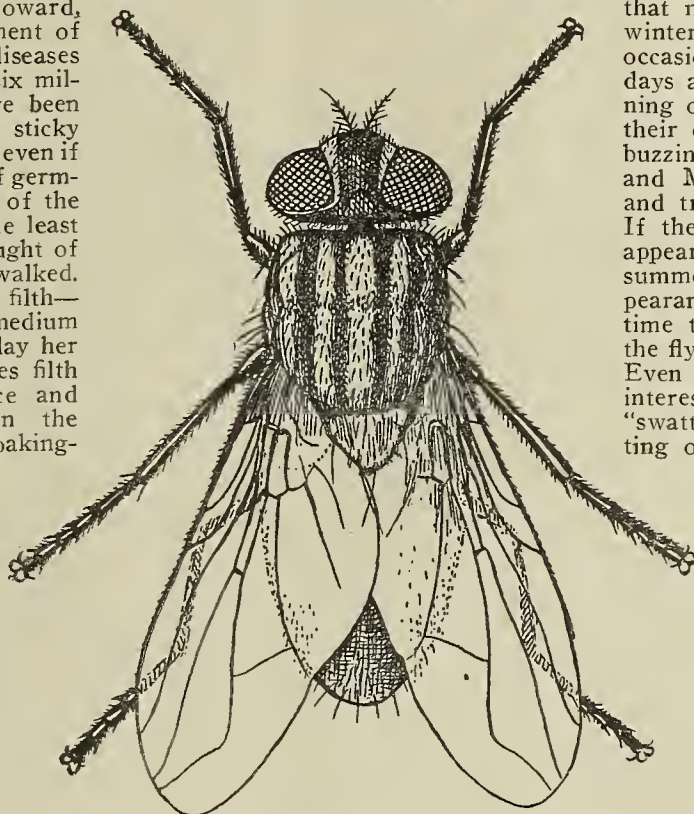
It is entirely possible to have both, although it must be admitted that success involves painstaking care and constant watchfulness. The fly is such a tiny thing that it not only is difficult to bar out, but it is hard to keep constantly in mind the idea of this trivial insect as an enemy to the human race. If flies were as big, even, as mice, the problem would have been solved long ago.

Fortunately, experiments which have been tried out on a large scale have demonstrated the complete possibility of preventing the fly from breeding. The simplest method, although in the long run the most expensive, is by cleaning up and disinfecting the breeding-places. Anything that will kill germs will kill flies if used freely enough. Commercial disinfectants are expensive, and to be effective against the fly must be used at from two to five times the strength recommended for ordinary disinfecting purposes. But ordinary kerosene, and, where they can be obtained, the cheaper emulsion oils of petroleum, if applied liberally to manure-piles, stable-floors and about outhouses generally, will kill the fly-eggs before they have had time to hatch, and keep the flies from laying any more eggs in these places. The drawback to the use of kerosene is, of course, the fire risk. An even cheaper and fully as effective disinfectant is pyroligneous acid, a by-product of the distillation of turpentine, which can be obtained from dealers in paints and oils at a cost, in New York or New Orleans, of from \$4 to \$4.50 a barrel. The simplest way of using this or other disinfectants is by means of an ordinary garden sprinkling-can. If there is a boy in the household, it is not difficult to impress him with a serious sense of responsibility for seeing that the disinfecting is done at frequent

intervals. It takes an average period of ten days from the depositing of the egg to the development of the mature fly, so that a weekly disinfection of every possible breeding-spot will suffice. The fly maggots, after hatching from the eggs, burrow into the ground, so after the manure-pile has been removed, the earth where it stood should also be disinfected.

More expensive in the beginning, but cheaper in the long run than disinfection, is the construction of tight floors of masonry or concrete in the stable, and tightly covered and screened bins for the stable refuse. A concrete floor, well washed down, offers no breeding-place.

Even after taking all possible precautions on one's own premises, flies may still come from the neighbors'. The



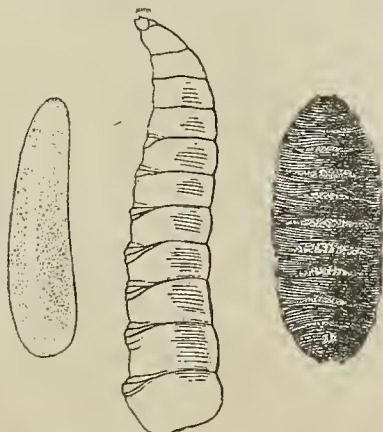
Wherever he is, kill him!

housekeeper who is willing to take simple precautions need never be bothered by these visitors, however. Unless driven by strong winds, flies seldom travel more than five hundred yards from where they were hatched. Practically all of the flies that can come from all the neighbors may be caught before they get into your house by the judicious use of traps. If you live in the country, don't throw the kitchen refuse out into the chicken-yard until after you have made it serve its purpose as fly-bait.

It was Dr. Clifton F. Hodge, professor of biology at Clark University, who originally worked out the plan of making the garbage-can into a fly-trap. A very simple little wire trap devised by Doctor Hodge can now be bought almost anywhere for twenty-five cents. This trap is easily attached to the cover of the garbage-can. One trap caught 2,500 flies in fifty-five minutes. Where flies were formerly almost an unendurable nuisance, Doctor Hodge found that a single trap, stationed outside the kitchen door, rendered his whole house flyless without a single screen at door or window.

A bit of bread soaked in sweetened water makes a good bait for fly-traps. So does condensed milk mixed with tomato ketchup. If the trap is plunged into boiling water, or boiling water is poured over it freely, it will kill not only the flies but most of the germs they may carry.

Sticky fly-paper is unsightly, but for use in the kitchen and dining-room it is preferable to poison, as poisoned flies often drop into the food. The essential thing is to keep the flies away from everything that is to go into anyone's mouth,



The egg, the larva and the puparium—the three forms the fly assumes before it takes on wings. All illustrations on this page greatly magnify the real objects

whether it be the food itself, the forks and spoons, or the baby's nursing-bottle.

The old-fashioned round or oval wire-screen covers for dishes, which most of us can remember seeing our mothers and grandmothers use on the table, may still be bought in many sizes if one does a little patient shopping for them. Since the realization of the fly's right to the title of "typhoid fly" began to become general, the use of these simple old-fashioned devices has been revived, although it is a pity they are still regarded as "unfashionable."

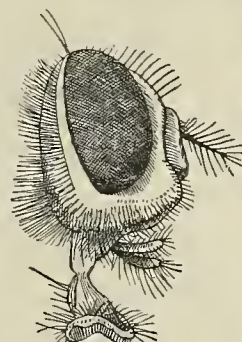
Most of the flies found in a house where reasonable precautions have been taken against their admission will be those left over from the previous season. The exact habits of the fly as to hibernating are not definitely known, but it is certain that many of them do live through the winter in cracks and niches, flying out occasionally on warm, sunshiny winter days and venturing forth with the beginning of spring in search of places to lay their eggs. These are the flies one sees buzzing about the window-panes in April and May, instinctively seeking the light and trying to get out into the sunshine. If these flies are killed as soon as they appear, a good beginning toward a flyless summer will have been made. The appearance of the first spring fly is a good time to begin teaching the baby to fear the fly as the baby chicken fears the hawk. Even the youngest toddler will take an interest in killing flies, and if a simple "swatter," made of a square of wire netting on the end of a stick, is provided,

the insects can be killed without being crushed against the wall, and the children readily become enthusiastic experts. To the argument that this teaches them cruelty to animals, the obvious answer is that it is better to kill all the flies than to run the risk of having one baby come down with typhoid because of the flies.

The importance of killing the first flies of summer is emphasized when one considers the rapidity with which the insects multiply. Each female fly lays about one hundred and twenty eggs four times each summer. From the

eggs fully matured flies emerge in ten days and begin at once to lay eggs in their turn. From a single fly twenty-four generations may descend in the period between frost and frost. Assuming that all the eggs hatched and that all the flies lived, the increase in a single summer would be almost beyond the power of the human mind to grasp. The figures reached by calculating the theoretically possible results run up well into the octillions. As a matter of actual fact and observation, allowing for the normal percentage of accidental causes operating to keep the fly in check, Dr. L. O. Howard, chief of the Bureau of Entomology of the United States Department of Agriculture, estimates the average annual progeny of a single pair of flies at about eight million. The moral of these figures is that the time to exterminate the fly successfully is in the beginning of the summer.

Poison traps in attics or parts of the house not continually occupied catch the flies that crawl out on warm days. Whole towns and cities have been made flyless through intelligent cooperative effort between the citizens and the authorities. Women have been among the most active and efficient leaders in some of the most successful anti-fly campaigns. The Women's Health League of North Carolina was an important factor in inspiring and carrying on a campaign that made Asheville the first flyless city in America. The stupendous task of ridding the city of Boston of flies, not only temporarily, but permanently, has been undertaken by the Women's Municipal League of that city. Women and women's organizations have proved efficient cooperators in the anti-fly campaigns of Baltimore, Washington, Minneapolis, Chicago and many smaller municipalities. Whenever the women of any community make up their minds it is time for the fly to go, they will find their health officers, their newspapers, their merchants and in most communities their churches ready and eager to help. And when the danger of the house-fly is made a part of the instruction given in every public school in America, the doom of the fly will have been sealed, for it is only tolerance, bred of ignorance, that permits the fly to exist.



The head

10 DAYS' FREE TRIAL
We ship on approval without a cent deposit, freight prepaid. **DON'T PAY A CENT** if you are not satisfied after using the bicycle 10 days.
DO NOT BUY a bicycle or a pair of tires from anyone at any price until you receive our latest art catalogs illustrating every kind of bicycle, and have learned our unheard of prices and marvelous new offers.
ONE CENT is all it will cost you to write a postal and everything will be sent you free postpaid by return mail. You will get much valuable information. Do not wait, write it now.
TIRES, Coaster-Brake rear wheels, lamps, sundries at half usual prices.
Mead Cycle Co., Dept. L-83, Chicago

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent prepaid for \$1.
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PATENTS Send sketch or model for **FREE SEARCH.** Books, Advice, Searches and Big List of Inventions Wanted **FREE.**
Watson E. Coleman, Patent Lawyer, Washington, D. C.

BOYS! GET THIS AIR-RIFLE For Doing a Favor

The King Air-Rifle is a repeater. It shoots 150 times without re-loading. It is strong, durable and shoots accurately. It cultivates trueness of sight and evenness of nerve.

These fine air-rifles are provided with pistol-grip, true sights, and are so strongly made that it is almost impossible for them to get out of order.

Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle. Get your subscriptions at once and send your order in early.

This rifle is harmless. It uses no powder—just air.

There is no smoke, no noise. Air is plentiful and shot costs but 10c for 1,000.

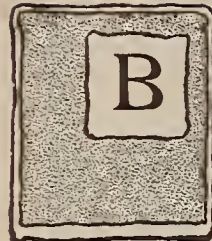
BOYS

Send a postal to **FARM AND FIRESIDE** to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.

Write to-day
Address
Farm and Fireside
Springfield, Ohio

The Best Way to Reduce Flesh

By Nannette Magruder Pratt



BLESSED be the thin, is a remark I often make. It is so much easier for thin people to get about; walk, climb stairs, run if necessary, do housework, etc. Too much flesh is a great misfortune. It comes so stealthily, as a thief in the night. No matter how fleshy a woman is, she can reduce her weight by diet and exercise. It is not safe to reduce flesh by medicine. During the past year I have heard of three deaths caused by anti-fat preparations. Most women hate to diet, but if one wishes to really take off a few pounds, she *must* give up fat-producing foods and eat just *half* the quantity she has been eating. One old philosopher said, and I take it as my motto: "I will eat simply, even abstemiously, so that my body may sit as lightly as possible about my soul." How many are willing to do it?

No one can be perfectly well who has an abnormally large abdomen. The men and women who cannot see their feet are in a most deplorable condition, and if your abdomen is so large that you cannot do the simple exercises I will describe, you are in danger. I have been very successful in helping women to get rid of their flesh, and I will tell you of a few things which you can do yourselves, to start the good work. After a while, as you see the great benefits, you will go right on and pretty soon you will be delighted with the change in your appearance. Remember, everything takes time. Rome was not built in a day. In one month's time you will begin to see good results, and in two, three, four, five and six months you can accomplish a great deal. It will take a very large person about a year to get down to correct proportions, but it is *worth* a year's work to have a good figure. I reduced my weight from one hundred and sixty-five pounds to one hundred and thirty-five pounds in three months, *but* I was in earnest.

Abdominal Breathing—Lie down on the floor, or on a very hard couch. There must be no yielding under the body. Take a deep breath through the nose, raising the abdomen as you do so. Then, still holding the breath, force the chest up, letting the abdomen down. Up with the abdomen again; up with the chest. Let the breath out through your nose while chest is raised. Practise that until you can do it five times without letting out your breath—abdomen and chest up alternately.

Run—Now for a run! You have learned to breathe and may begin to use the breathing in every exercise. Heels together, toes apart. (One must use very easy slippers in all these exercises.) Hands on hips. Take a deep breath. Now start on a run, but stand just where you are. Give a spring with knees bent, right foot out in front, left foot, right foot, left foot, right foot, left foot. Never let heels strike the floor. Hold breath while you count five. Then expel. In that way run up to twenty-five without stopping; then up to fifty and one hundred as you grow stronger. Of course, people with any organic trouble will not do this unless under the supervision of a physical-culture teacher, or doctor.

Stretching Exercise—Take a deep breath, putting both arms high over head, and lock thumbs. Holding arms that way, march about on tiptoe, stretching just as high as you *can*. Take deep breath, hold for a few seconds, let it out, take another, all the time you are marching. That exercise forces the chest out and the abdomen in.

Raise Feet—Lie on the floor or on a hard couch. Hands to the side, feet close together. Take a deep breath, raising the abdomen. Set the abdominal muscles hard, then raise limbs as high as possible, both together, without bending the knees. Then let them down slowly, all the while holding your breath. When the feet touch the floor, expel breath. Take another breath, and do it again. Try to raise the limbs to a perpendicular position, and then see how slowly you can let them down, and try to touch the floor without any sound. Do this two or three times, and then, as the muscles get stronger, do it five times. After a while you can fold your arms while you do it.

Sit Up—Still on the floor, with hands to the sides, take a deep breath, hold it, raise abdomen, hardening the muscles, keep knees stiff and feet on the floor, and slowly raise your body to a sitting posture. Be sure and do not let your feet leave the floor. Go back again slowly, and expel breath when your head touches the floor. Do it two or three times at first, and then five times as you get stronger.

Tips of Fingers to Floor—Raise hands high over head; then, with knees stiff, stoop over and try to touch the floor with

the tips of your fingers. Take a deep breath as you raise your hands over your head, and expel as you come down. Do that five times at first, then ten, and then twenty-five as the back muscles get limber.

Raise Knees to Chest—Stand erect. Take a deep breath. Bend knee of right leg, and try to touch your shoulder with it. Do that ten times, breathing, holding breath and expelling; then the other leg.

These are my very best exercises for reducing the abdomen, and while they are doing that, they also strengthen the lungs and drive fat away from the chest and start the circulation. If you can do these exercises twice a day, so much the better, but if that is not convenient, go through them *once* a day and very soon you will begin to see results.

Take ten or twenty deep breaths at the open window every morning, when you first get up, through the nose, keeping chest well covered. Sleep seven hours out of the twenty-four.

Drink a glass of hot (not too hot) water and orange-juice when you first get up in the morning.

After your exercises take a good scrub bath with tepid water and a good soap. Scrub hard until you are red all over, rinse with tepid or cold water, and rub well with as coarse a towel as you can get.

After that, if you can take a horseback ride, or a vigorous two-mile walk, so much the better. If you walk, wear a sweater, a loosely belted skirt and comfortable shoes (rubber heels if possible). Make a *business* of the walking. Get into a fine perspiration. Come home and rub dry with a coarse towel before getting into different clothes.

Of course, if you have breakfast to get and your housework to do, you probably won't have a chance to get out for your morning walk, but perhaps you can walk *some time* during the twenty-four hours. But if you *cannot*, the exercises will be of *great value*, almost better than walking, because they work directly on the abdominal muscles. And, as I said before, the working of the muscles drives away fat.

For breakfast, a baked apple, or a dish of prunes, two slices of bread (whole wheat if you can get it) and one weak cup of coffee. If you feel you *must* have something heartier, then a curdled egg, or two slices of crisp bacon. (To curdle eggs, pour boiling water over them, remove from the stove, cover, and let stand from five to eight minutes.) *Never eat fried eggs.*

Do not take any water with your meals, but drink at least two quarts of water a day *between meals*. Make a business of water-drinking.

Never lie down after meals. It is *much* better to be on one's feet for half an hour or an hour after eating. I have found that out from experience. A lady I know who sits a good deal (a dress-maker) stands up against the wall for half an hour after each meal. But if a woman does her own work, she need not do that.

If you do your own housework, go into it with vim, and take all the steps you can. Work outside, too, if you have time. Rake leaves; stoop over, and pick them up. Every time you stoop over, that wiggles off a little fat.

If you have dinner in the middle of the day, eat just a few simple things; a little meat, never more than one potato, a non-fattening vegetable and a bit of fruit.

For supper, a bit of cold meat, two slices of bread and *sip* a glass of milk.

I will give a list of foods that will *not* produce flesh, and, from that list, you must choose sparingly.

Fresh fish, mutton, lamb, beef, chicken, turkey and *crisp* bacon. All kinds of game. Curdled, soft-boiled or poached eggs. Celery, lettuce, spinach, asparagus, onions, cabbage, string-beans, beet-tops and water-cress. (Tomatoes are not fattening, but I do not recommend them.) Whole-wheat bread, thin toast, shredded-wheat biscuits, gluten bread and gluten wafers. All kinds of fruit in moderation. Some stomachs cannot take care of raw fruit. In that case, I have always recommended stewed fruits. All kinds of nuts, *chewed thoroughly*. A small quantity of American cheese.

I do not know just what to say about berries. Some good authorities say never touch them, on account of the seeds. Others say the seeds never do any harm. To be on the safe side, I stew *all* berries, put them through a sieve, add just a *bit* of sugar and pour the juice over a shredded-wheat biscuit. That tastes delicious, is nourishing and *not* fattening.

It is better not to eat soup. Even when it is possible, I do not advocate a daily hot bath for flesh-reducing. It is too weakening. But a daily scrub bath with tepid water, or "dry scrub" with a very stiff brush, is necessary to keep the pores open to assist nature in its work.

With the exercises I have given, and the list of non-fattening foods, and the advice on water-drinking and bathing, you should be able to reduce your weight without the aid of a physical trainer. Be sure to chew everything you eat to a *liquid* before swallowing. Digestion begins in the mouth.

Saving Money

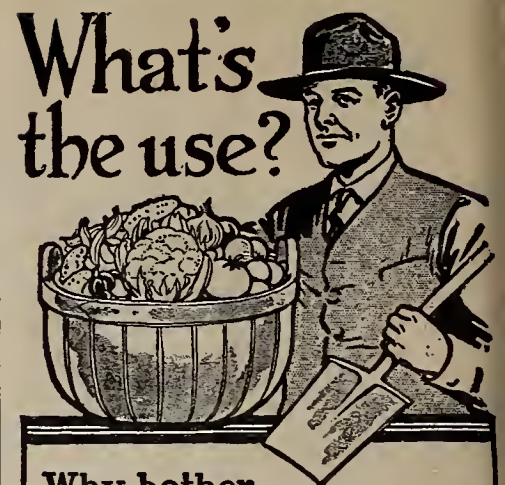
[CONTINUED FROM PAGE 13]

a little over thirteen cents. Now these parcels, differing from letters, are the same as express matter and ought not to pay the railways more when carried for the post-office than when carried for the express companies. Yet bills, like the Bourne and Anderson, utterly ignore this condition, leaving the government to pay thirteen millions of dollars to the railways for traffic for which the express companies pay the railways only seven millions. Someone may see a railway scheme in this, but he is quite mistaken. Bourne and Anderson are as honest as might be wished. But they are toy-makers simply—who, childlike, make believe that their dolls are living, actual beings which cry and sing and dance. The trouble is not with their characters, but with their present incompetency to deal with the subject. Apparently they are not students of transportation economics, and regard the parcels post as a sort of political plaything. They jump to writing "my bill" without study of the subject or responsible comprehension of the conditions of the problem; just as the boy sets up his snow-man, when the snow falls, utterly oblivious of the elements which melt it away, when subjected to the test of the practical conditions of business and of common life.

"The people of this country have waited for forty years for relief, and are entitled to complete relief. They ought not to have served them a 'lemon' or a toy wagon. Any one of these parcels-post bills as drawn, ignoring the conditions methodically set forth above, will simply prove a new charter to the express companies to continue their status for a generation. The truth is that the express companies are our parcels post; that is, they have squatted on the ground that should be, that must be, occupied, by our postal system if it is to give relief. They are not efficient; their rates are from two to three times as high as they should be, and their service does not reach the farm, or half the towns reached by the post. Their defects are the infirmities of the private-service-motive applied, where the public-service-motive should be applied, to public business. The remedy is plainly to eliminate them entirely, and let the natural functionary, the postal system, take their places, giving rates of about one half, and service to all the points reached by the Postal Department.

"Under the circumstances it is not surprising that government postal express has won the favor of the House. The Lewis-Goeke Bill to take over the express companies was carefully considered by the Committee on Interstate Commerce, favorably reported, and now stands on the calendar awaiting its turn. Universally it is conceded that this measure provides a complete solution of the express and parcels-post questions.

"This is really a momentous occasion for the American people. It is no exaggeration to say that no piece of legislation in a generation can be made to give them so much, or by undue precipitancy and incompetency give them so little. If a real solution through the Goeke or Gardner bills is secured, the express company eliminated and the postal system substituted in its place, producers on the farm and in the factory can deal direct with consumers through a transportation conduit for the small or retail shipment, cutting out the roundabout processes of commerce, enabling the consumer to purchase his necessities at the first rather than the third or fourth price, and thus saving about half the cost. It would be a pity, almost a crime, to have this great occasion spoiled by mere toy-makers, of whom one can only say in patriotic sorrow: "Forgive them, they know not what they do."



What's the use?
Why bother to raise so many "good things" unless—

—Unless you *save* them. Your wife can "put up" many kinds of fruit. But it isn't so *easy* to "can" vegetables.

Not—if she *depends* on old-style, narrow-necked, tin-topped, screw-capped jars, that take in only *small* fruit. This year find out the better way to "put up" fruit—and vegetables, too—the

E-Z SEAL JARS

This is the all-glass jar, with the all-glass cap—no metal to taint the fruit—no twisting and turning. No shattering, no splattering. Easy to fill, easy to seal, easy to open and clean.

Don't allow good garden stuff or fruit "to go to waste." You may be sure it will keep—vegetables and fruit will *not* spoil in these air-tight, all-glass sanitary jars.

Free Jar—Free Book

Cut out this coupon, take it to your grocer—he will give you one E-Z Seal Jar—FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the grocer. Get the Book from us.



HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar BL
FREE for the Coupon

Please note—in order to secure free jar this coupon must be presented to your dealer before Sept. 1st, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name _____
Address _____
TO THE DEALER:—Present this to jobber from whom you received E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.
DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.
Dealer's Name _____
Address _____

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The Road to Comfort

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FARM AND FIRESIDE

THE NATIONAL FARM PAPER

EVERY OTHER SATURDAY

ESTABLISHED 1877

JULY 6, 1912



And all the while she milked and milked
 The grave cow heavy laden;
 I've seen grand ladies, plumed and silked,
 But not a sweeter maiden;

But not a sweeter, fresher maid
 Than this in homely cotton,
 Whose pleasant face and silky braid
 I have not yet forgotten.—Christina Rossetti.

DUBIOUS

About What Her Husband Would Say

A Mich. woman tried Postum because coffee disagreed with her and her husband. Tea is just as harmful as coffee because it contains caffeine—the same drug found in coffee. She writes:

"My husband was sick for three years with catarrh of the bladder, and palpitation of the heart, caused by coffee. Was unable to work at all and in bed part of the time.

"I had stomach trouble, was weak and fretful so I could not attend to my housework—both of us using coffee all the time and not realizing it was harmful.

"One morning the grocer's wife said she believed coffee was the cause of our trouble and advised Postum. I took it home rather dubious what my husband would say—he was fond of coffee.

"But I took coffee right off the table and we haven't used a cup of it since. You should have seen the change in us, and now my husband never complains of heart palpitation any more. My stomach trouble went away in two weeks after I began Postum. My children love it and it does them good, which can't be said of coffee.

"A lady visited us who was usually half sick. I told her I'd make her a cup of Postum. She said it was tasteless stuff, but she watched me make it, boiling it thoroughly for 15 minutes, and when done she said it was splendid. Long boiling brings out the flavour and food quality." 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.

Cow-Ease Prevents Ticks. KEEPS FLIES OFF Cattle and Horses. and allows cows to feed in peace, making More Milk and More Money for you. TRIAL OFFER. CARPENTER-MORTON CO. BOSTON, MASS.

MINERAL HEAVE REMEDY CURES HEAVES. In use over 50 years. \$3 Package will cure any case or money refunded. \$1 Package cures ordinary cases. Agents Wanted. Mineral Heave Remedy Co., 425 Fourth Ave., Pittsburg, Pa.

Shoo-Fly THE ANIMALS FRIEND. Keeps flies and other insect pests off of animals—in barn or pasture—longer than any imitation. \$1 worth saves \$20.00. SEND \$1, enough Shoo-Fly to protect 200 cows, and our 3-tube gravity sprayer without extra charge.

GET THESE BOOKS. Why Silage Pays. If you raise stock for profit, you ought to read the latest edition of "Why Silage Pays." It is packed with surprising facts of profit-making possibilities in silage feeding, tells how and when to cut, gives endorsements of well known breeders and authorities and shows the Blizard Cutter which we guarantee. With this helpful book we include our 1912 catalog, describing and showing various sizes of our machines. Both books sent free on request. Get them now. THE JOS. DICK MFG. CO., 1444 Tuscarawas St., Canton O.

With the Editor

"TWO of the greatest drawbacks to real education in Virginia are the hookworm and the bookworm." This is what Eggleston says—not Eggleston of Oregon, the maker of epigrams and laborer for single tax, but J. D. Eggleston of Virginia, State Superintendent of Schools, and well able to carry on the Eggleston business of phrase-making.

When I saw the above statement in a bulletin, I settled back with a sigh of appreciation, for I knew that any man capable of making that sentence would have something to say and would know how to say it.

Of course, everyone knows that the hookworm is a drawback to education. But it is a fine thing to know that through the activities of the Rockefeller Hookworm Commission the plague is being gradually wiped out. I learned in Washington the other day that two hundred thousand people have been cured of hookworm already through the work of this commission. They have been made over into new people. Instead of having a brood of worms sucking their blood and making them miserable and useless to themselves and everybody else, they now have healthy stomachs and bowels, clear minds and energetic muscles. They are really alive again. In the hookworm belt the schools are being equipped with sanitary closets for sewage disposal. The curse of hookworm will likely be turned into a blessing to the South.

I learned, too, that the farms of the South are being equipped with privies and septic tanks at an unprecedented rate. I have been in portions of the South where such outhouses were almost unknown on the farms. It took the hookworm scourge to show these people that these buildings are absolutely necessary to the health of the farm people. So, all things considered, we may take it as blessedly true that, not only in Virginia, but all over the hookworm region, that "drawback to real education" will be one of these days removed completely.

BUT what can this pungent utterance mean when it classes the bookworm with the hookworm as a drawback to real education? Isn't education a matter of being acquainted with books? Isn't the person who knows most about books the best educated person? And isn't a bookworm a person who clings to the pages of the book with his eyes as the hookworm to the alimentary canal with his hooks?

Education! Why, isn't education a matter of reading till one is near-sighted, and poring over Latin and Greek lexicons, and covering sheets of paper with algebraic formulæ, and getting blind to nature, and deaf to bird songs, and centered on manuscripts and treatises and text-books? Really, one must look upon this Eggleston person as a dangerous innovator, to class the bookworm and the hookworm together! But perhaps we may as well look down the page and see what more he has to say.

"The bookworm," says he, "is a mental and spiritual handicap. It sometimes stifles and often causes a misdirection of the mental energies. One of its most dangerous tendencies is to cause the mind to magnify unessentials while imagining these to be all-important."

I begin to see what he is driving at. I begin dimly to remember the ancient practice of making boys learn Latin at ten, and of urging them to emulate those prodigies who read Greek fluently at the same tender age. The bookworm forgets that when Greek and Latin were important matters we knew next to nothing of natural philosophy, nothing of botany, nothing of biology, nothing of chemistry, nothing of bacteriology, nothing of modern knowledge—and that we can't know both these and the classics. If all the Greek and Latin literature of the world were wiped out, we should not lose much. We should lose Homer and Vergil and Æschylus and Plato, but we should still possess Shakespeare and Browning and Wordsworth and Shelley and Edwin Markham and Henry George and a host which are much more useful and greatly more available. And if we lost all these, while it would be a great loss, we should still have the great Book of Nature which was closed until lately. Science is the great thing to-day—science and the arts of living. We should be able to create a whole body of polite literature and art were all these wiped out; but the great body of scientific knowledge is built up bit by bit by research workers, and were it lost, we should go back to the darkness of ancient times.

This is what Eggleston means by the bad influence of the bookworm—that, with the great book of scientific truth open before him, he still insists in poring over the little volume of literary and artistic knowledge of the past; that, where accomplishment is offered him, the bookworm chooses accomplishments merely; that, refusing power, the bookworm chooses erudition; that, with God's works for the first time spread out for his perusal, the bookworm deliberately turns to the puny works of man.

"This tendency," says Mr. Eggleston, "causes the victim to neglect to cultivate the social and spiritual energies latent in every human being. . . . For example, the bookworm, the natural ally of the hookworm, having produced a condition of mental and spiritual myopia, and a laissez-faire attitude toward life, causes its victim to wait for the hookworm and the typhoid and other germs to afflict the people before an attempt is made to cure these terrible scourges of the human race. Its victims look upon typhoid, diphtheria, tuberculosis, pneumonia, la grippe and other preventable diseases as visitations of a mysterious Providence, instead of visitations of natural causes clearly preventable. As bad as the hookworm is, its effects are small compared with those produced by the bookworm. The bookworm's worst effect is the attitude toward life it produces in its victims. One strange delusion it produces is that culture consists in book knowledge for the sake of knowledge and not for social service—and that one should not will until one knows. Its formula may be expressed in the sentence, 'He that knoweth will do.' Its practical effect has been to teach how to 'do' others. This is diametrically opposed to the standpoint of Jesus Christ, whose entire life and teaching was 'He that wills to do shall know.'"

THE point Mr. Eggleston is making is, not that books should not be loved and used, but that useful knowledge is more truly cultural than useless knowledge, and that the old bookworm thesis that only the useless is cultural is untrue.

One of our good subscribers wrote once, protesting that the teaching of agriculture in the rural schools will deprive them of the power to turn out "cultivated" young women and men. This person, though apparently rather short of book knowledge herself, was truly a bookworm in the Egglestonian sense; that is, she wanted bookishness rather than the real education of skill and efficiency. Some of the people who are most afflicted with the bookworm disease are far from being well read. It is the state of mind that determines the matter. Shun the bookworm and eradicate the hookworm, that your days may be long and useful in the land the Lord thy God giveth thee. Read all the books you can get, but not with the bookworm attitude.

Herbert Quick

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Springfield, Ohio, July 6, 1912

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BI-WEEKLY

Rain-Making Extraordinary

ACCORDING to the Hemet, California, *News*, the people of that vicinity have allowed themselves to be faked out of \$4,000 by an alleged rain-maker named Hatfield. "Mr. Hatfield," says the *News*, "has traveled over the valley collecting the amounts due him, which aggregate \$4,000."

Of course, Mr. Hatfield never made rain. But he wheedled the people into signing contracts, under which he agreed to deliver four inches of rain before May 1st—and collected the money, because rain happened to fall.

During January and February Mr. Hatfield "worked" the San Joaquin Valley, California, claiming to be able to make rain. Rain did not happen to fall, and he went away, saying that his chemicals were old. A few days after his departure generous rains fell. Had he kept at it, he might have collected on God's providence in the San Joaquin as he did at Hemet.

Hatfield commenced his operations for the purpose of making rain in the vicinity of Hemet on March 5th. Rain began before he did on March 1st, continued on the 2d, and more fell on the 5th and following days. Hatfield quit on May 1st, and rain fell on the 7th and 8th.

Prof. A. G. McAdie of the San Francisco office of the Weather Bureau sums up the matter as follows:

"There is no evidence that there have been any genuine rain-making experiments. There is no evidence that the so-called experiments of Hatfield have had any relation to rainfall. In no instance did the rain fall at the point of experimentation, so called, and not fall at many points many miles distant. No heavier precipitation occurred, notwithstanding the rain-maker's claims, than does regularly occur owing to differences in elevation. Nearly every statement made by the rain-maker regarding his experiments has been contradicted by the official records."

Rain-making is always either a fraud or an ignorant fallacy. We must depend on good farming instead of subsidies to fakers. Farmers in the neighborhoods where these gentry are working are advised to keep their names off contracts and their money in their pockets.

This last winter and early spring were very dry in southern California. At Santa Barbara the drought was so threatening that a public meeting was called to consider the matter, and an eastern millionaire offered to provide funds for explosives to be used in making rain by the old and fallacious scheme of knocking water out of the sky by detonations. While the debate was on, rain came. It kept raining, too. A great part of the drought-stricken region was favored with good rains—including Hemet. Had the millionaire who offered to buy the dynamite been a Hatfield, he could have collected thousands from deluded farmers if he had shot off a few bombs, although the weather-bureau forecast promised rain at that moment. It would be a fine thing if rain-making could be done. But it can't. It can, however, enable charlatans to make money out of people who are already in great need. All over the arid regions it will be the part of good citizenship to look out for rain-makers, just as for patent-medicine and lightning-rod fakers. They are all off the same piece.

Life the Same Thing Everywhere

MENDEL, in his experiments in crossing peas, established principles of breeding which apply equally to vegetables, beasts and human beings. Heredity is the same thing, because life is everywhere the same thing. A mysterious something called protoplasm is the basis of all life, in man, in brute, in plant. The study of plants is, therefore, the study of the stuff of which human beings are made. It was Job who said unto the worm, "Thou art my mother and my sister," and with equal truth he might have said the same thing to the tree or the weed. Even in our diseases we are all in one great brotherhood with the crops and flocks. Cancer has long been, and still in large measure is, a mysterious plague which physicians fled before, and

surgeons coped with only in its infancy. But the secret of the cancer's life has been partly guessed, if not entirely laid bare, by the studies of crown gall in plants by the workers of the Department of Agriculture at Washington. Crown gall, with the appearance of which on plants most of us are familiar, is a vegetal cancer. Its peculiar bacteria have been discovered and grown artificially. There is every reason to believe that the same methods will isolate the bacterium of cancer, and when that is done, we shall be well on our way to a mastery of this most dreadful of diseases.

There is no such thing as an isolated fact.

Princeton University has established a farm at which students may work with the implements of agriculture. This is just a side-line for this great institution, but it indicates the way folks are thinking.

"Every man for himself and the devil take the hindmost" is a bad, an unchristian, motto. And, like all bad and unchristian maxims, it is a counsel of foolishness as well as of cruelty. For when one hindmost is destroyed, there is always another hindmost. And then another. "The injury of one is the concern of all."



The Cow: "I'd laugh, too, if I were as well fed as you"

Does This Mean Anything to You?

CONCRETE pits were filled with clay loam—a good deal such soil as the average farm possesses—and some of the pits planted with corn and oats, while the others were left bare. The water draining from these plots were analyzed to see what it carried off. It was found that three times as much solid matter was taken away by the water from the pits with the bare soil as from the planted ones. The results are worth the study of every farmer, whether he is in the habit of using cover crops or not. Twelve times as much waste in nitrates took place from the plots when bare as when covered with vegetation. From October to May this waste of nitrogen from the bare soil was at the startling rate of one hundred pounds per acre. Lime went off twice as fast from the bare soil as from the cropped plots.

Now why buy fertilizers and then let them waste in the drainage-water? What sense is there in purchasing nitrates to enrich the waters of the brooks and ponds? Isn't a hundred pounds of nitrate just as valuable in the field as in the bag? Isn't it as a matter of fact more so?

The moral is, Use cover crops. Don't let an acre of land lie without a growing crop, except for the shortest possible space of time. The waste is not so great in the arid regions as in humid ones, but it is a dreadful waste anywhere, and in any season. The cover crop saves fertility, and when plowed down, gives the soil humus. Prepare for the fall cover crops now.

Mr. C. M. Read of Goodland, Oklahoma, suggests that in speaking of the heroes of semi-arid farming the editor should have mentioned the heroines, too. Our theory is that the former embrace the latter.

A Panama Question

THE Hay-Pauncefote Treaty, under which we are building the Panama Canal, provides that ships of all nations shall be entitled to the use of the canal on equal terms. This means that uniform tolls shall be charged for passage through the canal. No discrimination in favor of American ships can be made. But the laws of the United States provide that all coastwise commerce—that is, commerce from one of the ports of the United States to another port of the United States—shall be carried in ships of the United States. No vessel flying a foreign flag, therefore, can engage in trade between our Atlantic and Gulf ports and our Pacific ports. Therefore, it can make no difference to these foreign nations whether our coastwise ships pay tolls or not, since they could not engage in the trade, anyhow. Hence, is it not arrant nonsense to say that it is a violation of the Hay-Pauncefote Treaty to allow our own traffic to pass through the canal toll-free?

Some Good from Floods

THE Department of Agriculture at Washington points out a way to get some good out of the Mississippi floods. The floods have made it easy to get rid of the tick-fever tick in the flooded districts. The cattle have been bunched on levees and knolls during the flood, while the ticks have been drowned in the pastures. If the cattle are dipped or otherwise freed from ticks, they won't take the pests back to the farms. On the other hand, if the stock are kept off the levees and knolls on which they dropped the "bugs" while waiting for the waters to subside, the ticks will starve in four months.

Test Your Seeds

WITH the seeds of alfalfa, clover, vetch and other legumes so high that many farmers are wondering whether or not they can afford to buy at all, the question of getting good seed is a crucial one. The Department at Washington has been for some time testing lots of imported seed and finds a degree of adulteration and low vitality which is startling. Of these lots of imported seeds of vetch, white, red and alsike clover, the actual percentage of the true seed was found to vary from 64 per cent. in the case of red clover to only 23 per cent. with vetch. More horrible to relate, what true seeds were actually found in the samples varied in vitality from three quarters down to less than a third which would grow. This made the seeds which were fit to sow cost from \$23.29 per hundred pounds for vetch to \$111.86 per hundred for white-clover seed!

Potash for a While

THE German monopoly of potash seems to be in a fair way to be broken so far as the United States are concerned, if the following Washington despatch proves accurate:

Enough potash to supply the United States probably for the next thirty years has been discovered by government scientists in Searles Lake, San Bernardino County, California.

The great value of the find is that the product is in readily available commercial form. Potash is known to exist in many places in the United States, but in most of the cases no commercial means has been found to use it.

The dried-up lake has received the drainage from the surrounding hills for thousands of years, vast quantities of dissolved minerals thus having concentrated in it.

One of the great blessings possessed by us, and one for which we are not usually sufficiently thankful, is the immense expanse of land of all sorts and with every variety of climate embraced under one flag, with absolute free trade. We find almost anything by looking for it, and when we find it, we can ship it freely to supply our needs. There is every reason to hope that other deposits of potash will be found, which with these and with the kelp beds of the California coast, of which our readers have been informed, will make us independent of the world as to this element of fertility, as we already are as regards phosphorus and sulphur.

Factors That Make Farming Pay

By Two Specialists

Oats—a Northern Corn-Belt Crop

By L. C. Burnett
Iowa State College

THE territory here discussed is composed of the southern half of the Great Lake basin, the northern half of the Ohio Valley and the semi-wooded prairies of the upper Mississippi and Missouri river valleys. The accompanying map shows relative proportions of each of these territories. The part which is shaded dark shows the most important portion of this territory. Here I will deal chiefly with the problems of this section, and, while they may require some modification in order to be applicable to the outlying districts, the general principles may be considered to apply throughout.

The increase in the number of rented farms in this territory during the last twenty years, together with the improvement in transportation facilities, has greatly favored the production of a crop which can be readily turned into cash. Such a crop is Indian corn. In the territory where dent corn can be grown profitably it has, in the last two decades, become the "money" crop.

This is due to several causes, the chief of which is its varied use in commerce and the arts. The milling and distilling interests furnish a market at all seasons, and ear-corn can be stored in the cheapest of shelters.

There is still another cause for the farmers of the corn belt turning to this one crop during the last two decades, and in my opinion this has been the determining factor rather than has the ready market value of the grain. It is that in this territory the proportion of renter-farmers has increased greatly. These farmers are not men of means, and practice has shown that they hire only the land they can till without extra labor. This means that they will raise the crop that will afford the greatest number of days' wages for the tenant and his team. This has been found in corn rather than in the small-grain crops. The labor is distributed from early April to late in autumn, or even winter, while with small grain extra help must be provided in July and August, and after this the teams and laborers are practically idle. The corn crop distributes the labor over the greatest possible time.

This kind of farming, while profitable for a short period, is becoming much less so as the years pass, and at the present time the older settled portions of the corn belt are coming to realize that their land will not produce the yields which it at one time did. Even the use of improved machinery and varieties and liberal applications of fertilizers will hardly keep the yields up to standard. In some places the soils wash badly, and the physical condition is becoming poorer.

Two factors enter into this depletion of the soil. In the first place, the continued cropping to one kind of plant has so lowered the supply of one or more elements of plant-food that the ration for the crop has become unbalanced. By far the worst feature, however, is the fact that the soil, when planted continually to a cultivated crop, is exposed so violently to the action of the sun and air that the vegetable matter becomes burned out and exhausted. When this condition becomes complete, we have nothing left but disintegrated rock, which, of course, is incapable of profitably sustaining plant life.

In addition to the effect on the physics and chemistry of the soil, continued cropping to corn soon inoculates the land with all the injurious insects and other pests to which corn plays the part of host. Weeds, like quack-grass, that thrive in shallow cultivated soils, gain a foothold and finally take possession of the land.

There are many farms scattered throughout this country that prove that proper management will eliminate these difficulties. A study of these systems shows their first principle to be "rotation of crops."

Some men have endeavored to evade rotation by planting legumes in the corn at the last cultivation. This practice, without doubt, helps much to keep up the nitrogen and humus supply. It has, however, in many instances been found to lower the yield of corn by robbing it of its water-supply. Then, again, in seasons of partial drought the seed of the legume often fails to germinate. The practice is very haphazard and can only be classed as a makeshift.

In rotation of crops is found a stable system of farming. Different plants take up the elements of the soil in different proportions. Legumes maintain the nitrogen of the soil instead of lessening it. The small grains and grasses protect the soil from the sun during their periods in the rotation, lessening the combustion of organic matter and adding humus when plowed under. The corn crop rids the lands of the weeds that are killed by cultivation. When manure enough is added

to supply what is taken from the field each year, the system will long continue to give good returns.

In a rotation in which corn is the major factor, as in the case in the territory we have under discussion, we are obliged to furnish at least one small grain crop, which is planted in the spring. In localities where the corn is cut and moved from the field, it is possible to follow corn with winter wheat. But in the corn belt the corn matures too late to attempt to follow such a plan. It is much more feasible to follow the corn with a spring grain, and the oat crop is particularly adapted to this place.

Coming as it does from the more severe climates of the world, the oat is hardy against the lesser frosts of the early spring. It can be put in very early, and being a "surface feeder" does not require that the land be plowed in order to produce a satisfactory crop on well-tended corn ground. This means that the sowing of the oat crop can be completed before other spring work becomes pressing, a factor of no minor consideration. Following this still farther, the oat crop matures just after the final cultivation of the corn crop; and if the varieties are properly chosen, this period can be extended over a period of ten days to two weeks. This means that one team and machine can harvest a large acreage. This is not the case with other small grains. When the barley crop is just mature, it must be cut at once, or heavy damage is likely to be occasioned.

The uses to which oats are put do not require the fine handling that we use on wheat and barley; thus they are more economical of labor.

Finally, the oat crop does not draw heavily on the nitrogen-supply of the soil. Likewise, it is one of the best of nurse crops for clover. No other plant furnishes such abundant recommendation as a crop to follow corn.

Two rotations, both including oats, are prevalent in the central corn-belt States. By far the most common of these is: corn, corn, oats, clover, but the other: corn, corn, oats, clover, winter wheat, has much to recommend it and is found on many successful farms.

Nineteen Hundred Dollars Lost

By D. H. Otis
University of Wisconsin

TWO 160-acre farms which have the same opportunities as to land, capital and markets show different net returns for last year's work. This difference points out the difference between good and poor management in the handling of both land and live stock.

On both of these farms dairying is considered as the leading feature, with hogs as secondary. The type of soil, markets, etc., are the same for both farms. The capital invested and its distribution on the two farms is shown as follows:

	Farm No. 5	Farm No. 62
Investment in land.....	\$10,800	\$10,600
Buildings	5,000	5,250
Water-system	200	150
Dairy supplies and utensils....	100	110
Machinery, implements, wagons, tools, etc.....	450	1,000
Harness	90	125
Miscellaneous farm equipment.....	—	60
Cash balance	60	250
Cash held over for improvements	—	1,200
Live stock	1,675	1,969
Total	\$18,375	\$20,714

The most striking difference in capital invested is with machinery and tools, where Farm No. 62 has

\$1,000 invested, as compared with \$450 with Farm No. 5, a difference of \$650. Furthermore, Farm No. 62 has \$250 more invested in buildings, \$35 more in harness, \$60 more in miscellaneous equipment, \$190 more in cash balance and \$294 more in live stock. On the other hand, Farm No. 5 exceeds Farm No. 62 by \$200 in land and \$50 in the water-system. The \$1,200 cash held over with Farm No. 62 is only a temporary condition to meet expenses for improvements for this year. While the capital invested in live stock is similar, it is interesting to note how it is distributed. The live-stock investment for farms No. 5 and No. 62, respectively, is, horses, \$950 and \$800; cattle, \$420 and \$895; sheep, \$111 and \$—; swine, \$182 and \$230; poultry and bees, \$12 and \$44; making a live-stock total of \$1,675 and \$1,969.

The differences in the amount and distribution of capital invested in live stock are significant. It will be noted that Farm No. 62 has \$150 less invested in horses, but \$475 more invested in cattle, \$48 more in swine and \$32 more in poultry. Farm No. 5 has \$111 invested in sheep, while Farm No. 62 has none. These differences should be kept in mind when the receipts from the respective farms are considered.

Farm receipts:	Farm No. 5	Farm No. 62
Sale of crops.....	\$420.00	\$1,417.50
Sale of live stock.....	1,173.00	792.00
Live-stock products.....	108.00	797.00
Increased inventory	505.00	3,015.50
Miscellaneous sources.....	35.00	—
Total	\$2,241.00	\$6,022.00

Farm No. 62 received over three times as much from sale of crops as Farm No. 5, while Farm No. 5 sold 67 per cent. more live stock than Farm No. 62. It would seem that the difference in income from sale of live stock is more nominal than real. This difference exists almost entirely because Farm No. 5 sold one of its work-teams for \$350, reducing the inventory in live stock to that extent.

The income from sale of live-stock products is very small for farm No. 5. This is doubtless due to the fact that the farmer has been grading up with a beef breed instead of a dairy breed, and as a result he did not get enough from his cows in the way of dairy products to pay for the expenses of milking.

Increased inventory may result from improvements in the way of buildings, machinery or increased live stock. This amounts to \$3,015.50 for Farm No. 62, of which \$2,700 was in buildings, \$25 in fences, \$5 in nursery stock and \$285.50 in live stock. With Farm No. 5 the improvement in buildings amounts to \$400; machinery, \$85, and fences, \$20. While the receipts for Farm No. 62 total over \$6,000, it will be noted that \$2,700 of this is due to buildings constructed, which will also appear under the items of expense.

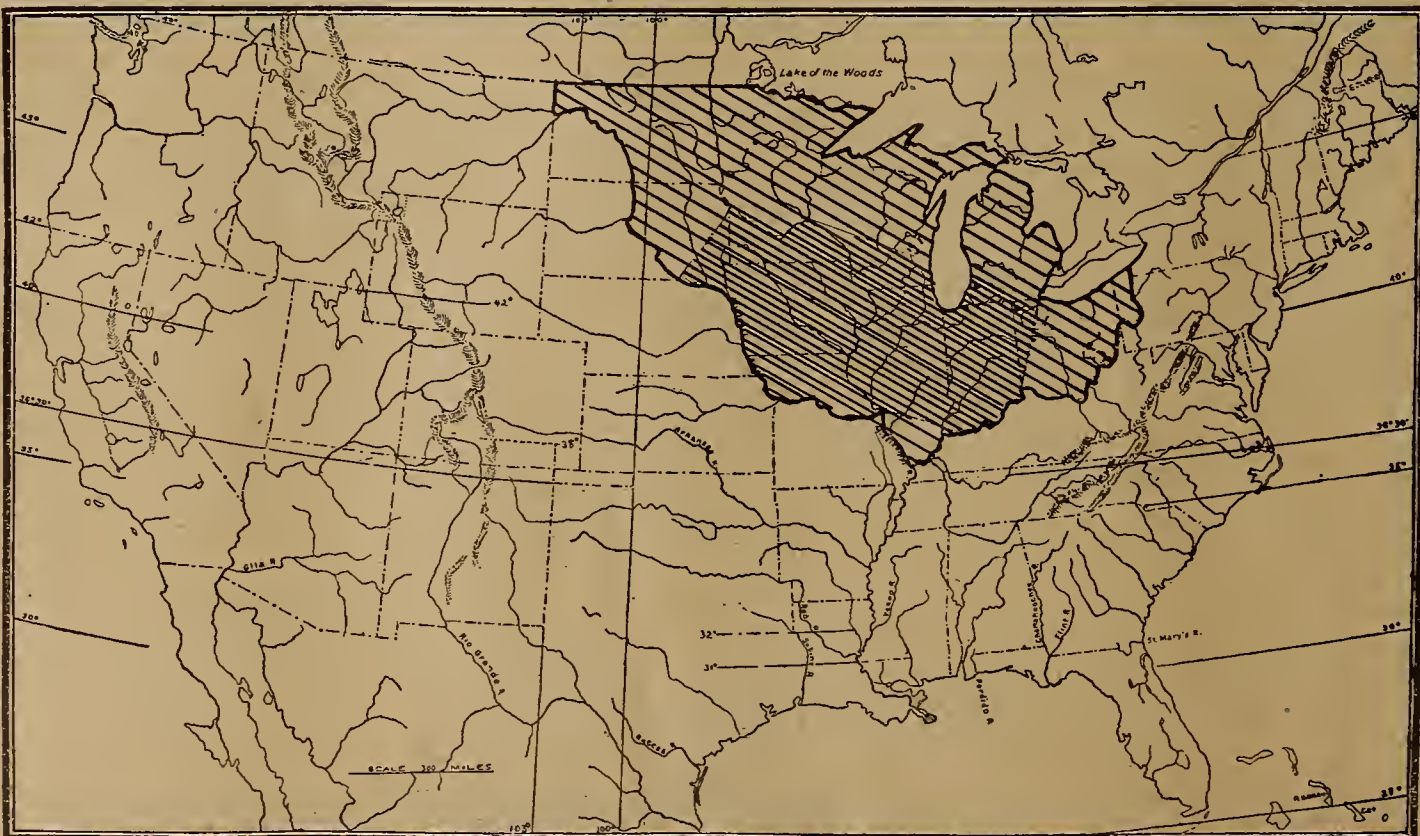
The expenses of the two farms are as follows:

	Farm No. 5	Farm No. 62
Stock purchased	\$280.00	\$36.00
Seeds	35.00	10.00
Feed	75.00	76.00
Supplies	109.00	59.50
Permanent improvements....	420.00	2,725.00
Rent, taxes, insurance.....	92.00	124.00
Labor	597.00	549.00
Repairs	10.00	39.00
Miscellaneous	—	20.00
Decreased inventory.....	269.00	—
Interest on investment.....	918.75	1,035.70
Total	\$2,805.75	\$4,674.20

It is interesting to note that, with the exception of expense for permanent improvements, the two farms do not differ to any large extent. Farm No. 5 bought

more live stock and supplies. It was also at an expense of \$269 for decreased inventory, resulting from the sale of more live stock than was replaced by the natural increase or purchase. It is interesting to note the similarity of the expense account for labor on the two farms. We may summarize the results on farms No. 5 and No. 62, respectively, as follows: Total capital invested, \$18,375 and \$20,714; total receipts, \$2,241.60 and \$6,022; total expenses, \$2,805.75 and \$4,674.20; making the net returns or labor income \$564.15 and \$1,347.80.

The difference in the results arises primarily from two sources: increased receipts on the part of Farmer No. 62 from the sale of crops and live-stock products. Farmer No. 5 must study how to get better yields and better prices for the products from both the land and the live stock that are his.



Important oat-growing sections are indicated by the dark shading

Saving \$23,000,000

By G. H. Dacy

JIM, they'll find no tuberculosis in that sleek, well-conditioned cow over yonder. Why, she's a twin pea for my old brown 'Sal,' that gives four gallons of milk, night and morning," said an old gray-haired farmer who was examining three cows about to be killed and subjected to a post-mortem examination for tuberculosis.

Jim turned and closely inspected the designated animal. "You're right, John, she's a blamed good milch cow. Look at that udder and those milk-veins. She's a winner, or I'm no judge of dairy cattle."

"Do you know, Jim, I'm kind of skeptical about this tuberculin test. We've got to test; the legislature says so, but it's not square to butcher a fine milking herd just because some poppinjay horse-doctor shoots a dose of tuberculin into them, reads their fever and then with a squint in his eye tells you the herd is condemned."

Further conversation was interrupted by the butcher, who began killing the animals. Thirty minutes later the demonstrators were passing among the crowd exhibiting various vital organs, as the lungs, intestines and liver, fairly teeming with tubercles and showing every indication of tuberculosis in advanced stages of development. The sleek cow so like John's "Sal" displayed the most radical infection of any of the animals.

This case of Jim and John merely exemplifies the radical skepticism of the average farmer concerning the findings of science, which have placed at his door the invaluable tuberculin test; he will deposit neither partial confidence nor even vacillating faith in this sovereign diagnostician. Our prejudiced countryman cannot or will not understand that external appearance is no criterion by which to determine the presence or absence of tuberculosis in a dairy cow. Even when the lungs and internal organs are badly affected, a physical examination of the living animal may exhibit no sign of the disease. Only in case the lymphatic glands are enlarged and the normal functions of the animal disturbed is external examination of any service in diagnosing.

The First Evidences May be Confusing

Notwithstanding, little credence can be placed on external diagnosis, because other troubles produce identical symptoms and due to the fact that often in the very early or extremely late stages of the disease no evidences whatever of the scourge appear. On the other hand, the cow may appear in perfect health, giving a good flow of milk, and yet be rapidly transmitting the plague by means of the tubercle organisms eliminated in her milk, sputum and manure.

When one considers that tuberculosis of animals represents an annual loss of \$23,000,000 to American live-stock interests, he readily perceives that to decrease the ravages of this disease among cattle and hogs is the most vital problem of the modern live-stock industry. The devastations of this enervating and life-sapping plague are not confined to the lower animals, for today there is no question about the fact that bovine tuberculosis can be transmitted to human beings, more especially in the case of children. Meat and milk consumed in the raw condition are virulent transporters of the dreaded tubercles. Statistics show that twenty per cent. of the "white plague" patients under sixteen years of age contracted the disease through organisms coming from cattle. Thorough cooking of beef controls the disease by killing the bacilli.

The tubercle bacillus succumbs when exposed to a temperature of 160 to 175 degrees Fahrenheit. The process of heating milk to 160 degrees Fahrenheit and then slowly cooling it to about 50 degrees is known as Pasteurization and efficiently controls milk-contamination by killing the organisms which transmit the scourge.

Let us return to our erstwhile skeptics, Jim and John, who are departing from the demonstration. Their countenances are slightly pallid, their conversation no longer boasts its former bravado, they have been "shown," their residences in Missouri have been abandoned.

"Jim, I certainly begin to appreciate that there's something in this tuberculin business. Why, suppose old 'Sal' has had tuberculosis all these years, and there Mary and Tom and the baby have been drinking her milk, day after day being exposed to this disease. That cow's going to be tested-right off."

We All Have Much to Learn

"You're showing the right spirit, John, there's a powerful heap to be learned about tuberculosis."

Perhaps some of the uninitiated, friends of Jim or John, may ask "What is tuberculosis?" It is a transmissible disease caused by specific, living bacteria, which enter and grow in the animal body, causing infection that ultimately results in the death of the animal. Its name arises from the characteristic bunches or swellings, known as tubercles, always found in diseased animals. Mayhap our inquisitors become interested and interrogate us further: "What parts of the body are most affected by tuberculosis?" In man the lungs are most frequently attacked; in cattle the lymphatic glands on the windpipe between the lungs, pharyngeal glands, lungs, liver, spleen and lymphatics of the intestines are preyed upon. The brain, spinal cord and reproductive organs are often tainted by the plague.

The infected organs usually increase two to three times their normal size in contradiction to the popular supposition that tubercular organs are shriveled and shrunken. The lymph-glands in the neck are often so expanded that breathing is rendered difficult, due to their pressure on the windpipe. Frequently we find that the lungs are so enlarged that they surpass several times the weight of normal healthy ones.

Another inquisitive friend may ask:

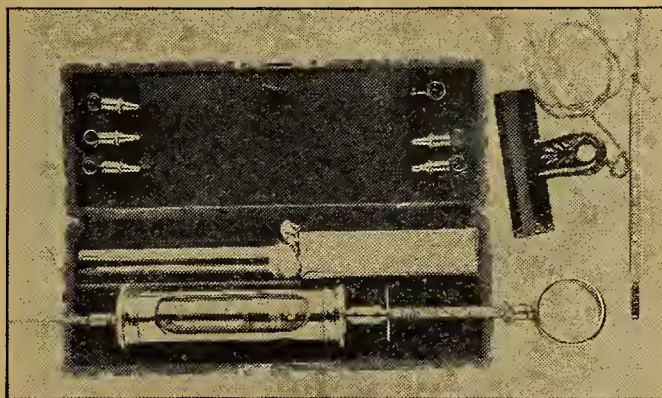
"How do bacteria infect the healthy animal, or how is the disease transmitted to the entire herd?" The manure of tubercular cows dries up, circulates as dust in the air and is inhaled by the cattle, the dust particles being retained in the nasal passages, while the tubercle bacilli pass into the glands of the neck and lungs. Some tubercle organisms are swallowed, penetrate the intestinal walls, pass through the lymph-glands and into the circulation. Again tubercular milk may be fed to cattle and hogs, the tubercles being ultimately deposited in the lymph-glands and lungs.

The pest is introduced into a herd through the purchase of diseased animals, the feeding of un-pasteurized skim-milk, buttermilk and whey, or by direct contact with an infected animal. Although un-sanitary conditions favor the spread of tuberculosis, they never cause the disease, as the tubercle bacillus must always be present. One diseased animal is often sufficient to infect the entire herd. Certain factors, as good and abundant feed, proper ventilation and sunlight, are conducive to health in the herd, although no surroundings, however sanitary, will save a herd constantly exposed to infection from diseased animals.

What organized effort can do in controlling tuberculosis was aptly demonstrated by the inhabitants of



"Insert the tuberculin just in front of the shoulder"



A set of tuberculin-injecting instruments

Barron County, Wisconsin. After a public post-mortem had convinced them of the dire necessity of combatting the bovine plague, these people rose to the occasion and adopted the motto, "No tuberculosis in Barron." The result was noteworthy, as out of 2,500 tests for tuberculosis only sixty-one animals were found to be tubercular, an average of about 2 per cent.

Our cross-examination is continued by a query regarding the tuberculin test and its application. Tubercle organisms are grown on glycerin beef broth for six to ten weeks; the cultures are then boiled and filtered, removing all the germs. In a word, tuberculin is a germ-free extract of the organism causing tuberculosis and thus cannot in any way cause the disease. Its use has no ill effect on healthy animals and in no way injures tubercular individuals. Tuberculin injected beneath the skin of a diseased cow causes a temporary fever, evidenced by a rise in temperature, while healthy cows exhibit no indications of fever when subject to tuberculin.

In applying the tuberculin test the fundamental essential is to obtain the average normal temperature of the individual, as there is a wide range of temperature in the bovine family. Temperatures are taken with a clinical or fever thermometer, which is inserted in the rectum for at least three minutes. Three and preferably four temperatures should be taken at inter-

vals of two or three hours, as, for example, at twelve, two, four and six o'clock, which give a correct estimate of the animal's normal body heat.

Then the tuberculin, in amount about two cubic centimeters for a 900 to 1,100 pound cow, should be injected beneath the skin just back or in front of the shoulder by means of a hypodermic syringe. Eight to ten in the evening is the most convenient time to make the injection, as it is necessary to begin taking temperatures eight hours later; that is, starting the next morning at four or six o'clock. Readings are taken every second hour until at least the eighteenth hour after injection, and in case fever is shown the temperatures should be continued until it begins to abate in a decided manner.

As far as possible, animals subjected to the test should be under normal conditions and environment; the preferable time for its application is while the cattle are stabled in the early winter or spring. In case the highest temperature after injection is two or more degrees Fahrenheit above the average normal temperature, obtained before the tuberculin was injected, the animal has given a positive reaction. The usual rise in temperature of a tubercular animal is more pronounced, four to six degrees Fahrenheit. When the temperature

at no time exceeds 104 degrees and the rise is never above two degrees, the reaction is classed as doubtful, and the animal should be retested after sixty days have elapsed and the original tuberculin has been eliminated from the system, a triple dose being given in the retest.

The positive, tuberculin reaction generally shows a regular rise, the temperature remaining at the highest point for only a short time, then falling gradually to the normal. Often the tuberculin induces shivering, staring coats, refusal to eat, etc., in the reacting animals. These conditions are not always prominent, in some cases they never appear.

The dreaded bovine plague can be controlled in the herd by tuberculin testing annually, by disposing of all animals which give a positive reaction to the initial application of tuberculin and to the retest, by feeding only Pasteurized milk, whey and buttermilk on the farm, and purchasing new stock only from herds known absolutely to be free from tuberculosis. As calves, when dropped, are not contaminated with the disease, they can be reared into healthy cows by keeping them separate from their dams from the moment they are born.

Clean the Hog-Yards

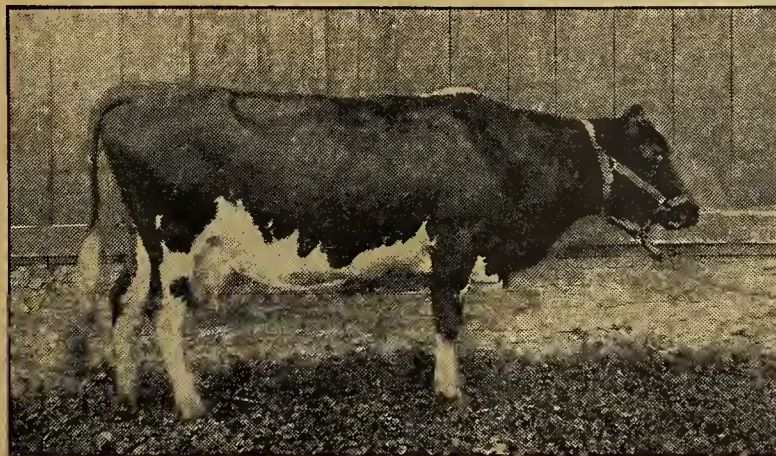
By C. J. Griffing

EVERY year, as soon after the frost leaves the ground as I can get to the work, I give my hog yards and pens a thorough cleaning. I lose a little needed time from my regular work, but I believe it pays me manifold. However clean we may keep the hog-lots during the winter, we cannot avoid the accumulation of much manure and litter, which will prove good soil for disease to thrive and breed in unless we get rid of it. Cleanliness in the surroundings of the hog goes a long way in producing thrift and health. Almost all hog diseases are due to germs taken from the surroundings, and, in order to lessen this danger, we must clear away all matter which would encourage the breeding or multiplying of the germs. First, the house or pen should be well cleaned and whitewashed on the inside, care being taken to fill every crack and crevice. This acts as a germ-killer and disinfectant, killing all germs to which it is applied, besides cleaning and sweetening the quarters. Government whitewash, applied hot if possible, is best. Unslaked lime should be scattered over the floor in liberal quantities. After the house is thoroughly cleaned, I go to the yard and clear away every accumulation, hauling it to the fields, to be plowed under.

The yard is then plowed deeply and sown to rye or some other crop. This is a great disease-preventive, as the germs are buried deeply, where it is too cool, and where conditions are unfavorable, for their development. The sweet, pure soil is brought to the surface. As the crop comes on, it will be a big factor in the development of the little pigs, coming, as it does, at a time when it will be of most value. It pays, also, to scatter some lime about the yards. We cannot realize a profit from the hogs unless we take these precautions. Disease is almost sure to break out without them.

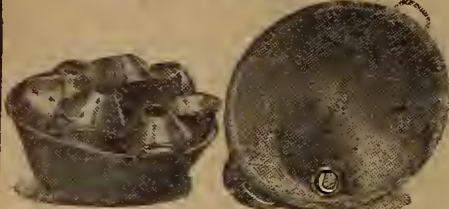


This cow seems to be all right, but has been tubercular for five years



A high milk-producer, but a glance tells you that she is diseased

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The Market Outlook

The Wrong Story

HERE are some figures which were compiled by the Office of Farm Management, United States Department of Agriculture. They tell about my own operations. Perhaps they may be of general interest, and so I am going to give them in full. They are self-explanatory.

FINANCIAL STATEMENT		300 head calves—from October 21, 1910, to December 9, 1911:	
Income—			
July 6, 1911, 134 head, weight 103,250, at \$6.20 hundredweight,			\$6,401.50
July 13, 1911, 100 " " 80,300, " 6.30 " " "			5,958.90
September 18, 1911, 9 " " 8,580, " 7.75 " " "			664.95
September 25, 1911, 16 " " 15,260, " 8.15 " " "			1,243.65
December 8, 1911, 4 " " 4,600, " 9.00 " " "			414.00
December 8, 1911, 15 " " 17,600, " 11.25 " " "			1,980.00
December 8, 1911, 15 " " 18,410, " 11.70 " " "			2,043.51
December 9, 1911, 1 " " 1,140, " 12.25 " " "			139.65
Gross sales,			\$17,946.20
Received as prize money,			90.00
Gross Proceeds,			\$18,036.20
Sale Costs (deducted)—			
Freight, commission, yarding, feed,	134 head,		\$132.50
" " " " " "	100 " " " "		103.50
Marketing costs,	9 " " " "		6.75
" " " " " "	16 " " " "		69.50
Freight, commission, yarding, feed, inspection,	34 " " " "		249.06
Special,	1 " " " "		18.90
Net sales,			\$17,455.99
Purchase Costs (deducted)—			
300 head, at \$20.11 per head,			\$6,347.00
Freight, \$305.50; feed, \$23.80,			329.30
Personal expenses,			30.00
Operating income,			\$10,749.69
Feed Costs (deducted)—			
Corn-and-cob meal, 812,259 pounds, at 57¢ hundredweight,			\$4,629.88
Shelled corn, 2,612 bushels, " 36¢ bushel,			940.32
" " 972.6 " " 40¢ " " "			389.04
Oats, 1,092.4 " " 25¢ " " "			273.10
" " 165 " " 30¢ " " "			49.50
Oil-meal, 1.65 tons, " \$30.00 ton,			49.50
Alfalfa, 195.83 " " 10.00 " " "			1,958.30
Clover-hay, 54.77 " " 9.00 " " "			492.93
Sorghum cane, 8.4 " " 3.00 " " "			25.20
Sheaf-oats, 5 " " 5.00 " " "			25.00
Oat-straw, 14 " " 2.00 " " "			28.00
Salt, 4 barrels, " 1.50 barrel,			6.00
Profit over feed,			\$1,882.72
Labor and Interest (deducted)—			
Man labor, 2,205 hours, at 16 cents,			\$352.80
Horse " 2,317 " " 8 cents,			185.36
Extra labor, fitting for show,			60.00
			\$598.16
Interest on Investment, 9½ months, at 6%,			318.54
Profit,			\$966.22

SUMMARY STATEMENT

Income per head, \$61.35; per pound, \$0.072; per 100 pounds grain,	\$1.71
Cost " " 58.06; " " .068; " " " " " "	1.61
Profit " " 3.29; " " .004; " " " " " "	.10
Income per \$1 worth of feed,	1.12
Average number of animals on feed entire time,	206.7
Total " " " " " "	295
Average " days total number animals on feed,	285
Total " " " " " "	406
Roughage per head, 2,690 pounds; per day, 6.6 pounds.	
Grain " " 5,095 pounds; " " 12.5 pounds.	
Ratio,	1:19
Market price per 100 pounds grain,	\$0.596
Amount received per hundredweight,	.69
" " over market price,	.094

You will pardon me for criticizing the bulletins sent out by the Office of Farm Management at Washington, but what must the average farmer think who picks up the bulletin into which these figures go and reads it? He reads everywhere and hears that above all things every farm should have live stock on it so as to help keep up the fertility, and yet, when he reads the record on the calves fed on my farm, he naturally says, "Well, I don't see anything in that, feed three hundred calves nine months and only make nine hundred dollars' profit." When I agreed to keep records of all expenses in connection with these calves, I thought it might benefit someone. I must say I am disappointed in the way in which these records are to be presented. For to the average farmer they mean nothing. If records had been made of what the farm had done in connection with the calves, such a bulletin would have appealed to every farmer who read it. The year these calves were fed I had sold 150 acres off my farm and bought 160 acres, as I did not get possession of the 160 acres purchased until the next spring. I therefore had that year 308 acres. What did I get from them and what benefits did I receive from feeding calves? Looking again at the above record on calf-feeding, I find that

4,000 bushels of corn fed was raised on farm at 40c.....	\$1,600
Oats raised on farm.....	322
Alfalfa raised on farm.....	1,958
Clover raised on farm.....	492
Sorghum raised on farm.....	25
Sheaf-oats raised on farm.....	25
Oats-bran raised on farm.....	28
Profit over feed, \$1,883, less interest on investment.....	1,564
700 bushels wheat sold for.....	560
	\$6,574

This shows a profit of \$6,574 from 308 acres, with all labor hired and enough oats

and hay in addition to what was fed to keep the horses a year. Now, why do I say \$6,574 profit when there is no account of labor? For this reason: that, in addition to the 300 calves fed, I fed some larger cattle and raised and fed 250 hogs, and these 250 hogs ran on the alfalfa all summer and lived after the cattle during the entire feeding period, and as the corn-and-cob meal mentioned in this record was not ground fine (but little better than cracked), the hogs did well after the cattle and sold for enough to pay the labor-bill and taxes amounting to \$3,000. My own books show a profit that year of \$6,000. In addition to this, please note that the labor mentioned above not only

draw attention to the value of sheep has, from letters received, led us to hope that many farmers are giving more attention to the subject than they have hitherto done. It has so happened that the past season (from causes already pointed out) has been one of great discouragement to breeders and feeders, but the trend of prices, despite occasional checks, has been steadily upward. The prospects for the growing crops of oats, hay and forage are almost everywhere good, and so there seems every ground for believing that the coming season will go far to make up for the deficiencies of the past, if breeders and feeders will take to heart the lesson taught by the wide distance which buyers of all classes seem determined to maintain between the prices they will offer for the highest finished and for even fairly good sheep and lambs. According to reports from all the great markets, this matter of quality becomes of more and more importance every day, as the gulf between the good and the indifferent widens. J. P. Ross, Illinois.

Study the Markets

MORE agitation of the high price of meat is rife in the cities. Yellow journals, none too considerate of the truth, are filling their columns with attacks on everyone connected with the industry, from the farmer to the retail butcher. In some cities mobs have conducted window-smashing raids on retail shops and other rash deeds have been committed. These efforts, like all mob violence, cannot have the effect desired. The prices are the result of the relation between supply and demand and cannot be changed until these change. The supply of live stock is short. The receipts at the market prove it. The price of grain has been high and roughage not obtainable. These, coupled with parched pastures last summer and a very severe winter, have not been productive of a large supply of live stock in the aggregate. At the same time that the supply decreased, the demand increased, as the population became greater. Time is the only cure of the evil.

A resolution to investigate a supposed manipulation of prices by the packers has been introduced in Congress by a Georgia member. The information upon which he bases his argument is one-sided, as the records published in any of the market reports will show. This kind of action by uninformed people places a suspicion on the industry and has no beneficial results. The Georgian's resolution deserves the same fate that befell the investigation of the meat inspection.

The hog-market declined in early June in proportion to the increase in supply and then remained steady and lacking in life. Demand nearly took care of the supply, but on days of heavy receipts many hogs remained unsold until they were needed to fill out light runs.

Quality remained good, and the average weight was well up during May, but early June saw a decline of both, and this is believed to be an indication that the summer run has passed its high mark.

Looking into the future, estimates of this season's pig crop are twenty to twenty-five per cent. below the 1911 crop. The western portion of the corn belt has nearly the crop of last year, while the eastern section, which was devastated with cholera, is decidedly short. In case a good corn crop is harvested this fall, a supply of hogs fully equal to the ten years' average should find its way to the shambles next winter.

LLOYD K. BROWN, South Dakota.
Every little two bits added to the money you have makes a quarter more.

raised the crops and looked after the cattle, but covered 82 acres of land with 12 tons of manure to the acre, for which the calves should get some credit.

It always seems to me these cold-blooded bulletins don't appeal to the farmer.
W. S. A. SMITH, Iowa.

Sell Only the Best

HERE is a remarkable fact gleaned from census returns: Out of something over six millions of farms existing in the United States, two thirds are without a single "golden hoof," while lamb is dearer than either beef or pork. A fairly good flock of ewes should average at least a lamb and a half per ewe every year, with a fleece and the best of fertilizers thrown in. Would that our farmers would think over this as a change from the consideration of the squabbles of Messrs. Taft and Roosevelt. There is more money and less discord in sheep.

Early in June a determined and successful raid was made by the packers and other buyers on the almost prohibitive prices they had been paying for lambs and sheep, and they succeeded in lowering those of wethers, ewes and yearlings \$0.75 to \$1.50. In lambs, top kinds escaped this violent let-down, but the bulk, which included great numbers of unfinished and grassy stuff, felt the full force of the decline. Unless a stop is put to the shipping of these, it is the opinion of salesmen that a serious upset of the market may be looked for. Spring lambs of good finish and "handy" weights still command from \$9 to \$9.75, and the best of old lambs (yearlings), \$8 to \$9. Western wethers sold from \$5.25 to \$5.75 for the very best, while even fair ones went as low as \$4. Best native ewes reached \$5.50, while good breeding ewes could be bought from \$3 to \$4. By the middle of the month the market had become firmer, and buyers disposed to deal more liberally.

The efforts made by the editor of FARM AND FIRESIDE during the past two years to

Don't buy a farm until you have as much to put on the farm as you have to put into it. Don't put all your cash into land.

Sometimes after we get in from the day's work we are so tired that it does not seem as if we could do anything more, except drop down and go to sleep. Often we are glad, however, if we take a turn out around the house and other buildings. A farmer who did this a few nights ago found one of his horses had broken the halter-strap and was marching around the barn. A few moments more and that horse would have been in the feed-box up to his eyes, and then there would have been trouble.

A Scare-Rabbit

THE rabbits had decided to use my vegetable seed-beds for their playground, and every morning when I went there I noticed new places where they had played havoc with the nice young plants. I tried to reach them with the gun, but, as the place about the garden is cleared, all these attempts failed. Then I tried to play a trick on bunny, and it worked. I got some paper bags and some long strings, blew up the paper bags till they were round and full, then tied them well so that they remained that way. A piece of string about a yard long was tied to one end of the paper bag and the other end of the string to a small stake.

Every little wind rolled the paper bags here and there. Since that time the rabbits have disappeared. A. T. PFEIL, Texas.

Live Stock and Dairy

What is "Garget"?

A Thorough Statement of a Disease Which is Little Understood

"GARGET" is merely a common term for udder disease in general, when the consistency or appearance of the milk is changed. It means nothing scientifically. Farmers in the same way apply the term "distemper" to a great many different febrile diseases of horses which lead to discharge from the nose, fever, loss of appetite, abscess formation, etc.

There are several different kinds of "garget." The first simple ailment is a congestion and catarrh of the udder. It corresponds somewhat to simple cold in the head, which does not lead to fever or serious systemic disturbance. But cold in the head, in man, may lead to serious complications, such as bronchitis (catarrh of the bronchial tubes), interstitial bronchitis, in which the tissues surrounding the tubes become involved, or pneumonia, in which the tissues become solid and secretions solidify, after a time liquify again, or come away as pus (abscesses having formed); or the man recovers by "resolution," meaning that the lungs clear up and resume their normal functions.

The udder is affected in exactly the same way. The simple catarrh, when caused by infective germs, becomes parenchymatous or interstitial mammitis (inflammation of the tissues of the udder), then there is systemic disturbance, fever, loss of appetite, emaciation, enlargement and hardening of the udder, pus formation, or gangrene and death, or resolution and recovery. The worst cases are due to infective germs from the floor or spread by the milkers' hands, or by a non-sterilized milking-tube.

Unless promptly and successfully treated at the very start, the cases prove practically incurable; one or more quarters of the udder lose the milk-secreting function, and the cow becomes profitless for dairying. It does not pay a dairyman to fuss with a cow that has lost one quarter of her udder or that has one quarter discharging pus. Such cows should be sold to the dealer for immediate slaughter.

Lastly, it should be remembered that tuberculosis often affects the udder and causes apparent "garget," but in this disease the affected quarter always loses its function and becomes large and "hard as wood." Such cows are highly dangerous to man and cattle, hogs, etc. The milk conveys the disease.

Isolate a cow the moment she has anything wrong with her udder and milk her last. Poulitice the udder with hot oatmeal porridge in a wide bandage without holes being cut for teats. Twice daily rub well with a mixture of equal parts warm melted lard and fluid extract of poke-root and belladonna-leaves. Give a pound dose of Epsom salts in three pints warm water as one dose, follow with a half ounce of fluid extract of poke-root and two drams of saltpeter three times daily in water.

A. S. ALEXANDER.

Some farmers have to have the hogs out in the fields part of the winter. The coldest part of the pen is at the door. A door hung on wires and so fastened that it swings either way allows the hogs to enter and the door to immediately swing shut.

Reliable Commission Houses

DURING the past two years, FARM AND FIRESIDE has furnished many of its readers, through its Service Department, with the names of commission concerns that have a high standing for square business dealing and strong financial rating. This information has gone to FARM AND FIRESIDE subscribers in practically every State and section of the country, and in no case has there been complaint following dealings with the concerns recommended.

The importance of shipping produce only to reliable, trustworthy commission dealers needs no comment. Nevertheless, farmers continue to send produce to houses of which they have no knowledge as to their trustworthiness.

When asking for this service, name the cities containing your best markets and the produce to be sold.



A good-sized family

The Boar Needs Care

THE boar is too often the most neglected animal on the farm at this season. This should not be. He needs such care as will put him in the best possible physical condition for this fall's service. That the boar is partly responsible for so many small and unsatisfactory litters is not to be denied.

About the best place for a boar during the summer and early fall is a small, shaded pasture where he can get plenty of green feed and exercise. He needs company, too, and should have at least one quiet, pregnant sow to run with him.

For grain feed, he needs such that will keep him in vigorous condition. Of course, corn alone is too fattening for any breeding-animal. However, we have no objection to it furnishing a large part of the ration for our boar if we have meat-meal or some other protein concentrate to go with it.

The boar is just as likely to become infested with lice as are the other hogs. Yet most old boars are too large for the dipping-vat. The dip can be applied with a broom and is just as effective as dipping.

H. E. McCARTNEY.

Keeping Horses Sound

THE farmer who has good horses and keeps them in good working condition always has good stables for them. In fact, if you look into a man's stables, you can judge pretty nearly as to what kind of a horse he owns, without ever seeing the animal. Many men are poor and will remain poor by having to purchase a horse or team every year for necessary farm work. They have "bad luck," they say, with their horses, but it is usually laziness more than anything else.

The horse-stable need not be a parlor, yet it can be easily and cheaply made comfortable and convenient, as well as safe.

If the stall is built so that the horse can get his head or legs under the partition or other immovable parts of the stable, he will surely be injured. The stall should be tight around the base, and the floor should be smooth and firm. A solid raised earth floor is about as good as any.

A good manger of medium height and depth with a good grain-box at the side will aid the horse in securing all the feed given and thus prevent waste.

The sensible horseman will provide his horses with plenty of good, dry bedding at all times of the year when they occupy the stables. The horse that works hard all day must be very tired at night, and whether he lies down or stands up during the resting period, a deep bedding of dry, clean straw will enable him to rest more perfectly. Hence he will be in better condition for the following day's work.

Plenty of windows and ventilation in the stall are also necessary. The horse is a lover of fresh air. Be sure to provide his stall with it.

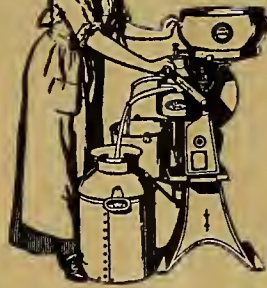
R. B. RUSHING.

DE LAVAL CREAM SEPARATORS

Best Time To Buy One

There never was a better, if indeed as good, a time to buy a DE LAVAL Cream Separator than **right now**.

The hot weather is at hand when the use of the cream separator frequently means most as to quantity and quality of product, while cream and butter prices are so very high that waste of quantity or poorness of quality means even more now than ever before.



This is likewise the season when DE LAVAL superiority is greatest over other separators,—in capacity, ease of running, sanitary cleanliness and every other way!

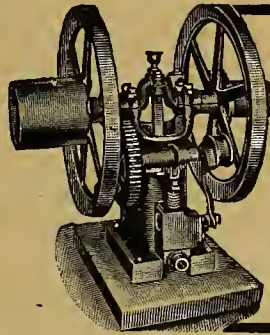
Cost need not be a consideration because a DE LAVAL cream separator is not only the best of all farm investments but may be bought either for cash or on such liberal terms as to actually pay for itself.

There never was a better time than right now to buy a cream separator and there can be no possible excuse for any man having use for a separator delaying the purchase of one at this time.

Look up the nearest DE LAVAL agent **at once**, or if you don't know him write us directly.

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So says Professor Thomas Shaw, agricultural and land expert—recognized authority on subjects having to do with farming.

"No land excels it in richness of elements of plant food"—he said in speaking of the great Red River Valley. Lands can be had here for \$25 to \$40 an acre. In the Missouri Valley also, he affirms an exceeding richness. Of the sections being opened up by new branch lines of the Northern Pacific, as indicated on the map, he said: "What pleased me most about this country was the character of the soil—it would be hard to find a better." And yet this land can be bought today for from \$10 to \$25 an acre.

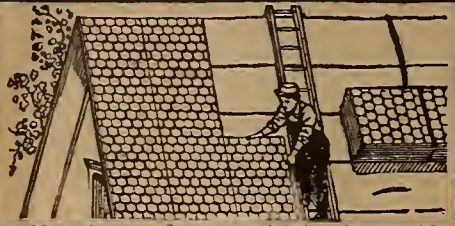
North Dakota's population increased almost 81% in the last census decade—yet there is plenty of room for more. Write today for literature and particulars of low round-trip Homeseekers' Fares in effect on 1st and 3rd Tuesdays of each month. Address

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Northern Pacific Railway

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We agree to refund the amount paid in every case where a roof covered with Edwards Interlocking Galvanized "Reo" Steel Shingles is destroyed by lightning. This guaranty is backed by our \$10,000 Ironclad Bond and stands forever. Ask for Big Free Roofing Catalog No. 758 with special low prices. Freight prepaid from factory. Send dimensions of your buildings and we will quote you cost. Write today.

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Largest Manufacturers of Sheet Steel Building Material in the World [79]

Poultry-Raising

What are Trap-Nests Worth?

THIS is an age of progress. Old methods, old ways, are constantly giving way to the new. The rural mail delivery, the rural telephones, the interurban, the automobile, wireless telegraphy, the flying-machine—all are living witnesses to the progressive age in which we now live. In whatever direction we turn, whatever profession we may enter, there we find the mark of the hand of progress, and woe to that person, whatever his calling, who does not recognize this progress and keep abreast of the times.

The poultry industry is not falling behind in the procession. However, the supply of poultry and poultry products does not keep pace with the demand. Prices are steadily on the increase, and herein is the poultry-breeders' greatest encouragement. I have heard my grandfather tell of selling eggs at two cents per dozen here in New York. Compare with this the present market prices.

The trap-nest is a vital need of the twentieth-century poultryman. Every new method or new invention must pass through a period of criticism or probation and be thoroughly tested in its workings and results before it is accepted by the general public. The trap-nest has been in practical use for several years and is now being accepted by the breeders and the press everywhere as an essential to poultry breeding of the best sort.

Why does the trap-nest hold such an important place in the poultry world? The

whole secret of its value is told in these words, "It shows which hen laid the egg." It picks out the 300-egg hen, the 200-egg hen, the 100-egg hen, the 50-egg hen and the drone. It makes it possible to build up a good laying strain in a very short time. It picks out the winter layers. A hen may lay well in the spring and summer, but stop when winter comes. With the trap-nest a good strain of winter layers may be built up. It enables one to get acquainted with each individual hen. The frequent handling, in removing the hen from the nest, tames her, and it is the tame hen that is the paying hen. By frequent handling, the breeder will know when anything goes wrong with the hen, and remedy it. It prevents egg-eating, as the egg-eater is easily detected and killed. The frequent handling and removing from the nests discourages broodiness. It picks out the hen that lays the white egg, the brown egg, the yellow egg, the infertile egg.

The trap-nest picks out the hen that raises the best chicks. Not always the highest scoring hen raises the winning chicks. With the trap-nest a breeder can study the results of his matings with each hen. He may have a pen of ten hens and all the advantages of a pen of one hen. The trap-nest is the only practical way that a breeder can pedigree his stock. The day is surely coming when poultry will be pedigreed as is other thoroughbred stock. While most breeders prefer the incubator to the sitting hen, the trap-nest comes as a boon to him who has the care of sitting hens. They may be placed in a building away from the laying hens, removed once a day for feed and water, and when they return to the nest, they shut themselves in. Trap-nests have come to stay.

A. E. VANDERVORT.

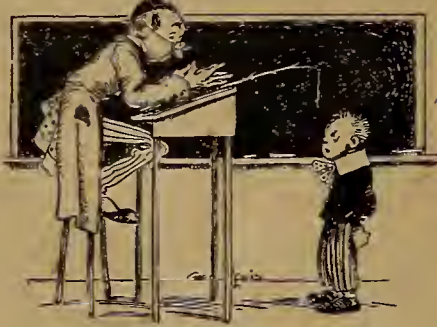
Never sell your best hen, horse, cow or pig at any price, for you need them right on the farm.

The time is here when eggs should not be kept very long. Take them to market twice a week.

A few neighbors in one locality have clubbed together to ship their eggs and such things away to a reliable city salesman, and their returns are very satisfactory, cash right in hand, and a good lot of it, too, so far as that branch of marketing is concerned.

Now is the time to take note of the hens that have been especially successful in brooding and rearing chickens. Mark them so you will know them and keep them over for another season, even if they are not much of a success as egg-producers. Next spring, when you want some reliable "clucks," you will know which ones to trust with eggs.

His Illustration



TEACHER—"What are the different effects of heat and cold?"

ICHABOD—"Heat expands; cold contracts."

TEACHER—"Correct, give example."

ICHABOD—"In summer when it's warm, the days gits to be very long. In winter when it's cold, the days gits to be very short."

TEACHER—"Very good, Ichabod; you may go to the head."

Blackhead in Turkeys

ONE fall I bought a lot of turkeys and put them with my own to supply my market, as I was short with turkeys of my own. Soon after several refused to eat, and would stand around by themselves, but they did not seem sick, as far as their looks were concerned. Then they began passing yellow dung and refused to eat at all, but drank a large amount of water. Some of them would have a sort of fit when they tried to walk. The turkeys lived about two weeks after being first taken sick. Upon dissecting them I found the following symptoms: The liver was greatly enlarged, quite solid and full of yellow lumps. The gizzard seemed very dry, and the contents were solid but natural. The crop was very large and full of water.

After studying and looking up the case, I learned that it was a contagious disease called blackhead, caused by a micro-organism which invades the mucous membrane of the intestines and affects the liver. The only way I satisfactorily got rid of the disease was to dispose of all the turkeys I had that fall. Then I top-dressed the land they had access to and plowed it in. The next spring I started anew, buying eggs and stock from flocks I knew were healthy, and I have not been troubled with blackhead since. A number of remedies have been recommended for the cure of blackhead, but none have proved satisfactory.

A. E. VANDERVORT.

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Black Steel Tank, 145 gallon capacity, 2 1/2 inch Brass Lined, Double Action, Combination Air and Water Pump, including all Pipe, Fittings, Valves, Gauges, etc.

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We will save you 30 to 60 per cent on a modern Steam or Hot Water Heating System. Heating Plants complete for modern homes all the way from \$50 up. By following our simple plans and instructions, you can install your own material, thus cutting out the expense of Plumbers and Steamfitters.

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More actual engine for your money—extra working power—a reserve strength for extra loads—an engine that does the job and does not get stuck—these are some of the features that make our engines different from the common run. Workmanship and design, too, following the most approved practice for highest grade engine manufacturing, with many exclusive features added, distinguish the

Jacobson Gasoline Engines Hopper-Cooled Type

You can depend upon getting fully one-third more working power than in other engines of equal rating. Simplicity, too, and strength—an engine the non-expert can run without fear of breakdown.

If you want satisfactory, dependable power that will run day in and day out at lowest known cost, write for prices and information.



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Big Dairy Farm With Fine Herd Included \$3000

Very liberal terms will be made to a responsible man who wants to take hold of this fine 106-acre New York dairy farm with a splendid herd of 15 cows, 3 yearlings and a Holstein bull included; spring-watered pasture carries 20 to 40 cows, 40 acres machine-worked fields, thriving orchard, some timber; 2-story 8-room house, 30 x 40 basement barn, 22 x 45 cow barn, new cement hog house 26 x 16; only 1 1/2 miles to R. R. Station and village, 1/4 mile to milk station; owner a physician wishes to move immediately to city; \$3000 takes all, liberal terms. For traveling directions to see this rare bargain, see page 24-S, "Strom's Farm Catalogue 35," copy free. Station 2899, E. A. Strom Farm Agency, Union Bank Building, Pittsburg, Pa.

Don't Cut Out A SHOE BOIL, CAPPED HOCK or BURSTITIS FOR ABSORBINE

will remove them and leave no blemishes. Cures any puff or swelling. Does not blister or remove the hair. Horse can be worked. \$2.00 per bottle delivered. Book 6 E free.
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The King Air-Rifle is a repeater. It shoots 150 times without reloading. It is strong, durable and shoots accurately. It cultivates trueness of sight and evenness of nerve.

These fine air-rifles are provided with pistol-grip, true sights, and are so strongly made that it is almost impossible for them to get out of order.

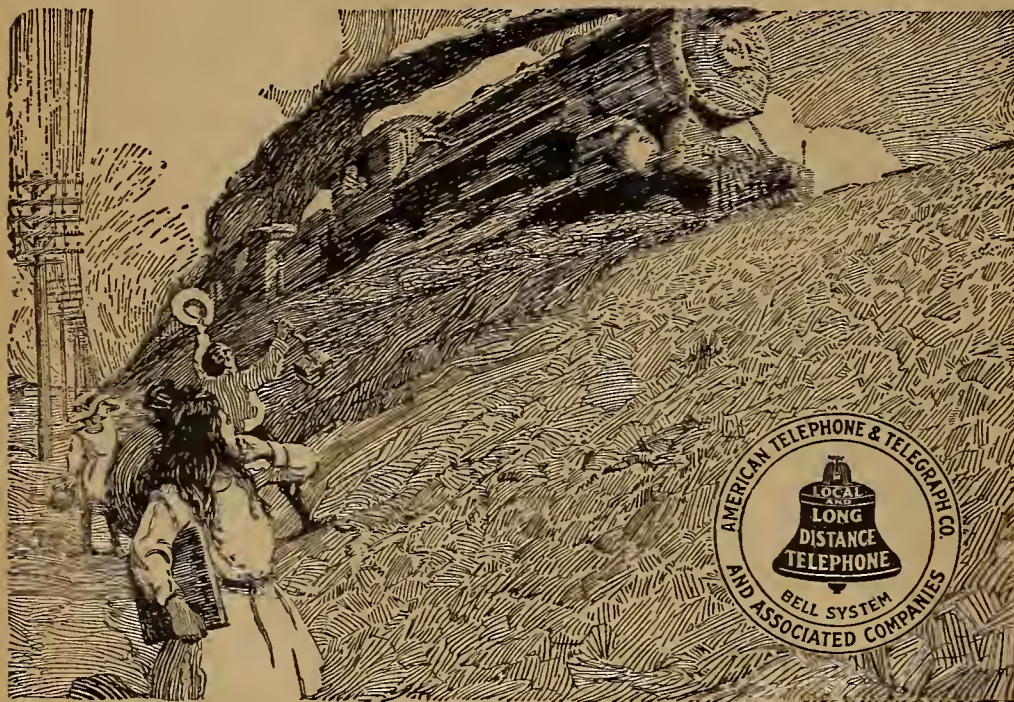
Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle. Get your subscriptions at once and send your order in early.

This rifle is harmless. It uses no powder—just air. There is no smoke, no noise. Air is plentiful and shot costs but 10c for \$1,000.

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Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.

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



The Right of All the Way

Railroad service and telephone service have no common factors—they cannot be compared, but present some striking contrasts.

Each telephone message requires the right of all the way over which it is carried. A circuit composed of a pair of wires must be clear from end to end, for a single conversation.

A bird's eye view of any railroad track would show a procession of trains, one following the other, with intervals of safety between them.

The railroad carries passengers in train loads by wholesale, in a public conveyance, and the service given to each passenger is limited by the necessities of the others; while the telephone carries messages over wires devoted exclusively for the time being to the individual use of the subscriber or patron. Even a multi-millionaire could not afford the exclusive use of the railroad track between New York

and Chicago. But the telephone user has the whole track and the right of all the way, so long as he desires it.

It is an easy matter to transport 15,000 people over a single track between two points in twenty-four hours. To transport the voices of 15,000 people over a single two-wire circuit, allowing three minutes for each talk, would take more than thirty days.

The telephone system cannot put on more cars or run extra trains in order to carry more people. It must build more telephone tracks—string more wires.

The wonder of telephone development lies in the fact that the Bell System is so constructed and equipped that an exclusive right of all the way, between near-by or distant points, is economically used by over 24,000,000 people every day.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

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Garden and Orchard

Do Orchards Need Fertilizers?

AT NO time has there been greater interest in fruit-growing than at present. Progress has been rapid during the past fifteen years. It has been possible to make observations for a series of years in regard to results obtained in many orchards throughout the country under widely varying conditions. It is becoming more and more apparent that the proper development of both tree and fruit is largely determined by the care given the orchard; and special attention is, therefore, being given to a study of the four great problems of every orchard: pruning, spraying, cultivation and fertilization.

The question of the proper fertilization of an orchard is probably the least understood. It is imperative, if the best results are to be secured, that there be no lack of available plant-food of any kind, whether it be nitrogen, phosphoric acid or potash. Does the apple require one kind of fertilizer, the pear another, and each different fruit a distinct fertilizer? In what form, in what amount, at what time and in what manner must this fertilizer be applied? Will a given formula which has proven best for one apple-orchard be equally efficient in another apple-orchard? Do the factors of environment such as temperature, moisture, physical character of the soil, the natural fertility or amount of humus affect in any way the results of fertilizers? Will different varieties respond alike to the same application?

Who is ready with facts and figures to fully answer these queries?

There are many fruit-growers who apply annually large amounts of fertilizers, because they believe such applications are necessary. It is a common practice. In these times, however, when competition is keen and the margin of profit growing smaller, economy of effort and of expense must not be overlooked at any place. During the past few years, a number of orchardists have been asking themselves the question, "Do I know that I am getting value received from the application of fertilizers to my trees?" Their answers are most interesting and are worthy of careful study. Care must be used, however, in interpreting their results, and it is right here that much confusion and misunderstanding has often arisen.

The New York Agricultural Experiment Station has made a study for many years of the apparent value of fertilizers, not only in their own orchards at Geneva, but in other orchards in the State, publishing the results from time to time, the last report being contained in Bulletin No. 339, issued July, 1911, entitled "Is It Necessary to Fertilize an Apple-Orchard?"

Do You Know Your Farm?

In some quarters there has arisen an erroneous impression in regard to just what lessons this bulletin would teach regarding the use of fertilizers in apple-orchards, some going so far as to assert that most sweeping statements are made, and that the only conclusion reached is that fertilizers are thrown away when applied to all apple-orchards. A careful reading of the bulletin, however, will at once show that no such conclusion is reached. The failure to secure any appreciable results in a fifteen-year fertilizer experiment—through the use of fertilizers—raises at once the question of whether there may not be other orchards to which fertilizers are being applied with no results. It has absolutely nothing to do with those orchards in which fertilizers are showing results, in fact the statement is made that it may be necessary to fertilize some apple-orchards, but great stress is laid, and properly so, on the importance of each fruit-grower obtaining positive evidence by experimentation as to whether his orchard really needs fertilizers.

It may be of interest to some of the readers of FARM AND FIRESIDE to set forth briefly a summary of the facts in connection with the experiments in a study of the use of fertilizers in apple-orchards by the Geneva Station. The full details may be obtained from the bulletins.

For five years experiments were carried on testing the effects of potash on trees on the station grounds, forty-three years old, of Baldwin, Greening, Fall Pippin, Roxbury Russet and Northern Spy, using one hundred pounds of wood-ashes per tree; then, for seven years following, in addition to the annual application of ashes, was applied acid phosphate at the rate of four hundred and eight pounds per acre. Check plots were left in all varieties. After twelve years the results were practically negative in yield and color of fruit and in growth of the trees.

In a fertilizer test by the station, in another county, there appeared to be no benefit in any way through the use of either potash or phosphoric-acid fertilizers in a ten-acre Baldwin orchard thirty-three years old.

Lastly, is the fertilizer experiment as described in Bulletin 339. In this experiment, the main question was, Will the addition of

nitrogen, phosphoric acid and potash influence in any way the vigor, health or productiveness of the trees, or the color, size and quality of the fruit on the soil at the Geneva Station? The variety used was Rome top-worked on Ben Davis, set in 1896. To secure uniformity, all buds came from one tree. The sixty trees were divided into plots. The fertilizers applied each year were as follows:

First Plat: Stable manure, about 415 lb per tree.

Second Plat: Acid phosphate, about 12½ lb per tree.

Third Plat: Acid phosphate and muriate of potash, about 12½ lb and 7 lb per tree.

Fourth Plat: Acid phosphate, muriate of potash, nitrate of soda and dried blood, about 12½ lb, 7 lb, 3½ lb and 12¼ lb.

Fifth Plat: Check—no applications.

Notes were taken for each tree in regard to diameter of trunk, color and weight of foliage, length and weight of the annual growth of the branches and productiveness. The fruit was considered with reference to size, color, flavor, time of maturity, texture of flesh and keeping quality. Up to 1910, there was no apparent difference in any of these characters. In 1910 slight differences were noted where nitrogen had been applied. These, however, were not marked.

In summing up the results, Professor Hedrick, the author, calls attention to the fact that the experiment is not finished, but that up to the present time the results indicate that this orchard appears to need but little, if any, commercial fertilizers and that we have reason to suspect that some other apple-lands may need but little, if any, commercial fertilization if the trees and the soil have the proper attention in other respects. Emphasis is laid on the fact that this can only be determined by experimentation, and the bulletin closes with suggestions as to how the orchardist may carry on a fertilizer experiment for himself in his own orchard, following the general plan in the use of fertilizers as already outlined in this experiment. It is not expected that the best methods will be the same on different farms; too many conditions are involved to make this possible. As the environment must vary somewhat in every orchard, it is, therefore, necessary to make a special study of each one's conditions and be governed accordingly.

Surely, these conclusions which have been briefly set forth are not radical nor revolutionary. There is far too much guesswork or indifference or lax methods among many growers. If results appear, then continue the use of commercial fertilizers, but if results fail to develop in any way after trial for a series of years, then it surely would appear as if we were wasting our time and money in their continued use in such a manner.

O. M. TAYLOR.

Clean up and repair the orchard this fall by cutting out and removing all dead trees and limbs, making a note of the varieties thus removed, so they can be replaced next spring.

After a hard wind we look out of the window and see an old family apple or pear tree split down on one side. -Wouldn't have taken \$25 for it, you say. Better put a couple of strong wires around the biggest forks of that tree now.

Summer Pruning Raspberries

A VERY profitable summer job and one which it is not well to neglect is the pruning out of all the old wood and canes which have borne the present year's crop. Many people think that if the spring cultivation is attended to and the crop harvested that their work is ended, but this is very untrue. Many fully realize the importance of pruning, but, as there are so many other calls upon their time at this season, they neglect to attend to it. I have found that it does not pay to neglect this work. These old canes will never bear again and are therefore useless and unnecessary. The dry season is at hand, and the plants will have all they can do to properly grow and mature the young canes for the future crop without being burdened with the task of nourishing these extra canes. Once rid of these useless canes, the plants can direct their entire force toward the growing of the new canes, and it is obvious that the result will be hardier plants and greater future yields of fruit. It takes a plant of extraordinary vitality to grow a good crop of fruit, mature new canes and maintain the old ones during a very dry season. Help it along by cutting out the old canes, the useless and superfluous wood. If you haven't time yourself, it pays, and pays well, to hire it done. Do not be guilty of doing anything but a thorough job. After cutting out the old canes, burn them, not only to get them out of the way, but to get rid of any insects or disease spores with which they may be infected. I find the best time to attend to this job is as soon as the fruit has been picked. Then it is easy to distinguish the old canes from the new. There is no reason for delaying a process which is so beneficial to the plants. Try it; I am sure that you will agree with me that it pays.

C. J. GRIFFING.

Pruning Safely

ALTHOUGH it is a simple matter to prune trees in such a way that the wounds will soon become completely calloused over, huge, ugly knots and rotten holes mark the spots where limbs have been removed from most trees. Fig. 1 is a photograph of such a tree at my home.



Fig. 1

By following proper methods I have found it easy to avoid such conditions. In removing the limb, a narrow-bladed saw is used, and the cut made close and parallel to the main branch or trunk from which the limb is being sawed. Fig. 2 illustrates the proper method of making the cut.

There is always an enlargement at the base of every limb, and this is removed with the limb, not left upon the tree. There is always a temptation not to remove this bulge, because by so doing the size of the wound is increased. The extra size is more than made up for, however, by rapid healing. Any wound such as these is healed by the sap flowing up and down the tree. This sap passes as directly as possible from the roots to the leaves. It does not readily pass out to the end of a leafless stub or enlargement, and hence healing there is slow or does not take place at all, as was the case with the tree shown in Fig. 1.



Fig. 2

Fig. 3 shows a callous grown in a single season upon a young elm which was properly pruned. The crease in the center of the callous tells that healing proceeded rapidly inward from the sides, past which the sap flowed, and hardly at all upward from the bottom, where the sap-flow was stopped by the wound above.

While it is easy to see how this work should be done, it becomes difficult to carry out the ideas where large limbs are to be removed, because the great weight breaks and tears the wood when the cut is but partly made. In such a case one cut is always made first from the bottom upward. This prevents the limb from tearing down the bark and injuring the inner bark, from which healing proceeds. The best method is to make this first cut a few inches out from the trunk of the tree. Then another cut is made, sawing down from above at the same point until the limb breaks, leaving a short stub. A second cut is then made close to the tree without the trouble due to extra weight. Where one has not the time to do this, the first cut is made upward close to the tree, and a notch removed at this point just as a woodman notches a tree before he saws it down. The cut is completed by sawing down from above close to the tree. These methods are expensive, but may save costly jobs of tree-surgery in valuable trees.

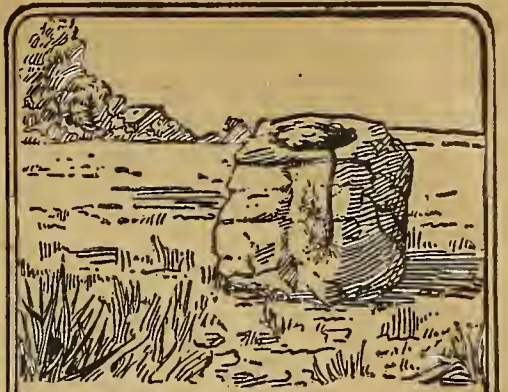
Where large wounds are made, it is a good plan to paint the spot with thick white lead. If the callous does not cover the whole wound in one season, rewounding the inner side of the callous ring in spring makes it grow more rapidly during the following season.

GEORGE F. POTTER.

Chores, chores, chores, with no swimming, no fishing, no Saturday baseball, have driven lots of boys off the farm.

A good sprinkler for use on the hotbeds and garden plants should be at all times available.

Ask a country boy the local name of any bird that you see, and he can tell you. To the city boy it is only a mark to shoot at. The other day I met three tiny lads, all armed with small rifles, with a dead "Bob White" slung on one! Thus do the city dwellers kill the farm's best friends.



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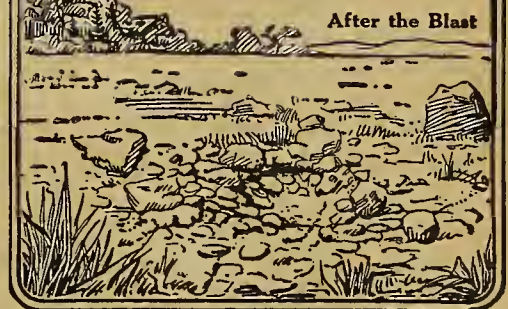
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GARDENING

By T. GREINER

Fighting Insect Enemies

THE various insects that the gardener now has to fight everlastingly may be classified in several groups, according to their feeding habits. Some bite. They have mandibles, which take the place of teeth. These insects eat the substance of leaf, stalk or fleshy root, just as a cow eats clover in a fresh pasture, only in most instances much faster, according to their comparative sizes. Among the leaf-eaters, we have green currant-worm, green cabbage-worm, cabbage-looper, yellow-striped cucumber or squash beetle, potato beetle and slug, rose-chaffer, tomato-worm, asparagus beetle and slug, and others of more or less importance. Members of this group are readily disposed of by the free and intelligent use of poisons. Most of them we can get with arsenate of lead, from two to three pounds to fifty gallons of water, or other spray liquid. For the green currant-worm, which is most destructive on gooseberry-bushes however, we prefer to use white hellebore, one tablespoonful to the bucket of water.

Another group of insects lives on the juices of plants. They suck their food in much the same fashion as the customer at the soda-fountain sucks his soda through a straw. Among these we have first of all the various plant-lice or aphids, the various scale-insects, the large black squash-bug, and others. These can only be killed by contact remedies, such as tobacco tea, kerosene emulsion, lime-sulphur solution, etc., or, as the black squash-bug, by hand-picking.

One group consists of insects that gnaw their way into the stalk or fleshy root of plants, despoiling and befouling the tissues that we calculated to feed on ourselves, or injuring and killing the plants altogether. Among them we have the root-maggots of the radish, the onion, the cabbage and allied plants, as also the bean and pea weevils. It is easy enough to get rid of the weevils by treating the freshly gathered seed (beans or peas) with carbon bisulphid, but more difficult to protect our crops from maggot attacks. The free use of tobacco-dust around the plants, or frequent and thorough spraying with strong tobacco tea, will help some. After a while, I think we will yet learn how to catch the fly which lays the eggs from which the maggots hatch, and thus stop the trouble in the beginning.

Hedge-Row Crops

For thoroughly subduing an old hedge or fence row, or any rough spot on the grounds (and we have such occasionally), I know of nothing superior to potatoes. The violent stirring of the soil in planting and digging, and the thorough cultivation between these two end periods, work wonders in getting rid of weeds and rubbish and in getting the spot in tillable shape. There may be other crops, but my choice is potatoes.

Spraying Potatoes

During the past ten or a dozen years I have been spraying my potato-vines with Bordeaux mixture, made in some years with soda in place of lime, in others with the regular standard mixture, and for some seasons also with diluted lime-sulphur mixture (commercial), in each case, of course, with lead arsenate added. I have thus saved the plants from serious injury by flea-beetles and potato "bugs." We have not been troubled much with blights. Now, after the New York Experiment Station at Geneva has made comparative tests of these various spray mixtures, and comes to the conclusion that lime-sulphur applications, even when made quite weak (1 to 40), have

a tendency to dwarf the vines and reduce the yield, I think I will have to fall back on our standard Bordeaux mixture, four pounds of copper sulphate, four pounds of lime and fifty gallons of water. To combat potato diseases, it might perhaps be advisable to use the mixture in even greater strength (6-6-50). By all means use the best stone-lime obtainable, and screen the mixture thoroughly before attempting to spray with it. The main thing, however, is to use arsenate of lead, three pounds to the fifty gallons, and if you cannot do better, apply it in plain water. The "bugs" must go!

The Green Onions

It was a hard winter, but it was not hard enough to kill out our Vaugirard and White Portugal onions. In one patch every onion came out alive, and we are now pulling or digging them for sale and the table. At the time of this writing I can find only green bunches of the Egyptian or winter onion (which I do not consider good enough for my own eating, and therefore do not raise) in the markets around me. The white sweet little bulb onions, which I raise so easily by sowing seed thickly in rows (a foot apart) the last of July or first of August, "go like hot cakes," and people often tell me they are willing to pay any price for what they want of them, within reason. Get ready for sowing at least a few ounces of the seed in your home garden. I shall try sowing a little of it this year as early as soon after the middle of July.

A Beautiful Blooming Shrub

One of the finest things we have on the place among early-flowering shrubs is the double-flowering Japanese almond. It is, however, not a very vigorous grower. Its very attractiveness, on our premises, leads to its undoing. We have given to neighbors, and especially school-children, the privilege of using a short cut through our place from one street to another, and many of those who pass cannot resist the temptation of breaking a twig or branch and taking it along. After a while nothing but bare stubs are left as a reminder of the neighborly visits. When I plant another, it will be a little out of the way of the main thoroughfare.

A Suburban Crop

The suburbanite who has a piece of spare ground and water privileges (from city hydrant) would have to look long and close before he could find a crop more promising in the way of a little extra revenue than celery, unless it be celery and cabbage plants. Celery can be planted in double rows, with six inches of space between, and three feet space from double row to double row. This would give ample space for six thousand plants on an ordinary city or village lot (of about one-eighth acre), and the celery could be gradually blanched by means of fifteen hundred feet of foot-wide boards, and any old boards would do. But, to grow a good crop, it needs a good lot of rich old manure, possibly fertilizers in addition, and a never-failing supply of moisture in the soil. The hydrant insures the latter. The sales to neighbors and near stores might easily run up to an aggregate of two hundred dollars.

Small vs. Large Plants

Tree-planters are beginning to discover that a young tree of medium size and strong build is more to be relied on for good orchard results than an overgrown tree, or a tree three, four or more years old. They do not pick for size any more. Only the inexperienced amateur is apt to do that. Neither is it wise to pick for large size in tomato, cabbage, celery or other vegetable plants. The large celery or cabbage plant is more liable to wilt and slower to take new hold of the soil than a smaller plant. Celery-plants especially, while yet quite small, are not particularly sensitive to the ordeal of transplanting, much less sensitive than when they get older. In buying plants, always try to get those that are just of medium size, strong and stocky. They are the ones liable to give you the best satisfaction and best results, although, of course, some who have plants to sell will talk differently.

The California Privet

As a hedge-plant, the California privet has hardly a peer, but the past two very severe winters have shown that it is not of iron-clad hardiness, and should not be relied on too strongly for our northern climate. The winter before last gave to the privet hedges around here, even in some protected spots in the city of Buffalo, a serious setback, and I now find the plants, some of them of ten or a dozen years' planting, killed to the root. What to plant? Perhaps the barberry. It is at least hardy.

One of the handiest articles around the desk is the letter-file. Its cost is not over fifty cents, and some cost only a quarter. There are spaces enough for hundreds of letters, and they are indexed so that any may be easily located.

Some Grape Enemies

In some places the rose-chaffer is very troublesome, feeding on the grape-blossoms and later on the leaves. They cling tightly and tenaciously to the vines, but there is a chance to dislodge and kill them by spraying the vines at the time they begin to blossom, and again a little later, with a solution of eight pounds of arsenate of lead and two gallons of cheap molasses in one hundred gallons of water. Never use Bordeaux mixture for this, as the beetles do not like it. They like sweets, and will readily take the sweetened and poisoned water. They only breed in sandy soil.

Where they appear in a locality where the soil is generally a strong loam, the breeding places may be found on some sandy knoll in the vicinity, and the insects may to some extent be controlled by plowing such sandy spots in spring, and harrowing repeatedly with a spring-tooth harrow set deep.

Another grape pest is the grape root-worm which, in the grub stage, feeds on the little rootlets of the vine and often kills out whole vineyards. The parent of this grub is a beetle which, during the latter part of June and early July, feeds for ten days or so on the grape-leaves, making chainlike markings in the leaves. By spraying with the arsenate-of-lead solution, six pounds to two gallons of cheap or stock molasses and one hundred gallons of water, applied at this time and before the beetles have had much chance to lay their eggs, the beetles can be killed, and this procedure, where the beetles appear, should not be neglected.

Going to enjoy heaven after while? You won't unless you get in practice now.

The mistakes of one farmer may save the whole neighborhood from going wrong.

If our fathers should come back among us, one of the first questions they would probably ask us would be, "Why have you forgotten how to visit?"

Looking Backward

WHAT a great difference there is between agricultural work and thought of to-day and no longer ago than 1860.

I have in my possession several early copies of farm papers. FARM AND FIRESIDE, of course, is among them. As good as some of them were, they failed to keep after the slothful as they do to-day.

Agricultural chemistry was discussed, and nearly all by one means or another tried to show chemistry's inestimable value, but not with the confidence and scientific backing they do now. Two of the papers devoted much space in showing on what the process of vegetable growth depends and asserted that "the farmer has the power to stimulate the perpetual assimilation of various substances by assisting the plant to obtain light, heat and moisture." To-day our press would add "air" to the list.

In these copies I do not see any reference to a perfect-tillage before planting, but much about thorough cultivation after planting.

The western method of raising and selling is deplored. One paper calls it "borrowing from your children," while several editors refer to the supposed exhausted fertility of lands in several of the older States. I say "supposed," as those same lands have since been brought into a good, fertile condition by the use of material which unlocked the stored elements that were not in proper form for the plants' use. Every farm paper to-day is telling how it was done and how easily others may do it in 1912.

One paper, published in 1862, devotes considerable space to the reduction of productive industries by the Civil War and "how little agriculture in the North had been embarrassed by the march of armies."

Another speaks of labor to be introduced from Europe. How "every acre of our fertile soil is a mine which only waits the contact of labor to yield its treasures. Every man who comes adds in many ways seen and unseen to the country's wealth and power."

They came. With our native folks they have overcome the difficulty encountered in clearing the land, in bringing it under the present state of cultivation and in helping settle the Indian questions until that "fertile soil" so "like a mine" has been nearly all sold or given away. As our agricultural papers reason to-day, extensive farming is now the order, and with the great change in tools, the introduction of gas and steam for the human muscle, the mixture of brain and capital, the farmer can be expected to do greater things.

Although a laborer, the farmer is more highly estimated than he was fifty years ago. He is now estimated as he himself cherishes his employment. H. L., Wisconsin.

The big things of the farm are hard to handle where the little things have been long neglected.

Some men seem to go on the principle that it is necessary to do a lot of blowing in order to keep the fires of hope burning.

Only the bald-headed man can sympathize with the horse in fly-time. Buy a good fly-net, even for neck and ears, and save the wear and tear on the horse.



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Farm Notes

Handy Wagon-Jacks

THE diagrams represent six of the most convenient wagon-jacks; exact specifications and minute directions are not necessary, as any farmer can determine for himself the kind of material to use and the best way to make a jack for his particular requirements.

The ease of adjusting to suit the height of the object to be raised will commend the jack in Fig. 1. Use for the base piece a 4x6-inch scantling, five feet long, making the notches on one of the flat sides, reaching about half the length of stick; the two uprights holding the lever are three feet long and notched on the front; the brace which rests in the notches on the base sill is made long enough to suit a low-down wagon, when resting in the front notch; the lever is 4½ feet long. The illustration shows plainly how the wagon is held when once lifted; the entire device is held together by five bolts.

In Fig. 2, a 3x6-inch plank does for the sill, and the uprights may be inch boards, 5 inches wide at the bottom, tapering to 3 inches at the top; the lever is adjusted to



FIG. 1

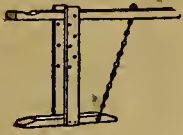


FIG. 2



FIG. 3

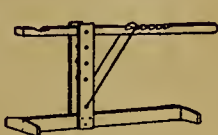


FIG. 4



FIG. 5



FIG. 6

the height of the wagon by the holes in the uprights; a short chain, fastened to the sill, is hooked to the staple or eye-bolt in the lever to hold it when desired.

Fig. 3 is about the same, but the attachment for holding the lever at any point desired is an improvement on the chain; the blacksmith can make this from wagon-tire; an inch strip of the same material is fastened across the uprights for the bar to catch on.

Fig. 4 is very simple. The upright pieces are 1½x3 inches, 3 feet long, and the sill is a 2x4 resting on its narrow edge. The lever is notched on top, and a heavy wire looped over it holds it in position.

The very convenient jack in Fig. 5 is, with the exception of the lever and the catch cleat, made of 2x4 scantling. When mortised together as shown, it makes a very strong jack. The lever may be 1½-inch stuff, about 4 inches wide at large end; the cleat to hold it is of the same material.

Another way of making this last jack is shown in Fig. 6. The upright scantling, instead of the lever, is notched, and a ¼-inch wire is used to engage in the notches and hold the lever in the proper position; the wire loop is kept from slipping where it crosses lever by means of a staple driven over it into lever. J. G. ALLSHOUSE.

The best quality oil and a small spouted can will help to make the machine last longer.

A little wife well willed, a little crop well tilled, a little barn well filled, and a silo; who could want more?

A few up-to-date farm references: The Bible, the bulletins from the Department, and FARM AND FIRESIDE. Oh, there might be a few others.

In some stables it is necessary to use bars between the animals. If there is a notch in the end of the bar and a corresponding groove in the slit into which the bar slides, it will save the bars coming down.

There's music in the dinner-bell
That sounds across the lea,
There's music in the barking dog
That scratcheth at the flea,
There's music in the rustling corn
Just peeping from its shuck,
But the cheeringest is Biddy,
With her cackle and her cluck.

Run a wire trolley with a ring on it through the barn back of the animals, then hang a short piece of wire from the ring with a snap on the bottom to hang the lantern about three feet from the floor. It's handy nights and mornings.

Catching the Mole

THE mole is an industrious fellow and a prodigy of strength, heaving up the tough sod as he excavates and crowds upward. He is classed as a mammal whose appetite craves animal rather than vegetable matter, yet the farmer and gardener know that this rodent is responsible for the fact that many seeds do not come up. Whether he devours the seeds or lets them down so deep that the sprouts never reach the surface does not matter. He is a nuisance and likewise proves troublesome in lawns and cemeteries.

How to best get rid of the mole has been quite a problem until recent years. Being deprived of eyesight his other senses appear to be abnormally developed. Suspicious of poisoned bait and keen to detect the presence of any trap placed in his galleries, no other means designed for his destruction is so effectual as the spear trap, on sale at hardware stores.

The method of setting the trap is simple. First, a small spot in the mole's route, about equal to the inside of your hand, is leveled by pressing the upheaved earth downward. This act closes or partly closes the mole's runway. The trap is next set and the legs thrust down astride the mole's path until the pan, or trigger, rests against the leveled spot. When the mole comes along, finding the passage caved in, he crowds on, lifting the surface again which, pressing against the trigger, springs the trap, and the poised spears descend, destroying him to a certainty.

Always set the traps over roadways showing the most recent work. Routes that have been made several days are but little traveled, if at all. J. A. NEWTON.

Intelligence

News of Interest to Every Farm

It is claimed that diphtheria anti-toxin has saved a half-million children in the last decade.

Public quinine depots have been established all over the island of Jamaica. There anyone may obtain that medicine at a very nominal sum.

Perhaps the need of casing for sausages is a thing of the past. A patent recently filed claims the point of searing the meat itself to form its own casing.

England wants her bachelors educated correctly, so a school has recently been organized in London where the men are taught how to make beds, cook, sew and do all forms of housework.

Fruit-growers and truck-farmers who are in doubt as to the answer to the commission-merchant question should write us. We are prepared to help you to a good, reliable merchant's address almost anywhere.

The deeper the soil mulch, the better it holds evaporation in check. Such is the judgment of men who have been working on the problem of moisture-saving in Southern California. There is such a thing as making shallow cultivation too shallow.

Says B. F. Yoakum of the Frisco Railways, "The biggest trust is yet to come—the cooperative trust of producers who raise and sell food-stuffs to the American people. Cooperation among purchasers has worked wonders in Great Britain, where 8,000,000 people are enjoying its benefits."

Do you advise young men to take a two or a four year course in the agricultural college? In answer to this question 1,692 Ohio farmers said yes, and 55 answered in the negative, when the question was asked by Secretary Sandles of the Ohio State Board of Agriculture.

The domestic economy department of the Oregon Agricultural College is doing a piece of work entirely practical, in teaching the young ladies of the department how to prepare satisfactory meals at a low cost. The governor was recently served with a very elaborate meal which cost but twenty cents.

Doctor Johannsen of Copenhagen has made it possible for lilies-of-the-valley to come to maturity in eight to ten days. This has been accomplished by the use of chloroform, by means of which he makes the plants "sleep" very strenuously. Their thorough rest seemingly makes them anxious to do their life work, and so they grow rapidly.

American farmers and ranchmen who have been lured to Mexico by the various land and plantation companies which have operated in the United States for the past few years, are now being plundered and in some cases murdered by the bandits which infest that unhappy country. There is no Spanish-speaking nation on the Western Continent to which it is safe for an American farmer to emigrate, except Porto Rico. Those who have removed to such regions as Cuba and the Isle of Pines, while safe to-day, have no assurance as to safety for the future. The American farmer can never be at home in the revolution belt, and no nation to the South of us is outside of it.

Kansas experience shows that seventy-five per cent. of the chinch-bugs in any locality can be killed by the farmers getting together and systematically burning the grass in which the fall generation hibernates during the winter. Next to this method, the best results were obtained by the dust-furrow barrier for trapping the bugs while migrating from small grains to corn. Once trapped in the dust-furrow, the bugs are killed with coal-tar or kerosene.

Many people who feel that their minds are becoming deranged, would be glad to have themselves examined, just as for any other disease, with no publicity. In Maryland, Rhode Island, New Jersey and Illinois laws have been passed allowing such persons to take steps for the testing of their own minds. These statutes have been found a great blessing to many people, who under the laws of most States would have been obliged to wait until quite insane before treatment. In most cases these self-committed persons have voluntarily gone to hospitals, and the State thus saved expense, and the families spared great worry and humiliation.

Books

The Wisconsin Idea, by Charles McCarthy. This is a study of the most progressive and most interesting of all our state governments. Doctor McCarthy, its author, would seem to be, of all men, the best fitted to write a superlatively good book on this subject. He has been in the movements he describes, and he is a very able man. He has not written the book he might have produced if some curious twist of mentality had not kept his face averted from Robert M. La Follette to such a degree that La Follette's name actually does not appear in the very full index of this book on "The Wisconsin Idea!" The effort to write Hamlet with Hamlet left out is only a little less lamentable than the effort to act in the same curtailed form. Doctor McCarthy's adulation of Dr. Richard T. Ely as a great force in the development of the Wisconsin idea may be excused as growing out of the relations of the author, a college professor, with the head of his department. But the fact remains to be stated that Doctor Ely has long since ceased to be a force for progress, while La Follette is still in the forefront of the battle he has always led.

In spite of these defects, the book is one which students of reform should read. There is an introduction by Theodore Roosevelt. The Macmillan Company, New York. \$1.50, net.

DEATH TO HEAVES

AND INDIGESTION TROUBLES

A Safe, Permanent Cure



Indigestion causes Heaves. **NEWTON'S Heave, Cough, Distemper and Indigestion Cure** gets at the root of the trouble by correcting Indigestion, and is therefore **Death to Heaves.**

Heaves is not a Lung Trouble. Heaves is brought on by Indigestion caused by overfeeding bulky food or violent exercise on an overtaxed Stomach. Overfeeding enlarges the Stomach and Diaphragm, retarding the circulation and nerve force of the Lungs. Good feeders and good workers only have Heaves. Newton's cures Chronic Cough, caused by Indigestion and the after-effects of Distemper. It cures Distemper by driving the poison from the blood. Newton's, in correcting Stomach and Bowel troubles, makes it a Grand Conditioner. Expels Intestinal Worms, cures Colds, Acute Cough, prevents Colic, Staggers, etc. A Blood Purifier, cures Skin Eruptions. Economical to use; dose is small. Equally effective for all stock.

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\$82 Saving on New Typewriter

As a result of remarkable invention, a modern standard keyboard typewriter is now being built in the Elliot-Fisher Billing Machine Factory, with only 250 parts. Other machines have 1700 to 3700. Hence its \$18 price. This typewriter—**THE BENNETT PORTABLE**—weighs but 76 oz. Readily carried in grip or pocket. Sold on money-back-unless-satisfied-guaranty. Over 26,000 in daily use. WRITE FOR CATALOG. Agents wanted. in U.S.A. **\$18** D. T. BENNETT TYPEWRITER CO., 366 Broadway, N. Y.

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Did your father
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always use a **Studebaker**
wagon and no other,—

Because—They found by experience that **better material, more skill, more money and more value** had been built into them than any other—no matter what they cost and no matter how cheap the other might be.

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What of it? It means money to you. It means a good wagon for 20 years instead of a poor one for 10 years. **Don't trade that last 10 years of satisfaction for five dollars difference in price.** Ask the nearest Studebaker dealer.

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GOOD NIGHT'S SLEEP

No Medicine so Beneficial to Brain and Nerves

Lying awake nights makes it hard to keep awake and do things in day time. To take "tonics and stimulants" under such circumstances is like setting the house on fire to see if you can put it out.

The right kind of food promotes refreshing sleep at night and a wide awake individual during the day.

A lady changed from her old way of eating, to Grape-Nuts, and says:

"For about three years I had been a great sufferer from indigestion. After trying several kinds of medicine, the doctor would ask me to drop off potatoes, then meat, and so on, but in a few days that craving, gnawing feeling would start up, and I would vomit everything I ate and drank.

"When I started on Grape-Nuts, vomiting stopped, and the bloated feeling which was so distressing disappeared entirely.

"My mother was very much bothered with diarrhea before commencing the Grape-Nuts, because her stomach was so weak she could not digest her food. Since using Grape-Nuts food she is well, and says she don't think she could do without it.

"It is a great brain restorer and nerve builder, for I can sleep as sound and undisturbed after a supper of Grape-Nuts as in the old days when I could not realize what they meant by a "bad stomach." There is no medicine so beneficial to nerves and brain as a good night's sleep, such as you can enjoy after eating Grape-Nuts." 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.

Crops and Soils

Drying Alfalfa

I HAVE successfully grown alfalfa in Delaware County, New York, for fifteen years. The soil is a deep clay loam on a gravel subsoil, which, with lime added to it, is just right for legumes. Many farmers in the East are learning how to grow alfalfa on the non-limestone soils by the application of lime and with inoculation. Outside of the alfalfa belt of Onondaga, where it is grown so easily in the limestone soils, there are now many fields of a few acres in New York. While farmers need to know how to grow alfalfa, they also need to know how to dry and handle the crop.

When new shoots are just starting from the roots, is the time to cut alfalfa. These shoots generally start soon after the first blossoms appear, but one should be governed by the sprouting from the roots, and not by the blossoms. It is the nature of the plants to start a new crop from the roots when one crop has made its full growth, and to remove the first at once hastens the growth of the second crop.

It is best to wait until one can expect two or more days of sunshine before cutting. I sometimes wait until a rain is over and the sun shines again. After the dew is off in the morning, I mow the alfalfa, spread it evenly (if one has a hay-tedder, this does it the quickest and best) and let it lie until late in the afternoon. I put it in heaps of seventy-five to one hundred pounds, before the dew falls.

Hay-caps are needed to cure alfalfa rightly. The caps can be made from a good quality of muslin sheeting. A convenient size is forty inches square. Weights tied to each corner are better than tying the corners to pegs, because the weights keep the muslin tight and smooth over the hay when it settles, and the cap sheds water better. Iron or lead washers, weighing about one-fourth pound, will do very well for weights. If the muslin is dipped in linseed-oil, it will last longer and shed water better, but this is not necessary. One need not fear the heaps will be injured by a rain if they are covered with a hay-cap. By curing alfalfa in the shade, the best quality of hay is made, as the juices, aroma, etc., are all kept in the plant. If the alfalfa is wilted when put in heaps, it may be left for a few days and then be in just

the right condition for soiling cows or feeding the work-horses on the farm. If the alfalfa is cut every day for soiling, it must sometimes be cut during rainy weather or when the dew is on. The use of the hay-cap makes it possible to cut enough alfalfa in days of sunshine to last through three or four days of rain.

If the alfalfa is to be dried for hay to be stored in the barn, more water should evaporate from it than when used for soiling animals. After it has partially dried under the caps for a day or two, if there is a good prospect of a day of sunshine, take off the caps after the dew is off, and spread out the heaps somewhat. Possibly the hay may need turning once. If there has been no rain that has wet the alfalfa, and a large quantity is put in the barn at one time, it can be safely put in the mow with but little drying in sunshine, after the partial curing under hay-caps. When done with the hay-caps, hang them, when dry, on poles in a shed or barn.

W. H. JENKINS.

The Creek Does It

RECENTLY I made a visit to the old homestead and the scenes of my childhood. Oriskany Falls, New York, is now a thriving factory town giving employment to many persons. The falls are utilized for various power purposes, including the lighting of the town. The Oriskany Creek, a little above the town, runs through the corner of one farm and is now made to do farm-work. A small dam is thrown across a portion of the creek, and a small power-house is built at the side of the dam to cover the turbine wheel and the dynamo needed for creating electric power for its various uses on the farm. Wire connections are made to the barns, and the home, a short distance below the power-house, is heated by electricity. The cows eat by electric light and are milked by electric power. I saw two machines, each milking two cows in about ten minutes. This plan of milking by machinery has been going on here for the past three years and has proved a success. They have about twenty cows. Electricity cuts the feed, runs the cream-separator, churns the butter, cleans the carpets of the house by vacuum process, heats flatirons and runs the egg-beater and sewing-machine. This little creek, that sixty years ago seemed to run just to get rid of itself, is now doing farm-work successfully.

EUGENE J. HALL.

This 25 bushels is a large average. You will notice that the cost of production stands at 41 2-5 cents per bushel, and the price received was 80 cents, leaving a profit of 38 3-5 cents per bushel. There have been thousands of bushels sold here at the elevators for less than 65 cents and trailed all the way from 40 to 75 miles. This is not counting bad years, when the crop is hailed out, frozen out, burned out, blighted out or cleaned out by the gophers. Neither does it include the wear and tear on machinery and horses.

These are pessimistic figures, but they also ought to be considered. V. L. SWARTZ.

An Idea in Hay-Making

WHEN filling a mow with hay, we have found that it pays to provide some means of keeping the hay from taking the long drop from the hay-track at the comb of the barn to the hay in the mow, which is conducive to packing and subsequent spoiling.

For this purpose, we use a strong pole which rests upon the beams at the ends of the mow. The pole should be strong enough to hold a heavy weight, and should be placed directly beneath the hay-track. It can be kept in place by nailing short slats to the beams, one on each side of the pole. The pole can be hoisted to position by attaching a chain to its center and fastening to the hay-fork.

With the pole in place, the bunch of hay drops from the fork to the pole, then slowly tips to one side and falls to the hay beneath. This greatly lessens the packing that results to the hay in the center of the mow when the bunches fall all the way from the fork. Then, too, the pole greatly aids in distributing the hay over the mow. Without it, it is necessary to carry the hay all the way from the center of the mow directly beneath the track to the sides, which may be a considerable distance in a wide mow. With the pole, the bunches of hay land considerably at either side of center, which greatly lessens the distance of carrying. Sometimes one bunch will remain on the pole until another drops on top of it. In this case the top bunch is thrown far out to the side.

When the mow fills up to near the pole, it is of no further use and can be removed. We have let the pole remain in the mow, when the hay around was not well cured. As the hay settled, it provided an air passage beneath the pole, which helped to keep the hay from heating. This usually bends the pole considerably, but it should be strong enough not to break. P. C. GROSE.

Don't Talk Hard Luck

PLAN to do things this year. Don't be content to raise just 25 bushels of corn to the acre because that is the United States record for the past ten years. Don't stop at 25 bushels, the average farm value of which for the past ten years has been but \$9.35. Why, look at fifteen-year-old Jerry H. Moore, the champion corn-grower, who produced 228 bushels and 3 pecks on one acre, which netted him \$130.70. Don't be content to grow but 65 bushels of spuds to the acre because that is the ten-year average of the country, with a farm value per acre of \$42.12. Why, bless your old soul, Mr. Sturgis of Wyoming grew 974 bushels and 48 pounds of spuds on one acre, which netted \$714.00 after paying expenses. Some difference, eh? Well, I guess. R. A. Chisholm and R. C. Nisbet of Colorado produced 847 1/2 bushels on one acre. One of the ranchers in my county, here in Colorado, produced 624 bushels last year. Don't stop at the average yield. Do you know that the countries of Europe beat us all to pieces in the average yields per acre? And they have land that has been cultivated for ages in comparison with ours. Trouble is, we spread ourselves out over too much land. Try to do too much. While we average 12 and 13 bushels of wheat to the acre, Germany has 28, France 21, the United Kingdom 33, and so on. Why, Germany grows on an average as many spuds to an acre as we do on three. Our Dutch cousins pick up 200 bushels to the acre right along. And so it is in everything. The "slow" foreigners know how to farm better than we do. We are too slow to catch a cold, too slow to even keep the immigrants from gobbling up our best land and growing rich, while we highly civilized Yankees howl about "worn-out soil" and hustle off to the city to become dependents, mere parasites on the body sociological and economical, and help boost the cost of living by our very inability to meet Mother Nature half-way and give her a square deal. Don't let the cold winds howl about an empty barn next fall after scraping around over the meadow to get a half-ton of hay to the acre. Why, Mrs. Harris of Michigan grew 70 tons and 800 pounds of silage-corn on one acre last year. No use to talk hard luck. Get out and plow up some scrumpy meadow. Do your part. Have you always done it? W. F. WILCOX.

Buy the longest cutting-bar your team can pull, it saves time, and life is made up of just minutes, strung on end.

Use the spring seat off the old mowing-machine for the drag, it saves your legs and your back and your temper.



Enjoying the flowers of summer

What Wheat Costs

HERE are a few facts and figures upon the cost of producing wheat in this large wheat country of Saskatchewan. The figures might vary some in different parts of the Dominion, but, take it in general, they are about correct. They consider Grade 2 wheat, which is above the average, as one can see by looking up the inspection of wheat arriving in Winnipeg or Ft. William. The price of wheat is the price here f. o. b. on our tracks.

President Taft stated in one of his speeches, I believe, that it cost the farmer three cents per bushel to raise wheat. Compare the following facts with Mr. Taft's figures.

These figures are based on a yield of 25 bushels to the acre:

	Per Acre
Plowing with 4 horses, avg. 2 1/2 A. per day	\$3.00
Double disking	.75
Harrowing 3 times, @ 25c per A.	.75
Seeding	.40
Cutting	.40
Twine, 2 1/2 lb., @ 10c.	.25
Stacking	.20
Hauling to market, @ 2c per bu.	.50
Thrashing, @ 10c.	2.50
Dockage at elevator, 1/2 bu.	.40
Seed, 1 1/2 bu., @ 80c.	1.20
Total	\$10.35
Cost per bushel	\$0.41 2/5

Satisfies

There never was a thirst that Coca-Cola couldn't satisfy. It goes, straight as an arrow, to the dry spot. And besides this,

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Demand the Genuine as made by

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Whenever you see an Arrow think of Coca-Cola.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.



The FARMERS' LOBBY.

Some More or Less Comforting Thoughts on the Eve of a Great Political Revolution

By Judson C. Welliver

I AM writing this at Chicago on the eve of a convention which, unless the political forecasters are as badly off as the weather forecasters were on the day when Mr. Taft was inaugurated, is to usher in a political revolution in this country. I came here because my writing business requires it. I wouldn't miss it for anything, of course; and yet I can't help thinking that I leave the real, stable things of life at home on the farm. I have ninety acres of wheat just approaching the milk. The clover looks fine over most of the more than a hundred acres of it—save for one or two fields, that seem to need liming. The hundred or so acres of corn will make the plows hustle to give it the cultivation it needs before laying by—if we get rain pretty soon.

Mexico's Revolution and Ours

REVOLUTION or no revolution, these things will go on under the influences of the soil of Montgomery County, Maryland, and the sun which shines for all. That's the difference between our revolutions and those of Cuba and Mexico. Down there, when a Diaz, a Madero, or a Gomez gets at outs with the party in power, or the one that wants to obtain power, his minions run something worse than a steam roller. They run batteries of artillery over the fields. They levy assessments of hay and corn and forage on the farmers and wipe out their crops. They stand the recalcitrant rural proprietor up against an adobe wall with guns pointed at his head if he doesn't loosen up with the money and the horses and the supplies. Altogether, I feel like being thankful that I am an American farmer, rather than any other farmer in any other period of the world's history. And there are only a few nations even in this age whose farmers are much better off.

Here in Chicago, the steam roller is making regular trips, and after it passes along, the flattened forms of Roosevelt's delegates are being peeled off the pavements after every trip. It is a magnificent exhibition of gall on the part of the national committee of the Republican party. The committee consists, for the most part, of men who have been utterly repudiated by their States. They represent the way people were supposed to feel four years ago. They know they don't represent the people of the party; but they have the machine, and they are running it as ruthlessly as the god Juggernaut runs his car in the Hindu ceremonial. Well, let them run it! It's their last chance.

Let me now prophesy that the steam roller as a political engine will cease to operate in 1912 in presidential politics. In 1916 the nominations will be made by presidential primaries. The plain, ordinary voters of the parties will send instructed delegates to the conventions. And perhaps one of these days—before you or I would expect it—there will be no more national conventions. The parties will do as they do in Wisconsin in state affairs—nominate a ticket by ballot, send in the returns to the proper officers, and then these nominees, armed with the proper certificates of nomination, will meet and draw up the platform on which they will go before the people.

Getting a Few Hard Knocks

OLD-FASHIONED party politics is getting a lot of hard knocks these days. This fact has loomed up above everything else in the proceedings of the Chicago convention. To use an expression that is particularly common just now, the old-time political machines are getting steam-rollered. True, there are enough of them left to make more or less vigorous use of the steam roller themselves at times, as witness the operations of the Republican national committee for some days in succession at the Coliseum. But the fact remains that the machines themselves are slowly but surely being flattened out by the resistless force of an aroused public sentiment.

The developments at the Chicago convention make it clear that the country has about reached the point where it will have no more of the old type of party national conventions. The disposition to independence of thought and action is rapidly making such conventions impossible. The day is passing when a few leaders or bosses can lock themselves up in a room, evolve a program and then proceed to make a whole assemblage of delegates from all parts of the country adopt this program.

The essence of the strength of the ordinary partizan political machine is to be found in the careful cultivation and acceptance of the doctrine that if a man belongs to a party he ought to accept the actions of that party and its doctrines without question. He is to render unasking, loyal obedience. If the party proceeds to nominate a candidate of the yellow-dog type, the supposition is, according to the old precepts of American politics, that every loyal member of the party will go to the polls on election-day and vote for that candidate regardless of questions of fitness. But this notion is getting many a rude jar and jolt. It has remained for one of the stiffest of these jolts to be administered at a Republican national convention.

Oddly enough, the blow was struck by a man who is himself freely charged with being one of the typical bosses of politics in this country. This man is William Flinn of Pittsburgh, known to his enemies as "Old Bill" Flinn and to his friends as just plain "Bill" Flinn. He has long been regarded as one of the bosses of western Pennsylvania. He is a hard, capable man, a seasoned veteran of politics, a practical leader of other men, but none of his worst enemies ever called him much of a reformer.

It remained for Flinn the other day to voice a plan of action for the Roosevelt voters of the country that, if followed out, would practically put the national convention, as it has been known generally, out of business. Flinn the other morning, when he was especially incensed at certain of the rulings of the Republican national committee in throwing out delegations, declared:

This Threat Created a Commotion in the Taft Camp

THEY may do all this. They may steal these delegates and this nomination, but they will profit nothing by it. The Pennsylvania state convention will be reconvened and will instruct thirty of the thirty-nine electoral candidates that they are to vote for Theodore Roosevelt for president; not for any other candidate, and without reference to the party label that may be placed over the name of Roosevelt in other States. It will make Roosevelt the candidate in Pennsylvania and will give him the vote of Pennsylvania."

Such a declaration as this, coming from a man so long loyal to the methods that govern old-style party politics, produced a profound sensation. And it was not only Flinn, who was present at the convention as one of the chiefs of the Roosevelt band of leaders. He was followed by Governor Glasscock of West Virginia and other prominent Roosevelt men.

From one State after another the Roosevelt leaders came with assurances that if President Taft were renominated by the methods which the Roosevelt leaders charged were wrong and indefensible, then they would do just what Flinn said Pennsylvania would do.

It is worth while to examine into this proposition and see what it would mean if carried out. The idea that Flinn and Glasscock and other strong Roosevelt supporters advocated was not a bolt, but simply the nomination of candidates for the electoral college who would pledge themselves to cast an electoral vote for Roosevelt. They would do this without reference to the nomination made by the Republican National Convention.

Such a course, in a Roosevelt State, would mean the choice of Roosevelt men in the electoral college and, it should be observed, this would be done, not only in defiance of the will of the national convention, but without going through the formality of holding another national convention.

This is getting a long way off from the ancient and once-accepted way of doing things. The old

way is for a few leaders, men representing powerful interests, to pick out the man for the nomination for president months in advance. Then, through the old-fashioned caucus, attended by a few men, small cogs in the great machine, select the delegates to

the county conventions, and thence to the state and national conventions. By the time the delegates were picked to the national convention, an aggregation would be had of blindly obedient partizans, ready to do the will of the interests they served, or, if not exactly representing special interests, ready to follow blindly the nominee of the party, without looking too closely into the antecedents of the nomination.

For years, lo, for generations, we have heard no end of preaching from the machine political leaders about the fact that this government is a government of party and that every man ought to be a loyal follower of one or the other political party; that he ought to bow meekly to the party will and all that sort of thing. But this is getting to be an exploded notion.

Getting Rid of Old Superstitions

IN OTHER words, the idea is taking root that political parties and the men who assume to lead them are entitled to consideration only to the extent they serve the public will and are of use and benefit to the public. We are getting rid of many of the old superstitions. But few have persisted more tenaciously than the one that men are merely the servants of parties.

The other day the Republican national committee, in spite of the fact that California had gone 77,000 for Roosevelt, saw fit to unseat the Roosevelt delegates from the Fourth California District. A big mass meeting was held in Los Angeles, presided over by the mayor, and resolutions expressing vigorous disapproval were adopted. It hasn't been long since such an outburst of feeling against the action of a national convention would have been looked on with horror as a kind of heresy.

The country is moving on in these matters. The sentiment for popular government is taking hold. Men are less and less content to be governed from the top. They want to do the governing. They do not want their politics administered to them by somebody professing to do the administering by a sort of divine right. The direct primary, the initiative and referendum, and the whole movement for getting the government back to the people, are having profound effects. The cause of progressivism is advancing, and the effect of it is to give the average man a larger measure of "say" in the business of running the country. Evidence of such facts as these could be seen in plenty at the Chicago convention. Not the least important part of this evidence consisted in the entire absence from the convention of many of the men who for years have been present at every Republican convention and have had dominating parts in it. This time many of the former leaders and bosses were not to be seen. In this list of absentees were such men as Cannon and Aldrich and Hale and a number of others whose names might be given. More than this, there was a noticeable increase in the attendance of young, new and vigorous men, men who are imbued with the notion that the time has come for new things in the politics of the country.

Nation-Wide Presidential-Primary Bill

PENDING in the Senate of the United States just now is a bill by Senator Cummins of Iowa for a nation-wide presidential primary. Under the operations of this proposed law, candidates for president would be nominated without all the fuss and trouble and friction and bad blood that has marked the proceedings at Chicago.

One thing, however, is perfectly plain. That is, that such scenes as Chicago has lately witnessed have done much to convince observing men of the need for just the sort of legislation proposed in the Cummins bill. If this legislation were had, the country would not be kept sitting up nights and neighbor would not be arrayed against neighbor over the question of whether John Smith or Bill Jones was entitled to be the delegate from the First District of Arizona or the Seventeenth District of Texas. Under such a system, there would be no opportunity for contests, and the chances for manipulation and the working of strange schemes for the seating of this man or the unseating of that would be eliminated.

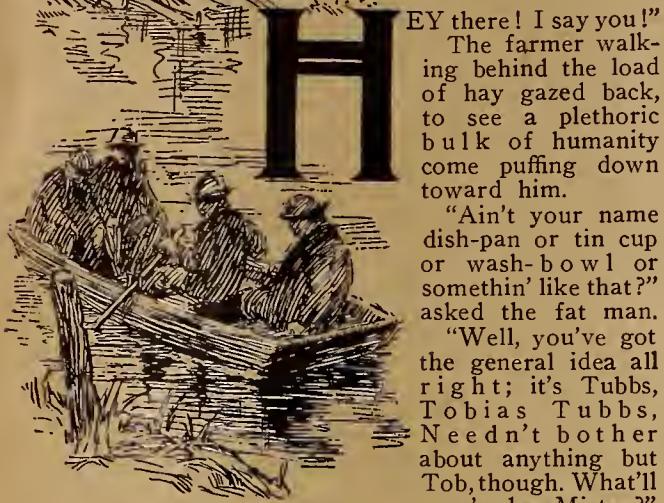
I'M NOT prophesying as to this, but I should not be at all surprised if the conventions of 1912 were the last national conventions ever held, in our present acceptance of the term. The new Flinn idea and the presidential primary seem to carry within them the seeds of the destruction of the national convention, with its whoop and hurrah, its useless oratory, its red-fire and brass-band demonstrations, its damnable steam-roller tactics, its bargaining, its chicanery, its wonderful history, its heat and sweat and its party debauchery.



Reciprocity

How It Worked for Tobias Tubbs

By Parlee Clyde Grose



HEY there! I say you!" The farmer walking behind the load of hay gazed back, to see a plethoric bulk of humanity come puffing down toward him.

"Ain't your name dish-pan or tin cup or wash-bowl or somethin' like that?" asked the fat man.

"Well, you've got the general idea all right; it's Tubbs, Tobias Tubbs, Needn't bother about anything but Tob, though. What'll your'n be, Mister?"

"William Henry Brown. Now, Mr. Tob, do you want to board two men—Jerico is waiting with the automobile at the end of the lane till I motion for him to come up—for two nights, giving us our last meal Wednesday morning, for five dollars?"

"Gosh! I'd like to 'commodate you, Mr. Brown, but I and Pete's the only folks here. We just come from Indiana in the spring, and my family's back there. But we ex—"

"Don't care a rap for your pedigree. When I do business, I stipulate what I'll do and what I want the other man to do; then he's to say 'yes' or 'no.'"

"If you ain't minding plain grub, I reckon I can get it for you till then."

"Why didn't you tell me that without so much fussin'? Here's your five dollars. Wednesday, after breakfast, we look out for ourselves," and Brown wheeled and waved his hat to Jerry.

"Now, Jerry, limber up your old joints and canvass that car," ordered Brown, as his large touring-car rolled up before the yard gate. "I'll take the rods and go on back. You bring the rest of the things when you come."

"How'd you like to ride in one of them once, Pa?" asked Pete, after Jerry had gone.

"I'd want a lot o' boot to trade places with that red-headed chap he calls 'Jerico,'" replied the father, "if I had to take all the cussin' he does. Bet he gets good pay, though."

Tuesday afternoon arrived and with it a downpour of rain, and William Henry Brown was compelled to postpone his fishing.

Night arrived, with the rain falling in torrents. The Tubbs homestead was located on a high knoll, but was completely surrounded by low ground, a wide, deep gully extending between it and the highway, which was reached by a long lane. When the river at the rear of the farm arose, the gully and low ground became flooded, which brought the confines of the Tubbs farm down to a small island. At such times, access to the outside world was possible only by means of a small row-boat.

That night the men retired very early. As Brown started for his room, he tripped and, in regaining his equilibrium, wrenched his body so violently that his erstwhile thatch of fine, black hair was dashed to the floor in the form of a wig. He snatched it up, cast a wicked glance at Tobias; and then hurriedly limped into his room.

Tobias saw the whole procedure, and when the door closed between him and Brown, was sitting in an amazed stare. He was disconcerted and gazed stolidly at the door; then he arose and called Pete out in the kitchen. Here he made known his discovery, and for two hours they sat and developed a plot.

"Snortin' Jack Rogers!" exclaimed Brown, when he looked out the little window and saw the gully was a wide expanse of water. "Jerry, you gawky imp, git out there and rig up that car. After breakfast we go to the city."

At breakfast, all ate in silence until Brown, having used the allotment of syrup, deliberately reached over and took that from Jerry's place. As he caught Jerry's submissive, yet disapproving, glance, he blurted, "Don't you go to making faces. Do you suppose I'm paying you twelve dollars a week to lay around and live as good as I do? If you ever expect to get a 'pile' in this world, you've got to expand till you press the other fellow up against *circumstances* pretty tight. If you can squeeze a dollar out of him, why, you're not keen on business if you don't do it. Look out for 'No. 1.' That's the way I got my 'pile.'"

When through eating, Brown kicked back his chair and addressed Tobias: "Well, Tob, you needn't fret that shrimped-up brain of yours about getting us another meal. We're going to the city."

Brown had not yet looked out the front way, but now suddenly became apprised of the fact that he was on an island, and that the lane out to the highway ran at the bottom of a wide, deep gully of water.

"Jumpin' Jupiter!" he bellowed, as his exasperation ran up to the exploding-point. He wheeled to go back into the house, but, seeing the utter futility of remonstrance, turned again and stared at the water until he had cooled off.

Turning to Tobias, he said, "Tob, how long will it be till that goes down?"

"Golly, Mr. Brown, it's pretty hard to tell. If it don't stop raining before long, it'll be a week, at the least."

"According to that, you can book us for a few days more, Mr. Tubbs. Here's another five; guess it'll pay us out, won't it?" said Brown, as he offered Tobias the bill.

"Nope, Mr. Brown, can't do it," said Tobias. "The old contract's expired, and I'm not carin' about making

another at the old rate. According to my reckoning, there ain't more'n enough grub here to do me and Pete at normal eating till the water goes down. As you's just preaching, we've got to look out for 'No. 1' first."

"You cursed idiot!" exploded Brown. "You don't mean you're going to starve us."

Tobias' lank figure grew erect, donned a belligerent aspect, and inclined slightly forward.

"You see, the high water has raised the cost of living enormously. The Tubbs House can't begin to accommodate its patrons at the old rate. Fact is, everything goes onto a brand-new schedule, beginning this morning. Drawing-room privileges, three hundred dollars a day; lodging, five hundred dollars a night; bread, ten dollars a slice; milk, twenty-five dollars a cup; other things accordingly. You understand that to offer such generous accommodations means for I 'nd Pete to go on half rations. Now, it's powerful disagreeable out here in the rain, and anyone desiring our service will find the clerk's office just to the rear of the main drawing-room. Might just add, too, that during high water Tobias Tubbs and Son operate a ferry across the gully there. The fare is twenty-five hundred dollars one way. Tickets can be bought at the clerk's office."

The first part of their scheme had worked admirably. They now waited for developments. In about half an hour, Brown came blowing into the room.

"How do you expect a man to pay such prices when he's only got twenty dollars with him?" asked Brown.

"That'd buy you and Jerico a slice of bread apiece," spoke up Tobias, indifferently.

"Well, book us," sniffed Brown.

"It's cash in advance, you understand, Mr. Brown."

"Cash, you chunk of luff, how can I pay cash when I haven't got it?" and Brown fairly raged.

"Oh, I just figured maybe you was in the habit of paying by check, seeing you give Jerry one the other day. It wouldn't take long to write one for five thousand dollars—that's what it'll cost you to take the ferry, and that's the cheapest way out."

Brown wheeled and started out. At the door, he stopped. "Now, see here, Tob, what have I done that makes you want to starve me?"

"Golly! don't blame me, Mr. Brown, 'cause I hate it furiously. You see, it's that stuff you call *circumstances*. I'm just expandin'."

About noon, Brown blustered into the house again. The cold wind and damp clothes were becoming unbearable, yet just now he was feeling good. As soon as he got across the gully, he would hire a rig, hurry to the city, and order the bank to withhold payment on the check. "What a fool not to have thought of that before."

"Get your boat ready," he said. "We want out of here as soon as you can row us across. I'll admit the joke's on me, but I'd have done the same thing. It's the only way to get ahead. Here's your check for five thousand."

"Pete, you get the boat ready, it's overhead in the granary," instructed Tobias, as he carefully read the slip of paper. Then, turning to Brown, continued: "Reckon you'll have to leave the car here for three days yet, at least. Now, I'm not insinuat'ing anything personal, Mr. Brown, wouldn't for the world; but suppose you just add on here that, in case of non-payment of the check, I'm to keep the car."

"Twon't take long," continued Tobias. "You know there's nothing like doing things up businesslike. Jerry says it only cost you forty-five hundred in the spring, so you got all that running and would be making five hundred, besides."

Brown looked scared. Had Tobias actually wormed him into a proposition like that? For a moment he gazed out the window at the cold water, felt a chill from his damp clothes, then took a furtive glance at Tobias' determined mien. Yes, obstacles were too formidable; he saw that he would have to give up.

An hour later, as Brown stepped from the boat, he exclaimed: "A mighty fine joke so far; but wait till the law gets hold of you, and you'll wish you was in purgatory. The authorities will be after you as soon as I can get to the city, too, remember that!"

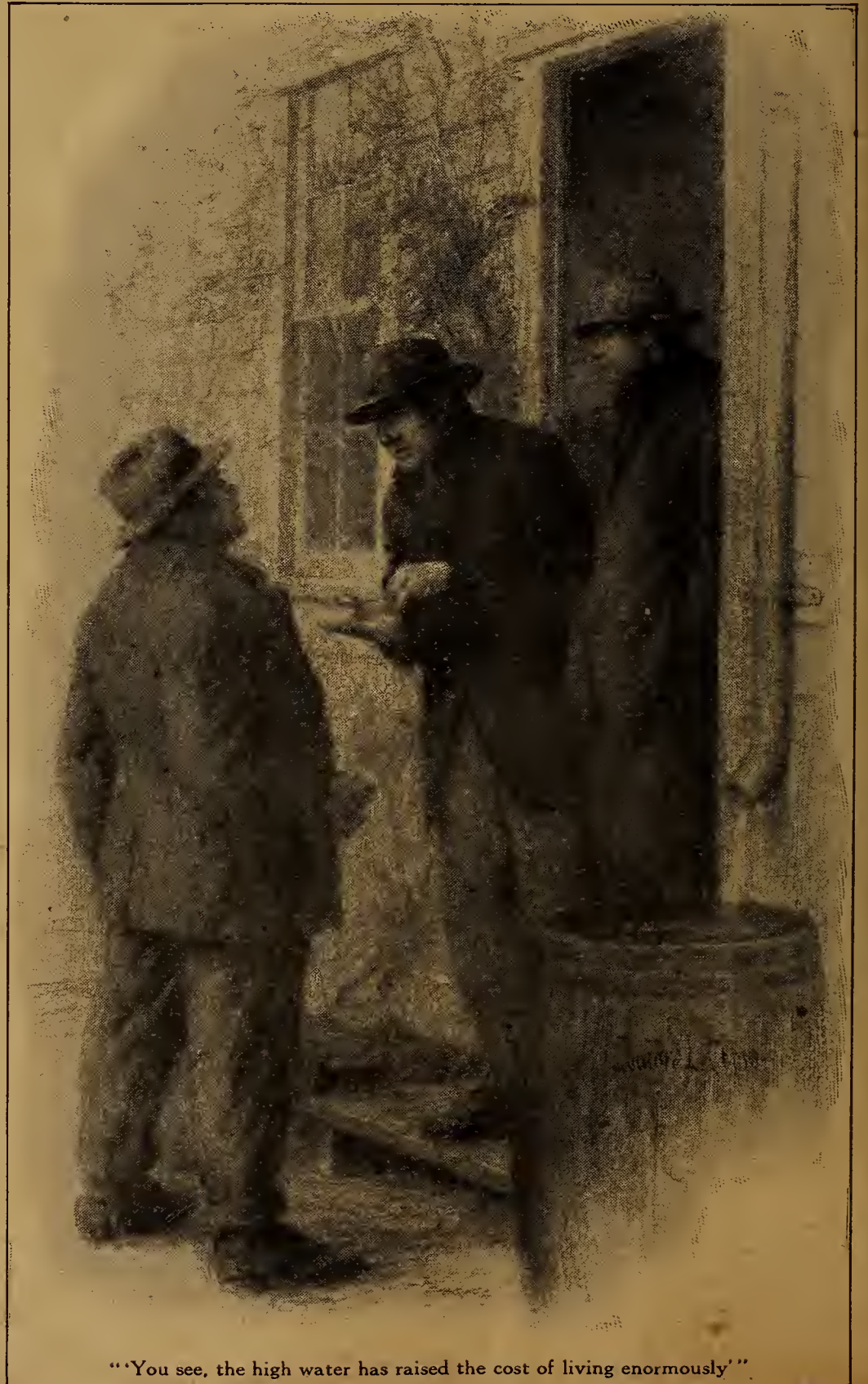
"You've been doing something the law'll put you in the pen for, sure! You've been obtainin' money, or automobiles, which is the same thing, on false pretense. You just wait till I can get all this information into the hands of the police. An' I got a witness, too," turning to Jerry, who might have been suspected of incipient signs of satisfaction at the surprising turn of affairs. "Jerry'll bear me out in all this. We got a mighty clear case, you Tubbs you," and Brown swelled up importantly and righteously as he turned his face citywards.

Tobias walked over to him and, emphasizing each point in his oration with an emphatic forefinger, began:

"Golly Neds! If that's your intentions, Mr. Brown, reckon I'm just the man to help you out. Just happens that I've got some evidence that will convict sure 'nd blazes," and Tobias appeared solicitous. "You see, two years ago, I was as hard a working farmer as Indiana had; excepting I wasn't educated. One day a nice, sleek man came driving up and wanted to sell me a sewing-machine. It was a patented kind, and cost seventy-five dollars, but, to introduce 'em into our community, he'd let me have one for thirty. As we's needin' something like that, I reckoned I'd make Samantha a present, and signed up for it. 'Bout the time it was to be delivered, I gets a nice letter from a bank, saying that my note for three thousand dollars'd be due in a few days. Well, I had to sell the forty I's trying to pay for, and with the few dollars I had left, came up here with Pete and started in on this place. Couldn't even bring my family along. Now, as I can figure it, that deal just cost me five thousand dollars in money, interest and inconvenience. The man that sold me that machine was fat and shiny, but I never got to see him again till the other night, when your wig fell off."

Brown looked frightened, wheeled and hurried up the bank.

"Gee! Wonder what Ma an' the kids'll think when we come after them in that car?" chuckled Pete, as Tobias Tubbs and Son started for the other shore.



"You see, the high water has raised the cost of living enormously!"

SUNDAY READING

Little Lessons in Living

By W. J. Burtscher

LIVE and love so that you will be a benefit to your neighborhood by remaining in it. It's no trouble to believe in the good of the human race when you are so full of it yourself that you can hardly see over it.

There is no increase or decrease in the wages of sin. They are fixed, and paid when due.

Some men actually think that the salvation of their business is more important than the salvation of their home.

Furniture in the home of a Christian should look new longer than in the home of a non-Christian, and tools in the hand of a saint should last longer than in the hands of a sinner.

Faith

By Orin Edson Crooker

THE story has been told of the little boy on the barn floor who wished to ascend up into the mow, where his grandfather was at work. In the twilight of a cloudy day the region overhead looked dark. The little fellow's courage was sorely tried.

"Grandpa, I want to come up," he called. "All right, little man, come along!" was the kindly response.

"But I can't see the top of the ladder," the child replied.

"Never mind if you can't," was the answer. "It will be there when you get to it. Just put your foot on the round where you are and climb."

How like the faithless cry that we are sending up from time to time to be allowed to see the end from the beginning! We are not satisfied to put our foot on the round where we are and climb. We fear that somehow our climb will end in disaster. We forget that in all that we do we must reckon with God. We never stop to consider that ordinarily God does not reveal the way until we are ready to walk in it.

It is a blessing indeed that we cannot see but a step at a time. Were we to have the future outcome of all we do revealed to us at our desire, we probably would not be half as happy as we are. But to keep us from being utterly cast down at times when discouragement and fear weigh heavy upon us God has planted in our hearts the element of faith. By faith we are given courage to take one step at a time—to climb the ladder of life round by round, even though the way ahead may be obscured from our sight. Faith whispers that we will always find a place for our feet to stand, that each round will be there when we come to it.

It is not for us then to question the outcome of all we are engaged upon, but to have faith that the outcome will be satisfactory. Our faith will help to win the triumph. Let us take the step next before us in a believing spirit. Let us have faith in God, in ourselves, in our work. And let us climb!

The Extra Mile

By Richard Braunstein

WHOSOEVER shall compel thee to go a mile, go with him twain."

It was a law in those days, that a stranger, not knowing the way to his destination, could compel anyone of whom he might inquire, to go with him one mile.

The text involves the fact that to go one mile with anyone was a duty, but that love is more than duty. Duty fulfils the letter of the law, love fulfils its spirit. Duty goes the one mile, love goes two. This text does not mean that one should be sentimental in expression or extravagant in deed. It does not involve the surrender of judgment and sanity in an excess of things done. It does mean that a man has not fulfilled the law of Christ who merely does what decency and law require; that love does not stop at the first mile, but goes on into the second mile, and it isn't love until it does. Love goes on and does the thing beyond. Sinai represents one, Calvary the other. You can judge a man's purpose and spirit by the words he uses in relation to his work. When he employs such words as "legitimate" or "I've done all that is required," you need no further index to the principle of that man's life. Such a man is a mere keeper of regulations, and an observer of ordinances. His character does not contain that element that goes toward social service, or helping the other fellow.

George Eliot, walking with a friend in the shades of Oxford, said, "The most awful word in the English language is that word of six letters—*ought*." But there is a larger word which gathers in itself all the reach of human obligation, and infinitely more, and that word is love. For while the instinct of duty, hope of reward, fear of punishment, and all other motives fail, love never faileth. This is the sovereign motive, and a man does not possess it, is not possessed by it, until he has entered upon the second mile.

It is the things which one does, not having to do them, that count. The overflow of love, the overplus of service, that over and above the necessary, this it is that really counts.

Medals were recently distributed by the Carnegie Hero Fund—all for actions which were not required. Did we not all feel a renewed faith in man as we read that sacred list? Why is it that the things of routine leave us cold and unmoved, while these deeds stir our blood and lead us to call them blessed who thus served? It is simply this: in the one case we see man in pursuit of his own things, doing the things worthy but which every honest citizen ought to do; in the other we see the man giving himself, in the rescue or defense or whatever it may be, doing the thing he did not have to do, or did not need to do. They put themselves in the breach, and their deeds were vital with the throbbings of that which is the very heart of God.

All the sacrifices, heroisms, things not required, not on the program, not written down in any table of commandments, but forth-springing from the heart which, keeping the law, forgets it,—all these, second miles, were they cut off, would make of this world a sad, sad, place.

In the home—the forbearance, patience, the love that never grows tired—extra miles indeed. Mother! We find our eyes a little wet about the lashes, as we mention that holy name. It is the recollected memory of the extra miles of the services of love. In business—the courage, the perseverance, the toil that went twain, therein lies the secret. Those that look on call it success, those who achieve it know that it comes of the travail of many extra miles. In society—the care for others, the reach beyond one's own doorstep, the gospel of brotherhood, the ministry of service; one only enters upon it as he leaves behind the first mile of things required, of self-interest, the pursuit of his own desires, and looks out upon the things of others. Says the poet:

A picket frozen on duty,
A mother starved for her brood,
Socrates drinking the hemlock,
Jesus under the rod.
Some call it consecration—
Some of us call it God!

Love, love alone can leaven the world. A love whose motto is "I seek not mine own will." A love whose prayer is "I sanctify myself that they also might be sanctified." Aye, a love that goes on to the last mile, not in the despair of an awful necessity, not because compelled, but crying in the exultant tone of consecration, "I give myself for the life of the world."

Keeping Our Grip

By Aubrey Fullerton

OVER a news item in one of the western papers appeared this heading: "He Had Lost His Grip." It was the story of a young man who had fallen into evil ways in the East and had gone West to try to pick up, but had failed. He had lost his grip. He tried to take hold of life with a firmer and truer grasp, but he had lost his power to keep a hold, and so his career was another record of failure and misery.

It is a bad thing to lose one's grip. It means that, through one sin or another, one's power to grapple with the serious work of life is interfered with and broken. Men without a grip are men without character, and character is lost through sinfulness. It never pays to go into the pleasures of sin, however attractive they may be, for the losing of one's grip on life is too heavy a cost to risk for any passing pleasure. We can keep our grip only as we keep clean and true.

Close at Hand

By L. D. Stearns

THERE'S sunshine just before you, sister, brother. There's a glint of gold now this side and now that, a tangle of flowers,

an echo of song, a flitting, fleeting call of something awesome and glad and sweet. Why look for leaden skies and growth of weeds? Why walk with furrowed brow and pain-pressed lips over rocks and stones and brambles full of thorns, when just beside your hand a path all smooth and free runs winding on?

Like children, we reach out eager hands to Life and cry for her great gift of Happiness. We beg it, strain our eyes, peering ever on and on, whispering, with quivering lips, "*to-morrow, heart, to-morrow!*" and all the while it's dogging at our steps, pulling at our skirts, looking, with its soft, clear eyes, into our soul of souls; only we will not pause and heed.

It's close, friend; CLOSE! We hunt too far, and so we miss it on the way. It's not in great things done, great deeds attempted or fresh laurels won, not in victories, riches, fame, but underneath the cowslip's brim and flitting in and out the chipmunk's chatter. It's in the smile of babyhood, the love that touches love along the way, the day well filled, the duty that lies close, the life that reaches up and out, and through the heart of big humanity draws close unto the throne and heart of God.

The Broken Habit

By John E. Dolsen

WE FACED each other in the blackest night,
My other, baser self and I;
And grappled through the hours in deadly fight;
For one of us, we knew, must surely die.

And though I was the victor in the strife,
I bear the marks of cruel pain;
And evermore I drag with me through life
The body of the self that I have slain.

One is poor, another is rich, but bread remains in him who is generous.—Egyptian Proverb.

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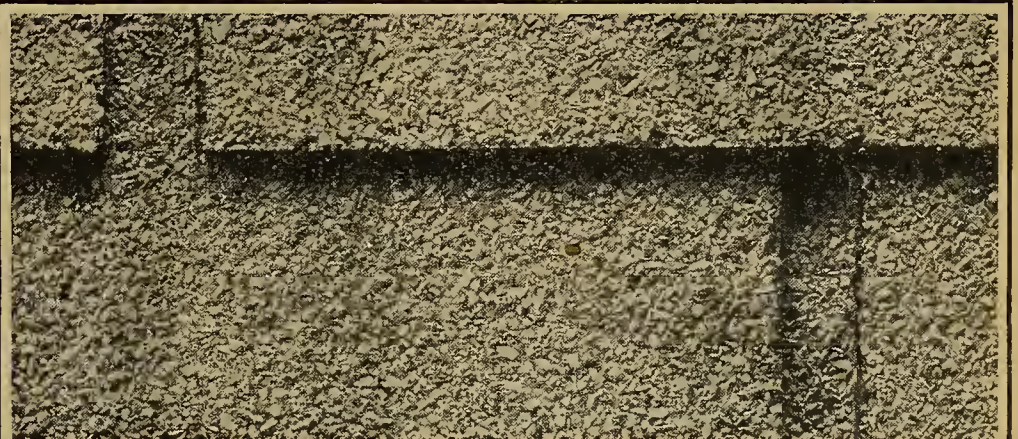
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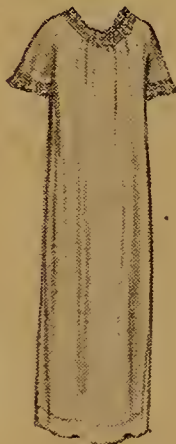
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No. 2035



No. 1688



No. 1999

The Home Interests' Club

By Margaret E. Sangster



WHEN the Club assembled in July, they found that their hostess had invited them to a lawn-party. Rugs were spread on the grass, small tables stood here and there, and the chairs were placed informally in groups. The door of the house stood wide open, and there was room on the steps for

those of the guests who preferred to glance at the scene below and receive the impression of a charming picture. The day was warm, but a cool breeze tempered the heat in the afternoon. Seated at ease in thin dresses, their hats and wraps laid aside, the mothers and daughters presented an extremely attractive appearance. It had been resolved to have a Daughter's Day in July, and the meeting was therefore larger than usual. The girls, released from school or at home from college, came with their mothers to the Club, and a part of the program was assigned to them. A piano had been moved into a corner of the wide veranda, and the girls began the exercises of the afternoon by singing three or four of their college songs.

Molly Cartwright, Mrs. Elderbury's niece, played a violin solo, and Elizabeth Waters gave a recitation. These numbers of the program preceded the theme for discussion, which was appropriately The Twentieth-Century Girl. Miss Annabel Wirth, addressing the Chair, made the opening speech. Annabel was twenty-two and had been the valedictorian on commencement day at her eastern college. A tall slender girl, the ideal of a modern Hebe, she blushed becomingly when she stepped into position and confronted the familiar faces of the neighbors. "Madam President and friends," said Annabel, "I have been asked to say a word or two for

The American Girl

"First, let me say that she is a real girl who is, I have no doubt, very much what her mother was and a little what her grandmother was in the days that are passed. One of her assets is, or should be, perfect physical health. The girls in my class were good students and came through examinations to the satisfaction of the faculty, but they were prouder of playing basket-ball, running races, rowing on the lake and tramping for hours without fatigue than of their triumphs in recitation. Perhaps some of us were too frank for politeness, and occasionally we dropped into slang. Still, the American girl, as I have seen her, is an all-around specimen of courage, candor and endurance. Our girls came from several of the States of the Union. We had southern girls who had no consonants to speak of, western girls who did not clip their syllables and eastern girls who were born, as the Virginians are, to the usage of the broad a. Mingling together in study and sport, I think we may claim that we ceased to be provincial and became cosmopolitan. The Daisy Miller of a half-forgotten-time is obsolete. When the American girl goes abroad, her country need not apologize for her manners. Of course, she is to be chaperoned, but her mother will find that her daughter is able to stand on her own feet, take good care of herself and incidentally look after her little mother."

Applause followed Annabel's remarks. Next, the doctor's wife took the floor.

A Timely Suggestion

"Annabel has drawn a fascinating portrait of an ideal daughter. Our daughters are our darlings. We not only live our lives over in our sympathy with them, but their presence in the home keeps us on the qui vive, freshens us in feeling and makes us young again. The danger as I see it is that the American girl, full of enthusiasm, utterly fearless and a trifle over-educated, will attempt too much and achieve too little. In this age it is essential for the woman who would maintain her ground, to specialize in some direction. Time was when a great deal of importance was attached to what were called the ornamental branches. A girl was supposed to be sufficiently fitted for life, seventy or eighty years ago, if she could read, write, keep accounts and spell indifferently. She might be extremely clever and very ambitious, yet if she wished the thorough education claimed by her brother as a matter of course, she was forced to make a hard fight before persuading parents and teachers to let her have her way. The girl in that period who did not marry in her teens or her early twenties was an object of compassion. We who are here are happy in the happiness of our children, and we do not oppose the marriage of our girls. Neither do we plan or seek it for them. If Love comes, Love is welcome.

"As, however, hundreds of our daughters will probably be spinsters, we twentieth-century mothers ardently wish our girls to be specialists and have at their fingers' ends a bread-winning art."

Home-Making as a Profession

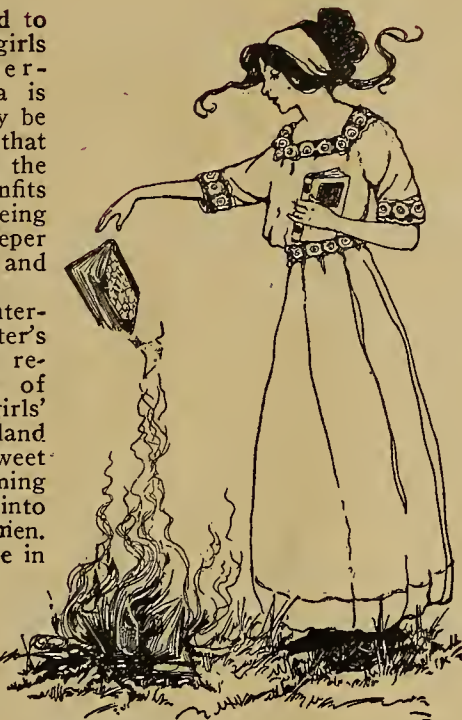
"Do you not think," inquired a gentle elderly lady, "that the women of the past had the right idea when they insisted that the young girl should be trained in good housekeeping and true home-making? Is not the ability to spread a good table, to nurse the sick, comfort the sorrowful and look well to little children a fine and noble thing? A housekeeper whose home is carried on by a succession of wretched makeshifts may have borne off university honors. Will she be a successful manager of a husband's money, and will those who grow up in her home look back to it in after years with pride and joy? I may be a little out-of-date, but the last speaker threw



"Molly Cartwright played a violin solo"

out a hint that appealed to me. She said that our girls were occasionally over-educated, and my idea is that book education may be advanced to an extent that enlarges brain-power at the expense of health and unfits a young woman for being a successful housekeeper and a happy wife and mother."

"I was very much interested," said the minister's wife, "in a catalogue recently sent me. One of the old and honored girls' schools in a New England State, a school of sweet traditions and charming memories, is expanding into a college for young women. Its special scope is to be in the preparation of girls for home life. The course will embrace studies in language, literature and mathematics, and the girls who shall be graduated will compare favorably with others who have been diversely trained. The accent of the college will be, so to speak, placed on studies that will enable a woman to hold her own in the realm of literature and shine softly in the world of home. There are colleges already that may claim a similar distinction. In the field of foreign missions and among the ranks of quiet women who are doing the world's work without ostentation or display of any kind, there are many who have been fitted in their college life for home-making."



"She threw the books in and stood by them till they were a heap of ashes"

Restless Girls

"I wonder," said a farmer's wife who made the acquaintance of the Club for the first time on this summer afternoon, "what it is that makes our girls so restless. I have been a good deal tried by the discovery that the girls who have every educational advantage and have done their parents credit in their school careers do not settle down comfortably at home and are restless and discontented when school-days are past. They, weary of monotony, find housework irksome and are a little critical about the plain ways of father and mother. When my neighbor told me that the Home Interests' Club would have a Daughter's Day, and that it was to be an open meeting, I dropped everything, asked my husband to harness up and drove four miles that I might get some light on a subject that puzzles me. My daughter is not present. She is one of the dearest girls in this State, and one of the most intelligent. Still, now that she has her diploma, she is not the girl she was four years ago. I saw her carry a pile of her books into a field that she thought was too far off for me to see. There she made a bonfire, threw the books in and stood by them till they were a heap of ashes. She remarked in the evening that she might as well be resigned to her fate, that we had no society, and if we had, it wouldn't be the kind she could enjoy. She does not like our pictures and says the colors of the parlor hurt her eyes, and as for her father, his manners annoy her beyond expression."

"What a horrid girl she must be," said Annabel under her breath to a girl seated beside her on the veranda steps.

"She isn't properly adjusted," said the other, "and she seems ungrateful. I don't really think she is, though it appears so." The older women did not hear this exchange of sentiment.

How to Remedy It

Mrs. Elderbury had a consoling word for the puzzled mother. "You must remind yourself," she said, "that your daughter's life during her college days has been both varied and picturesque, and that at the same time it has been systematic and ordered by schedule. She has been one among many, all of whom have been engaged in a common determination to do and be what seemed to them important and stimulating. The life at home is in contrast, and by comparison lacks zest and flavor. Possibly you have not taken much interest in the studies in which the child excelled. If you were ill, if her father broke his arm or leg, if you would turn over the housekeeping to her for a while and go away on a visit, if you could bring yourself to let her reconstruct the parlor, if you could give this dear daughter an outlet for her pent-up energy, I fancy she would be less restless and be transformed into her own bright self. What I advise is the result of observation. Fill your house with company this summer. Give that girl of yours more responsibility in entertaining her friends."

"We are pretty busy at home, and I can't quite see how I am to adjust the claims of the farm with the claims of my Mary. Still," said the farmer's wife, "you have helped me, and I am willing to admit that lately I have been too narrow and have expected that my daughter should be a reproduction of myself. You are right, Mrs. Elderbury. We can afford to do the best for Mary, and Father and I will set about it, I am sure. I can't make up my mind to go off on a visit in July, and as for his breaking his leg, it isn't to be thought of at any season. If after a fair trial of life at home, our daughter is still certain that she must take flight and try her powers somewhere else, we'll have to let her leave us for a time. I must try to understand her point of view."

Before they separated, the mothers and daughters had grown closer together, and it had been borne in upon the older and the younger that something must be yielded, something sacrificed and something attempted by all concerned in home life if completeness of harmony were to be attained. Each generation sees life from its special hill-top; each must try, in the words of an old Latin poet, to see life steadily and see it whole.

The End of the Series

This is the last instalment of the Home Interests' Club. Mrs. Margaret Elizabeth Sangster died on the evening of June 3d. We shall all miss her. She stood for gentleness, sympathy, loving-kindness; things better than stocks, bonds and mortgages. That our legacies to the world may bear the same sort of interest as Mrs. Sangster's is no ignoble wish.

It is with real sorrow we have come to the parting of her way from ours, for she was the friend of every one of us.



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BOSS OVEN

The Oven with the Window

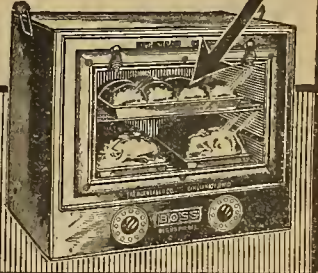
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OUR YOUNG FOLKS' DEPARTMENT

Conducted by Cousin Sally



How They Kept Mammy Bear's Secret

By Alice Jean Cleator

"LOOK heah, my pickaninnies," say Miz Bear to her fo' children, "I'se gwine to de store to git some truck fo' de Sat'day's bakin', an' ef you'll shore promise to be good twell I kims back, I'll tell yo' a secret! An' dere ain't nobody in dis worl' what knows hit 'ceptin' yo' ol' mammy!"

"Oh, Mammy, a shore-nuff secret!" says all de bear children to onct, drappin' dey spoons in de 'lasses tin what dey's been gittin' de scrapin's from.

"Yis, a shore-nuff secret," 'plys dey mammy, puttin' on her hat an' jacket, "but yo' all must p'intedly un'stand dat yo' mustn't tell dem fox chillen 'crost de road."

"Oh, Mammy," speaks up de littlest bear, rollin' he eyes an' lookin' mighty skeert, "am—am—it 'bout ghos'es or sperrits, Mammy?"

"Lawsy, Granny, dat's all my honey-babe knows 'bout ghos'es an' sperrits," say Miz Bear. "Ghos'es an' sperrits doan' live in de tiptop o' de cupboard, does dey? An' ghos'es an' sperrits ain' made o' wite frostin's, is dey? Now, hole up yo' heads an' listen! De secret am blackberry tarts! Dat's what it am! Blackberry tarts! When I kims home, I'll make some beat biscuit an' honey rolls, an' all de good eatin' what yo' ol' mammy kin bake!"

So Miz Bear starts fo' de grocery-sto'. De fo' bear chillen stan's in a row outside de gate watchin' dey mammy down de road. She waves her basket, an' dey waves dey han's an' hollers, "Yis, we'll be good twell yo' kims home, Mammy! We not tell de secret! Sartin shore, Mammy!"

Wal, Miz Bear been gone 'bout five minutes when de fox chillen kims ober to play wif de bears.

"Our mammy's gone," say de littlest bear, "An' we knows sumpin! Hit's a secret, an she done tole us 'fore she went. But we ain' gwine tell yo' all what it am. 'Caze our mammy telled us not!"

"Huh," speak up de nex' biggest o' de bear chillens, "yo' foxes ain' got a mom-

mer what tells yo' secrets made o' wite frostin's what's in tiptop o' de cupboard!"

"Sh!" say one de odder bears. "Doan' yo' be tellin' whar dem blackberry tarts am! Our mammy tole us not. 'Member dat, now."

Wal, de foxes am mighty cute, an' dey knowed now what de secret am, but dey jis tips each odder de wink an' doan' lef on nuffin.

"Lef's play ol' gray wolf," says one de foxes. "One us foxes'll be de ketcher an' all de res' hides."

So de bigges' fox he's de ketcher an' goes shet he eyes while all de res' gits whar dey hid-in's is.

"Look heah," whisper one de foxes to de fo' bears, "S'pose yo' bears all hides in de corn-house. I'll shet de do', an' when de ketcher opens de do' to see ef anybody dere, all fo' ob yo' pop out to onct an' holler an' ketch him, shore." Dat tickles de bears, an' dey hustles inter de corn-house.

De fox he snickers to heself an' locks 'em in tight. Den de foxes all goes an' gits to de cupboard an' eats up all dem blackberry tarts. Den dey runs home, dey does.

Purt soon Mammy Bear kims home an' finds de bear chillen shet up in de corn-house an' squealin' like pigs fo' dey buttermilk. You kin 'magine how 'twas."

She lefs 'em all out an' boxes dey ears

all round an' makes 'em all set in dey chairs a spell. Den she say, "Now, look heah, my honey-babes. Mammy loves yo' all jis's much as 'fore she went to de grocery-sto' to git de truck fo' de Sat'day's bakin'.

She did de correctifyin' fo' yo' good, 'caze she doan' want her pickaninnies to git inter de chains an' shackles o' disobejence to dey mommer. Now, hole up yo' heads an' listen. When yo' is tole a secret, hole onto dat secret an' doan' lef out de teenchiest mite o' dat reformation what's been telled yo'. 'Caze ef yo' does, de res' dat secret am shore to foller, an' hit'll be gone scat! 'fore yo' knows hit!

"Keepin' a secret am like a cat in a bag. Ef he on'y kin git he head onto dat bag, de res' dat cat am shore gwine to foller 'fore yo' kin say "Granny sakes."

Wal, when Mammy Bear gits through de speechment, she puts on de kittle an' makes de honey rolls an' de beat biscuit an' a heap mo' blackberry tarts. What a feas' dat was!

De new-made blackberry tarts tasted des two times ez good as de tarts what de fox chillen done eat up. An' de beat biscuit was dat light it jes' mos' floated away offen de plate. An' der nevah was sich honey rolls made as Mammy Bear made dat afternoon. Wish I'd been dere.

An' when dey's all settin' roun' de table

eatin' all de good things what Mammy Bear's cooked up, de littlest bear he speak up an' say, a-smilin' all ober he face, "Oh, Mammy, we-all is havin' jis as good a time as ef dem fox chillen hadn't got to de tiptop o' dat cupboard an' etted our secret all up, isn't we, Mammy?"

The Foolish Rooster

IT WAS a noble rooster, On a bright unclouded day, Who heard a coward chicken Upon the horse-trough say: "The water's far beyond my reach. There is no way to take it." "Oh, fudge!" exclaimed the rooster brave, "I'll find a way or make it!"

He hopped upon the horse-trough, He balanced on the top, And then with mighty effort, Which ended in a flop, He landed in the water, And his thirst he then could slake it, But never more was heard to say: "I'll find a way or make it!"—L. P.

Cousin Sally's Letter

DEAR COUSINS: Now that July 4th is past and gone, we can begin to think of the summer's work. On this page you will see an interesting bread recipe from the best girl bread-maker in Iowa. You see, she's only twelve. How many of my girl cousins intend trying her recipe?

As for the boys, I'm sure the vegetable-gardens, the chores and the errands will keep them too busy to fall into much mischief. But this I want to advise all of you, if possible, learn to swim this summer, I mean girls as well as boys. Every girl and boy should learn how to swim. I know it's hard to learn to swim if there's no river or pond close by. But do your best; learn in shallow water, and write about it, too. Yours affectionately, COUSIN SALLY.



"I'se gwine to de store"

Iowa's Best Little Bread-Maker

By Jessie Field

County Superintendent, Page County Schools.

FOR two years now the champion boy corn-growers of the Southern States have been honored by trips to Washington and Diplomas of Honor presented in person by the Secretary of Agriculture. And this has resulted in a great impetus for better agriculture. But it remained for Iowa to offer to send to Washington the champion bread-maker of the State and her mother.

For what does it profit our country life to raise more corn to the acre and better stock, except we use that added money for better homes, that we may have stronger manhood, and how may we have better homes save by teaching our girls the homely, every-day duties that mark the successful home-keeper?

This the Extension Department of the Iowa State College of Agriculture real-

ized, and so for the past year they have been sending out bulletins to the thousands of girls in their State Girls' Club, teaching them, among other things, how to make bread and how to judge bread. Then, as a close for the year's work, the girls of the State came to the college during the winter short course in January and baked bread there to see who could make the best loaf of bread.

A number of girls tried, and their bread was a credit to the instruction which they had received. The winner, Lois Edmonds, of Page County, Iowa, is but twelve years old. She is a happy, wholesome, sensible little country girl of that marked ability which is not unusual in the best country homes. Her bread scored ninety-three points out of a possible hundred, which is considered a very high record.

Lois used the recipe which was sent out to the girls by the Extension Department. She used flour manufactured in her home county. The recipe is as follows:

Two tablespoonfuls of butter, one tablespoonful of sugar, two cupfuls of scalded milk, one tablespoonful of salt and half a cake of yeast (compressed). Dissolve the yeast-cake in four tablespoonfuls of water that is no warmer than fresh milk. Scald the milk. Place sugar, salt and butter in a bread-bowl. Add the milk when it is no warmer than fresh milk. Add the dissolved yeast. Begin to add flour gradually, and beat thoroughly as the flour is added. Beat out all the lumps, and make the dough look smooth. Add flour until dough can be worked without sticking to hands or board.

Knead lightly and with a quick motion of the hands until the dough is elastic and you hear a snapping, cracking sound. Place the bread in a bowl, and cover with a towel. Keep warm, never hot and never cold. Let it rise until it has doubled in size. Then knead again, and make into two loaves. Set the loaves in a warm place, and allow them to double in size. The oven should be hot enough to brown a piece of letter-paper in from eight to ten minutes. A loaf this size should bake about fifty minutes, and the oven should be cooler during the last fifteen minutes.

This was scored by the Iowa score-card, which is given, as it may be of interest as indicating the standard set.

BREAD SCORE-CARD	
Flavor	20 points
Doughiness and moisture	20 "
Texture and grain.....	20 "
Lightness	20 "
Sweetness	5 "
Color	5 "
Crust	5 "
Shape and size	5 "
Total	100 points

Lois is such a little girl that she had to get on her knees on the stool in the cooking laboratory, in order to reach to knead her bread. She is not only a good bread-maker, but skilful in the performance of all home duties, a good scholar and gracious and unselfish toward others. At the Page County Industrial Exposition she had the best cake baked by a girl under fourteen. The merchants of the county had been requested to mention the Industrial Exposition in their advertisements, and it was promised that the one making the cleverest mention should have a cake baked by the girl who was judged to be the best cake-baker.

The winning merchant was decided on the second day of the exposition, and on that night, when all the farmers and their families were in for their annual oyster-supper, Lois was told about it. The next day was the Boys' and Girls' Session, and before it began she appeared with a large tin pan in her arms.

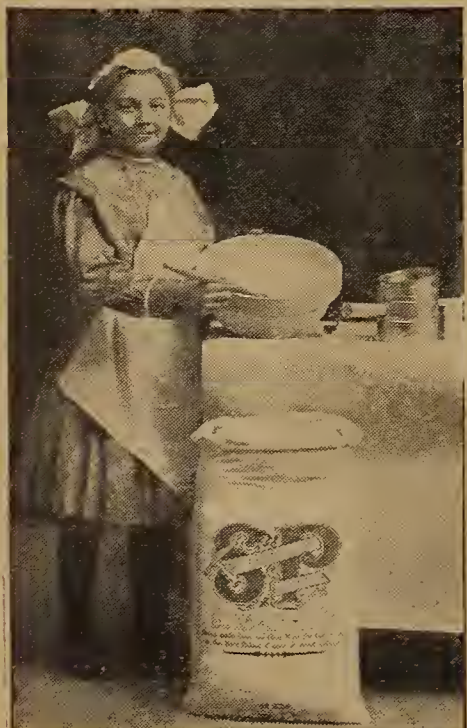
"What have you there?" I asked her. "The cake I was to bake for Mr. Beech," she answered. And it seemed very much a matter of course to her that she should get up that morning and bake one of her delicious Lady Baltimore cakes, before coming in the four miles from her country home to attend the Boys' and Girls' Session.

The cake was duly delivered, and the merchant was so delighted with it that he sent the little girl who baked it an order for a dollar's worth of merchandise from his store. He told me that he had done this, so the next time I saw her, I asked her what she decided to get with it. Her blue eyes dropped, and the soft, long lashes shadowed her pink cheeks as she

said, "I bought some gifts and things for the girls in our school who didn't get any prizes."

Lois Edmonds, Iowa's champion bread-maker, is the daughter of one of the highest types of American homes—the ideal country home. Her father is a leader in all that is best for agricultural advancement, her mother is a true home-maker, with rare refinement and social grace, a desire to be of service in the work to give country boys and girls the best chance educationally and a love for her children, shown by putting the highest and best things first.

Then there is the fine old grandfather in the home, too. He is the man who gave more than any other farmer in the county for the support of the Farmers' Institute the past year. It was to him that Lois carried home the prize bread that she had baked. She said to me joyously, "Won't grandpa be glad?"



Lois Edmonds making the loaf of bread



Two prize-winners, the girl and the bread

The Gift Club

Jean West
Secretary



AND still it grows! Talk about Jack and the Beanstalk! This Gift Club of ours bids fair to outdo even that famous vegetable! The Club that started last October with only a handful of members has traveled ahead with seven-league boots! We are all so proud that we've made such a wonderful success of it and that we've shown so many FARM AND FIRESIDE girls how very easy it is for them to get all our lovely gifts without spending a penny for them!

Are you one of the onlookers, and have you wondered for a long time just what our Club girls do to get all the lovely gifts that I have stored away in my Gift Cupboard? Do "give it up," and stop trying to solve the puzzle. It isn't likely that you will ever guess it, and when at last you do write and find out, you'll be sorry that you've wasted all this time. Read little Winnie K's letter, and see what she says about it.

DEAR MISS WEST:

If I'd only had sense enough to write you when I first read about The Gift Club, I would have been spared all these regrets that I did not join the Club sooner. But, like dozens of other girls, I kept on reading about the Club in every issue of FARM AND FIRESIDE, wondering if it could be possible and not half believing it. Finally curiosity overcame my doubts, and I wrote you! How glad I am that I did. The Club is the best thing in the world for us farm girls, and I wish that I could tell all the girls in this country about it and make them join.

And another girl writes:

This is certainly the most wonderful Club in all the world, Miss West. I never before belonged to a Club where you didn't have to pay dues and where there were absolutely no expenses! Instead of paying anything, we are constantly receiving the loveliest things imaginable!

It's true there are no dues—nothing but gain and good times for you! That's what makes it so much like a "magic club," as one of our girls said.

The following letter interested me keenly, and it gives me much joy to know that the Club is helping to bring sunshine into the lives of our girls:

It has meant so much to me to be a member of The Gift Club, dear Miss Jean. I have been a semi-invalid for a number of years, and quite naturally have been shut off from human companionship. Until I found the Club, my dog Rover was my greatest friend. I think your letters and the cheer and encouragement that I get from the Club are more to me than any of the gifts, lovely as they are. I needed a friend, and that is what you are to me.

Gracious me, here I've been rambling on, and I haven't told you a single definite thing about the Club. Any girl or woman reader of FARM AND FIRESIDE who wants to get for herself or her home some of the many little luxuries that are just beyond the family income, can earn them in The Gift Club without spending a penny. That's all there is to it. How? Ah, we keep that a secret in the Club, but I shall be very glad to whisper it in a letter—if you wish me to. Just send a postal card, asking for our dainty little booklet. It will explain everything that sounds so mysterious to you now.

Age makes no difference in the Club. There are members of all ages, from little golden-haired school-girls to silver-haired grandmothers. Any girl, after the least bit of training, will be able to do our Club's work most successfully. Do let me teach you. It's really ridiculous to call it work at all—it's just like play, and you will be delighted with it, I know. As for the gifts stored away in my Cupboard, wait until you see them! Beautiful silver, exquisite jewelry, fine leather hand-bags, pictures, Irish-lace coat-sets, clocks, china and, oh, dozens of things besides!

Now don't forget to send for that booklet to-day.

Jean West

Secretary, Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.

THE HOUSEHOLD

More Canning Experiences

By James D. Bowman

LAST year I wrote an article about my Lown experiences in canning, for the columns of FARM AND FIRESIDE. It was entitled "A Canning Factory on the Farm." Since writing that, I have been making experiments and find that there are some new directions which I can give readers of this paper, as a result of my work last fall.

There is evidently a great deal of interest in the subject of canning on the farm, judging from the letters I got from various parts of the country, not only from all over the great central farming region of the United States, but from as far south as Florida, north as Canada and east as New Hampshire. There were, also, lots of inquiries from the Far West and all the coast States from Washington to Mexico. It was rather a task to answer so many, especially as a great many forgot to enclose a stamp, but it shows not only the interest in the subject, but how thoroughly FARM AND FIRESIDE covers the country.

In view of this interest, I felt that perhaps some of you would be interested in a few of the things I learned, by experience, the past season; and I surely got lots of experience, of a kind not very pleasant, as the season was as nearly a failure as anything ever experienced about here, and the tomato crop was less than a fourth crop. But I sold my pack, what I did get up, quickly, for cash, at about fifteen or twenty per cent. advance over usual prices and could have sold ten times as much. Beans, however, do not seem to make as ready a sale as tomatoes, here at least.

Blanching the Vegetables

As my canner was a cheap one with few of the conveniences of the high-priced outfits, I was much worried about making any headway, when I had to scald tomatoes, blanch beans, etc. Those who read my former article will understand, but for those who did not I will say that blanching is simply parboiling to remove objectionable matter from certain vegetables that would otherwise spoil. The instructions with most canners say to use the process boiler for these purposes, using a wire basket for scalding and a clean bag to blanch beans, peas, etc.

It does not take much intelligence to see at a glance how impracticable this advice is.

Tomatoes, as they come from the field, are usually sandy and muddy, especially after rains. Unless every batch is carefully washed, the water in the canner will soon get so dirty that all the cans as they come out of the process are so dirty they must all be washed, taking lots of time, and worse yet, when canning beans you can hardly keep the water in the process boiler clean enough, while processing cans, to blanch beans in. Then the water soon gets brown, from the acid removed from the beans, and stains the cans. But the greatest trouble is that if you use the boiler for scalding tomatoes and blanching beans no speed can be made canning, as the same boiler must be used for exhausting and processing.

For a time I tried using a large kettle of water on a separate fire, but this required attending to two fires and the use of much more coal or wood.

At last I solved the problem by the following plan, which, by the way, is a modification of a thought picked up in FARM AND FIRESIDE:

The Way I Solved It

I got a barrel and a four-foot length of one-and-one-fourth-inch pipe from an old pump, bored a one-and-one-half-inch hole in the barrel near the bottom and screwed the pipe into the barrel. Next, I cut a hole through the side of the furnace and put the pipe through (screwing on a cap to close the end in the furnace).

It would be well to have a plug or cock in the barrel at the bottom to draw off the water and put in fresh, clean water as needed. The end of the pipe in the furnace should be slightly lower, to make sure that the water always flows to the end, where it is heated and forced out into the barrel, while more cold water takes its place with a series of little explosions, bubbling and snapping, which is caused by the heated water coming out to meet the cold inflow. With this arrangement I can boil water in the barrel almost as quickly as in the boiler. Next year I plan to use two pipes and a return connection on the ends of them. This will allow for an inflow and an outflow, besides giving more heating surface. This later idea I have not tried, but it is in use wherever water in a tank is heated by a kitchen range with a water front.

When scalding tomatoes, I use a half-bushel wire basket to dip the tomatoes in the hot water until the skins crack (no

longer). To blanch beans, or other vegetables, a basket of heavy wire, lined with fine mesh bag, answers the purpose.

Another Time-Saver

In most canners the cans are placed in the cage in tiers (mine holds four tiers) for processing. As I could only exhaust a tier at a time, letting them down till three fourths submerged for ten minutes, it took me forty-five minutes to exhaust a batch, and then while they were being processed no more could be exhausted. This made work slow. I improved on that by capping and tipping until I had a cage full, then I submerge the whole cage full in the tank for ten minutes, remove and apply the tip of a hot capper to each closed exhaust-hole. The solder would melt and each can as touched would exhaust the heated air with a little hiss; another touch of the capper to each can would reclose the vent, and I was ready to process. While they were processing, I would cap and tip another batch and have it ready. This made only a delay of fifteen to twenty minutes to exhaust a cage full, as against forty-five or fifty minutes the old way.

Beans are not exhausted, as the cans are filled with hot weak brine and immediately capped and tipped.

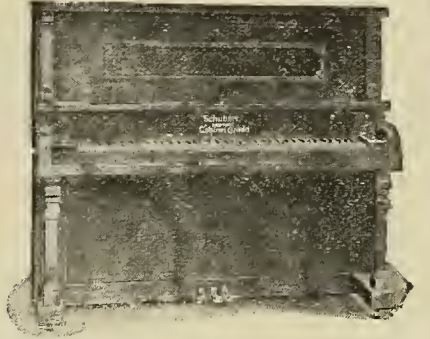
Last fall I used the heating arrangement described while butchering and soon had both tank and barrel full of boiling water.

To Destroy Ants

By L. Maude Beyer

THE best and easiest method I have ever found for destroying ants, whether they are in the house or on the lawn, is to take a large sponge, wet it and sift fine sugar all over it and lay it in the place that is infested. The ants will soon fill the sponge. Take it and sink it in a pail of water, they will then leave the sponge and rise to the top of the water and can easily be destroyed. Sprinkle more sugar on the sponge and put it in place again. This repeated a few times will soon enable the housewife to destroy all the ants.

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The Housewife's Club

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

IF YOU desire to mend a broken dish or any kind of chinaware, and no cement or glue is at hand, an excellent substitute is white enamel paint. With a small brush coat the broken edges lightly with paint, press them together tightly, then set the dish aside for several hours to allow the paint to harden. The dish will then be as good as new so far as strength is concerned, and the crack will scarcely be visible. Common house-paint may be used if nothing else is available, but it is not as adhesive as enamel, nor does it make as neat a job.

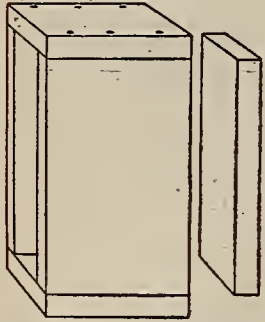
Mrs. W. C. S., Oklahoma.

Fried Eggs with Tomatoes and Onions—Take two large Spanish onions, cut in thin slices, and brown in two ounces of butter; add five large tomatoes cut into quarters. Let the mixture cook until the tomatoes are quite mashed. Fry some eggs in a frying-pan, and lay them on this mixture. Serve hot.

A. L. J., Missouri.

Fireless Cooker—If you haven't a fireless cooker, get one and be sure to use it. I use mine every day. Put your cereals in the night before, and they are ready for breakfast. Meats cook better in them than anything I ever saw. I have cooked light bread and biscuits in mine. I can fry in it, and it is most useful in cooking meats. You can't cook them as well any other way. You can have a hot dinner on Sunday and go to church. No fear need be entertained of its burning.

Mrs. J. F. H., North Carolina.



A Butter-Mold—A neighbor who sold butter discovered that he could get thirty-five cents per pound instead of twenty-five if it were put in square molds. The only one he could find in a large city cost four dollars and fifty cents, so he made one. Red

gum, about three-fourths of an inch thick, was used, the heavier the better, as it will not warp. The inside measurements are five inches long, two and three-quarters inches deep and two and three-quarters inches wide. The sides and ends are put together with screws. The bottom is left without fastening and must be very loose, as the scalding causes it to swell. To use, put the bottom on a table, fitting the frame over it, pack full of well-worked butter, level off, turn upside down, and push out of the mold, pushing the bottom piece entirely through. It is very simple, very pretty and certainly more readily sold than the round cakes. The mold, just level and full of butter, holds exactly one pound.

L. S. W., Tennessee.

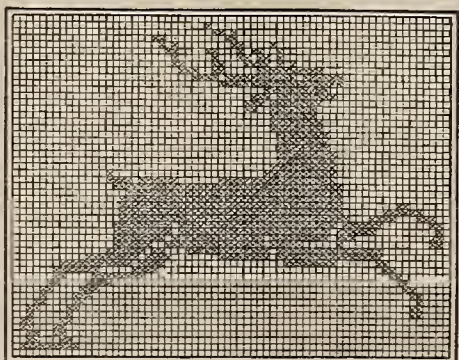
Here is a remedy for colic in infants, as well as adults. It is common table-salt. Wet the tip of the finger, and dip in salt, then apply to the sufferer's tongue just a little at first. They will soon learn to like it, and it will give relief in a few minutes. I have raised a family of seven children and have prescribed it to many others and never knew it to fail.

A. D. E., Washington.

Cross-Stitch Sofa-Pillow

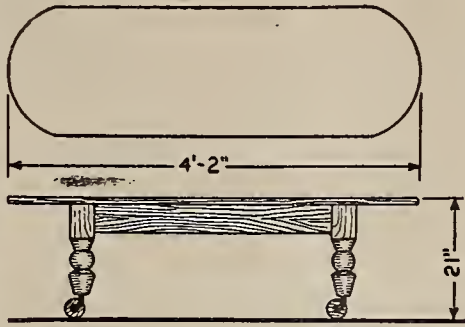
By Mrs. F. O. S.

A GOOD way to utilize left-over squares of checked gingham and chambray is to make them into sofa-cushion tops. Select a piece of gingham which contains the required number of checks for this pattern, and cross-stitch the dark checks with number eight or number twelve white knitting-cotton. Use chambray the color of the darker checks for the back of the sofa-cushion. Take a piece of quarter-inch rope long enough to reach entirely around the pillow, join the ends securely together, and cover with a strip of the chambray, leaving the edges extending past the rope far enough to insert into the seam when sewing



the cover together. The welt made by the covered rope makes an effective border, which is much less trouble than a ruffle, both in making up the pillow-top and in ironing.

This pattern requires a piece of gingham which is sixty-four checks long and fifty-two checks wide. This would make one of the new-style oblong pillows, but one can easily make a square pillow-top by placing the deer in the center of a piece of gingham sixty-four checks long and sixty-four checks wide. Pillows made in this way are much better for every-day wear than more elaborate pillow-tops, as they may be easily washed and ironed. They are very neat and inexpensive.



Wash-Bench—The drawings show my washstand or bench which was made from a discarded extension table. The table was taken apart, the leaves, top and extension fixtures removed. The legs were shortened and the ball-bearing casters replaced. The table was cut down so that the framework

was thirty-four and one-half inches by sixteen inches. Then we made a top of a board sixteen inches wide and fifty inches long and rounded at the ends. The top, after being fastened to the frame, was covered with zinc. The washstand is twenty-one inches high and can be easily pushed to the stove when the clothes are transferred from the boiler to the tub. I can move the tubs to any part of the room, and there is no heavy lifting.

Mrs. B. F. D., Michigan.



The odor of onions may be entirely taken from cooking-dishes in this way: Wash thoroughly; then fill with cold water, throw in a large handful of wood-ashes, and let them soak several hours; then wash again.

Mrs. N. D., Colorado.

Spoon Bread—Cook one third of a cupful of fresh corn-meal in two cupfuls of milk (milk and water will do), with a small spoonful of salt and a good big lump of butter. When the corn-meal has thickened, stir in the yolks of two eggs and, lastly, the well-beaten whites. Pour into well-buttered pudding-dish, and bake twenty minutes in a moderate oven.

L. F. D., New York.

If your plants stand still and do not grow, try a little ammonia in warm water three times a week.

E. M. B., Maine.

Strawberry Pudding—One-third cupful of butter, three-fourths cupful of sugar, one well-beaten egg; then mix two level teaspoonfuls of baking-powder, one and three-fourths cupfuls of flour; add to first mixture, and add one-half cupful of milk. Bake twenty-five to thirty minutes.

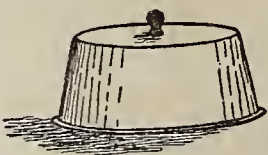
L. F. D., New York.

At this time when so many people are discarding their wooden bedsteads for brass ones, perhaps they would like to know that beautiful and useful boxes can be made from the wood. Use head and foot boards for cover and front, and the side pieces for the ends. The full width of bed is used for length of box, and dresses can be laid in without folding. A carpenter will make this in a short time, and you will have something that would cost a good many dollars if bought in the store.

Mrs. C. R. C., Ohio.

Fuel-Saver—A two-quart basin which had passed its days of usefulness was made into a useful fuel-saver. A nail was driven into the bottom of the basin, and a knob, costing one cent, such as is used on coffee-pot lids, was fastened on it. This is placed over my irons on ironing-day. They not only heat more quickly, but with less fire.

N. R., Connecticut.



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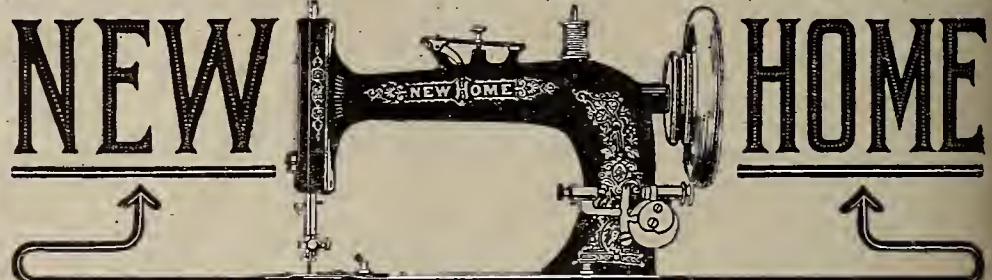
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With the Editor

HERE'S a story that seems to have more than ordinary possibilities of usefulness to the thousands of women who would like to make money for their very own. And that means almost every woman on a farm in the United States. The letter is from Mrs. W. J. B—— of Missouri, and is the tale of an actual experience.

As there are so many women to-day who, like myself, need to make some money in addition to what their husbands can give them, I shall relate my experience, hoping to help someone else solve the money-making problem.

I had read all the articles on this question which I could find in the various magazines, but as I had very little time after doing my housework and was in poor health, it seemed to me that there was a way for other women to make money, but none for me.

I know whatever one does undertake to do that she must know how to do well, or fail. There is plenty of room on the top round of the ladder, but the lower ones are always crowded.

I bought a sow from an old colored man for three dollars. She was not much but skin and bones, but she was of good stock and soon developed into a nice-looking hog. I had her bred, and in due time she brought nine little pigs. Up to this time I had just fed her on slop, potato-parings, etc. As we kept a cow, sometimes I had a little milk to pour in the slop. After the little pigs came, I began adding a little shipstuff to the slop.

I raised all the pigs, and when they were old enough to wean, I sold seven of them for twenty-one dollars. The two remaining pigs were kept and also the old sow, which I continued to feed on slop with just a little shipstuff added, and when fall came, I had three fine hogs.

My husband became interested in the hog-raising scheme and told me he would finish the fattening process with corn, feeding the three for one of them. One must feed corn in finishing the fattening process to have good, solid, fat hogs.

I accepted my husband's offer, and at killing-time he bought the other young hog, paying me the market price for it, which was ten dollars. I sold the old sow for twelve dollars, which made a total of forty-three dollars in ten and a half months. My expenses were three dollars for the sow and two dollars spent for shipstuff, leaving me a clear profit of thirty-eight dollars. Besides, we had plenty of fresh meat during the winter months and lard enough to last almost a year. The hams we saved for summer, and so our meat-bill was comparatively small during these months.

Then I became very ill, my illness culminating in an operation, from which I am now slowly recovering. With returning health comes the old desire "to make money," so I am starting again with two sow pigs. Could I have remained well and continued my hog-raising, just think what I might have made during the past two years when hogs were selling at such high prices! Women who live in the country have the advantage of us who live in town. Hog-raising is much easier than raising poultry, as one does not miss the time spent in feeding them, and the children can assist.

Now this isn't a J. Pierpont Morgan deal, by any means, but forty-three dollars means a good deal to many a woman. It means a new sewing-machine, or a winter dress of better quality, or a lot of Christmas presents, or a cabinet organ, or nice hats for all the women-folks, or something unexpected in the way of a present for the husband—something that he won't know about by having been asked for the money for its price.

Forty-three dollars is forty-three dollars—and when it comes to a woman who is habitually short of money and that by her own efforts, it is about eighty-six dollars in comparison with money doled out by a husband who gets the doling and doleful habit of action because money comes hard.

What Mrs. W. J. B—— really did was to add forty-three dollars to the family income by the use of produce which would not have been in any degree productive if she had not entered upon this swine speculation.

Her case is not a very rare one, for a great many farmers' wives and farmers' daughters are making pin-money and often something more than pin-money by hog-growing. She is not alone, either, in thinking that the hog-money comes easier than the chicken-money. There's the danger of cholera, of course; but if hogs are properly fed and pastured, that is about the only obstacle in the way of success with hogs. Some women think hogs dirty and filthy as compared with chickens. Well, the chicken-house is no rose-geranium itself; and the hog, when found in a state of filth and dirt, is generally in that condition because of the way he is kept. Hogs like clean mud and good, fresh dirt to root in, and given a good chance, they compare in cleanliness with any other domestic animal. And the money they bring is perfectly clean and sanitary.

THIS field for women has many advantages. Hogs are always marketable. The woman who can get a start with pure-breds and will study their breeding may gradually work into a good trade in breeding stock if she desires. Any woman who can show profits for herself in hogs is likely to win the active coöperation of her husband. On farms where the hog business is neglected, her opportunity is peculiarly good. She may show the way to better farming for her husband.

The secret of successful hog-raising is to make the swine harvest most of their feed—in other words, feed them largely on pasture. I would suggest that women entering this side-line study the matter of making pork cheaply by forage crops.

Suppose the pigs are farrowed in March or April so that they will be big enough to eat the first pasture. Early grazing for them can be provided through a patch of winter rye, but if the farm is far enough south, a little field of crimson clover will be just as early and a stronger feed. Have a patch of red clover to turn them on when the rye or clover is gone, and sow the rye or crimson-clover field to cow-peas. Or, if it is too far north for that, put in Canadian field-peas and oats early in place of this. This crop will be growing while the sows and the growing pigs are living on the red clover. Turn them on a patch of rape sowed early for the purpose, and let them eat it until the cow-peas or Canadian field-peas are getting pretty well matured, after which they will fatten on peas and pea-vines. When these are gone, have a patch of corn, into which turn the sows and shoats, letting them eat it, stalks, ears and all, making them eat it pretty cleanly by giving them access to only a week's feed at a time by the use of movable fences. Sow every field in the rotation to some cover crop. Provide for the next year's patches of crimson clover and red clover. Look after the manuring of the land.

Give the sows and pigs enough corn or other grain to balance the feed all the time—it won't take much. And by November you will have a nice lot of cheaply grown hogs to turn off.

And if the farm is south of the line of central Iowa, a patch of Spanish peanuts will ripen in time to carry the hogs to the point where corn is needed to finish them. Turn the swine right in, and let them harvest the peanuts themselves. Sow rape in the corn, or in a convenient field of small grain for after harvest. Get bulletins on the subject, and study it. One of these days your husband may find you making the money for the farm.

Robert Quick

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Getting a Start in Soy-Beans

THE soy-bean is at least as valuable as any of the legumes, and in many localities pays better than any other. It is capable of being made a staple grain crop and is a great soil-renovator. It is a cranky crop on soil which has not been inoculated with its peculiar bacterium, which differs greatly from the bacteria of other pod-bearers. There is good reason for thinking that the bacteria of clover, alfalfa, cow-peas, sweet clover and the ordinary wild vetches and beans and such legumes as the locust tree are able to adapt themselves to other plants, so that one crop to some extent inoculates for any other. But the soy-bean inoculation is so far different from the rest that the plant must have its own bacteria, or it cannot take nitrogen from the air. The Kentucky Experiment Station has found, however, that the first crop of soy-beans on any field will have a few nodules on the roots, and that the next year the inoculation for the second crop will be found perfect. The lesson in this to the average farmer is to plant a small patch of soy-beans at the first opportunity, and by following this with another crop he will have a field from which he can take soil for inoculating the rest of his farm as found desirable. The same method will work well with alfalfa and other legumes. Every farm should have, at least, a small patch well inoculated by repeated plantings with the bacteria of all the good leguminous crops.

Grasses for the South

EVERY northern farmer, when he goes south, is struck by the scarcity of grass and of good meadows and pastures. Hay is always high in the South. Such a thing as the tall, waving northern meadow, with the dark clover in the bottom is almost unknown in Dixie, outside of certain favored locations. But last year, in South Carolina, a hundred farmers sowed grass, in cooperation with the Department of Agriculture, with good success. The seed sown was, in each case, half a bushel of orchard-grass, half a bushel of tall meadow oat-grass, half a bushel of Italian rye-grass and ten pounds of red clover per acre. This enormously heavy seeding was thought necessary in order to get a stand from the start. A ton of lime and four hundred pounds of commercial fertilizer were applied to each acre. The crop this year will vary from two and a half to four tons to the acre. The movement promises to spread until these communities will produce hay not only for farm-horses, but for stock-raising.

Forgetting Our Treasures

A CINCINNATI woman recently killed herself because she believed herself to have been robbed of, or to have lost, a small sum of money. After her death the money was found in a book where she had placed it for safekeeping.

Have we not all treasures which we have forgotten? Do we not all feel the burden of worries and losses which are, like this woman's, more in ourselves than in our fate?

In every business are possibilities which, like the money laid away in the book, are merely out of sight, not inaccessible or lost. In every farm are possibilities of profit which are out of sight merely because they have not been rightly sought. It may be that the thing which will bring the treasures to light is intensive farming. It may be that the farmer is trying to follow the local fashion in farming when he should strike out for himself. It may be that his system of soil-management is one which, while it was good enough for the days of virgin soil, needs to be altered to cope with the depletion of long tillage. It may be that a silo is needed. It may

be that better equipment in the house would turn drudgery into comfort, and make the farm a good place, instead of a bad one, in which to live. It is, in nine cases out of ten, a matter of thought and study. Many a farmer works so hard and so steadily that he cannot find time to look for the treasure hidden in the closed book of his acres. Open the book by thought. Take expert advice. Read your farm paper. Send for good bulletins when they promise to light up the darkness of your problems. You may have lost the treasure. You may have been robbed. But, unless you are a very wonderful farmer indeed, you will find unsuspected riches in the closed book of the farm if you will only open its pages and take the time to study them, as a lawyer studies his cases or a preacher his sermons. A certain sort of farming may be done with the hands only. But he who does not use his brain, too, will fail.

A Thought of the Value of Flowers



THERE are many homes just like this one. A few flowers here means happiness far beyond what you who are surrounded with nature's bounties may think or dream of. The shut-in children need these touches of nature. "The buildings won't let them see the stars, and the pavement won't let the lilies grow at their feet." But perhaps you can send some flowers to them. The National Plant, Flower and Fruit Guild, 70 Fifth Avenue, New York City, is directing this work of supplying flowers to those who are shut in by cities.

What Ruralized Rural Schools Will Do

A BULLETIN from the North Dakota Agricultural College tells in concrete form of facts which speak louder for ruralizing the rural schools than reams of treatises could do. Several years ago 157 country boys and 174 country girls in Wright County, Iowa, were asked what they meant to do as a life-work. All but seven of the boys said that they "would have nothing to do with farming." All but eleven of the girls gave a similar verdict against the life in which they had been reared and of which they knew most. During the next three years, through the efforts of a fine county superintendent, the schools were made over into real country schools by the teaching of agriculture and home economics. The same questions were then put to the same pupils. This time 163 out of 174 boys and 161 out of 178 girls said they were planning to remain on the farm.

Within ten years, if the Page Vocational Education Bill passes, we are convinced that a similar revolution will have taken place over the entire nation through the teaching of the things of real life to the country children. We suggest to the agricultural college professors who are lined up with the National Soil Fertility League against the Page Bill and for the Smith-Lever Bill, which proposes to help the experiment stations only, that here is the answer to all they say. Educate the children, and the colleges and the fertility of the soil will be taken care of.

Absurd as It May Seem

THE extent to which the courts rule us and make our laws is startlingly demonstrated by the decision of the Supreme Court of the United States in the mimeograph case decided in March. The owner of a patent mimeograph sold it under a contract that the owner of the machine was forbidden to use any ink with it except that bought of the patentee. It was the same sort of arrangement which would exist if a binder were sold under restrictions confining the farmer to the twine made by the patentee of the harvester.

Such a decision brings home to us at once the extent to which we are affected in the daily walks of life by court decisions. This decision was handed down by four judges. Three judges disagreed with the decree. The Chief Justice asserted that "untold evils" may result from the decision. The theory of the law is that the three were wrong, eternally and irrevocably wrong, and the four as clearly eternally and irrevocably right.

Under this decision, any patented article which becomes, after it appears, a necessity, like the reaper, or the sewing-machine, or the cotton-gin, or the telephone in cities, may become the agency for perpetrating the most galling tyranny. There would seem to be no legal reason why the Shoe Machinery Combine could not require all leather used in manufacturing under its licenses to be bought of it. Wool, silk and cotton may be monopolized by the patentees of looms. The owner of the patent of a specially economical mechanism for converting coal into heat might put the coal-supplies of the country under his heel. And why, under this law, may not the man who devises a better system of grinding wheat than the roller process, force all wheat-growers to sell through him?

This may seem visionary; but the Chief Justice of the United States said in the mimeograph case that, under the law as laid down by the four who rendered the opinion, there is no reason why the patentee of a cooking-stove might not require all food cooked on it to be bought of him!

Fortunately, this is not a constitutional point, and therefore the matter may be cured by act of Congress. If it were a matter of constitutional law, there would be no remedy save by an amendment of the Constitution—and that is a thing almost impossible.

Here is a chance for Congress to rise to the emergency and do good and necessary work.

Dry-Farming Grain Crops

EASTERN and northern farmers can scarcely realize the importance of the sorghums—Kafir-corn, milo maize and their cousins—in the more arid regions of the West and Southwest. In Oklahoma, banks are requiring agreements from farmers taking out loans that they will plant and properly care for one acre of Kafir-corn or milo maize for each ten dollars borrowed. "Those who did this," says one banker, "in the spring of 1911, did not come in and ask the banks to take their live stock and release the chattel mortgages covering them. They paid the notes instead."

The grain sorghums—resembling broom-corn in general appearance—will wait over a drought and start growing again when the rain comes. The grain has ninety per cent. of the feeding value of corn and yields about as well in bushels—from thirty-five to fifty bushels to the acre.

While better grain and forage crops are supposed to be available in the humid regions, it would appear to be worth the while of farmers in regions south of the latitude of forty-two degrees, and where corn often suffers from drought, to try out the grain sorghums.

Rat-Proof Corn-Cribs Will Save Many Millions

Making Corn-Cribs Rat-Proof

By C. F. Chase

RATS will jump two and one half to three feet high and climb anything but smooth metal; therefore, a rat-proof crib must be on rat-protected posts, or built to keep rats from climbing the sides. A crib placed on posts requires heavier timbers to support the joists than one placed on ordinary foundation wall. The posts should not be closer than four feet. Each post should be set in the ground three or more feet and should rest on a stone or concrete base. An inverted cup-shaped piece of metal is placed over the top of the posts. Timbers for supporting the crib are secured to the posts over the sheet metal or pans. Rats will climb the posts, but, since they are unable to pass the tin, cannot reach the crib. The steps for this crib must be removable. Loose boards or boxes should not be leaned against it, as either will give the rodents an opportunity to get in, and once in they are hard to control. This kind of crib will keep mice out as well as rats, but is not practical as a large crib for the corn-belt States.

It is comparatively easy to make a crib with a tight floor rat-proof by carefully nailing about the sides at the bottom one width of ordinary twenty-eight-gage sheet iron. It will be necessary to nail this smoothly at the joints, or mice will have little trouble getting in. With this around the crib, the doorways are rather troublesome—inconvenient, at least. By this method it will cost approximately five dollars to make perfectly rat-proof a one-thousand-bushel crib which is built with a tight floor.

Rats are frequently bad in cribs where the floor is on the ground or close enough to afford a good hiding-place. Rats thrive in damp places, but not in garrets or dry cribs, unless they have easy access to dark, damp holes in the ground. By taking advantage of this peculiarity of rats it is possible to construct, for the ordinary price, a corn-crib which, though not entirely rat-proof, is one to which rats seldom go or do any damage. Such a crib is shown in cross-section in Fig. 4 and the foundation plan in Fig. 5. The foundation walls of this crib can be of masonry, brick or concrete, using cement mortar in case either of the two former are used. The walls are one foot above ground, making all the framework one foot clear of the ground and the first opening two feet ten inches high when ten-inch joists are used. The open space under the crib allows free circulation of air, free access to cats and dogs, and does away with hiding-places for rodents.

This crib, though not rat-proof, affords good protection against them. The writer knows of a crib of this type in southeastern Nebraska which was built in 1898 and which has been filled with corn every season save one. Rats have never been known to do any damage in it, while near by, in a round picket-fencing crib with the floor on the ground, they have bred and thrived.

This style of foundation has other advantages. The same joist will safely hold four times the load of that with the common wall, and moisture cannot gather around the sill and cause it to rot.

If one happens to be located near a wharf, shop town or slaughter-house where rats are especially bad, it is advisable to tack on sheet iron as mentioned above. For the great majority of farms of the corn-belt States the double crib, placed on a foundation as shown, affords the most economical and practical protection against rats known to the writer.

A Serviceable Crib

By H. C. Ramsower

THERE are corn-cribs and corn-cribs. Every farm must have some place for storing this crop, and it is done in every sort of building, from the rail pen without a roof to the modern circular, sheet-iron crib. The corn-crib is usually a building by itself, or, at most, in connection with a buggy or wagon shed.

The first thought in its construction should be its rat-proof qualities. Thousands of dollars are destroyed each year in our corn-cribs by rats. It is possible, though indeed a hard task, to keep our corn free from their depredations. Then, too, the crib must be as open as possible, to permit the thorough drying out of the corn. This feature is much more desirable some seasons than others, but its necessity is always felt. If, in addition to these two main points, the crib can be located and constructed so that it is convenient

in every respect and withal cheaply built, we are approaching the ideal, we are attaining the practical. Give considerable thought to the location of the crib. It should be handy to the horse-stable, the feeding-floor and feed-grinder. "Steps saved are money earned," and here is a source of considerable income on every farm of any size. Figs. 1, 2 and 3 show a crib which is

put a 2-foot strip of galvanized roofing. This will effectually prevent the entrance of rats. The loft above may be floored over and used for grain-bins, storage of seed-corn, and the like.

Many farmers will desire conveniences and devices we have not mentioned. Many will find the dimensions here outlined unsuitable for their working conditions. The size of this crib can be changed, of course, to suit the case in question. This bill of material is figured for the plans shown in Figs. 1, 2 and 3:

6	pieces,	5 in. by 5 in. by 14 ft.
6	"	5 " " 5 " " 12 "
4	"	4 " " 4 " " 12 "
16	"	5 " " 5 " " 16 "
4	"	5 " " 5 " " 6 "
3	"	5 " " 5 " " 22 "
20	"	4 " " 4 " " 14 "
8	"	4 " " 4 " " 3 "
44	"	2 " " 8 " " 6 "
28	"	2 " " 5 " " 30 "
32	"	2 " " 6 " " 14 "
896	feet of	sheeting
9	squares of	shingles
600	ft.	7/8 in. by 3 in. by 12 ft.
500	"	7/8 " " 3 " " 10 "
400	"	doors and gables

Protecting the Corn

By Willis O. Wing

THE ideal plan is to select the seed-corn from the stalk before the corn is cut. We do this for part of our seed, and we also select a great deal as the general crop is being husked. One can at husking-time find the good ears, and it is astonishing how few perfect ears there are in a sixty-acre field! Perhaps there are not very many perfect men in a State of three millions of people.

Our choicest seed-ears are placed on racks that hold several bushels each. These racks have small wooden wheels that permit them being rolled about. The ears rest on wires and touch each other only at the sides. The racks are placed in a house basement with a furnace fire, and there they become very dry. The corn has a surprisingly strong germination when so stored. We try to get our seed in before it has had a hard frost on it. We put about twenty bushels in our cellar in this manner and are always easy in our minds about our seed-corn.

Nevertheless, in March our men test every ear for germination. Some ears we find to have weak germinating power, even with all this care. Such are, of course, discarded. An ear of poor seed-corn means one twelfth of an acre of poor stand or poor plants, and as expenses go in planting corn that would mean a loss of something like \$2.50. Thus our men are very usefully employed in ferreting out the ears of low vitality while the winds of March make outdoor labor unpleasant.

After testing, we shell the corn, discarding butts and tips, grade it for the planter and put it in bags, carefully hung up away from mice, ready for the planter.

Our general crop is kept mostly in round cribs raised on concrete legs. Each leg is encased in galvanized iron and so is unclimbable by rats and mice. These cribs are twelve feet or fourteen feet in diameter and have air-shafts in their centers. Corn keeps splendidly in these cribs. They are of the cheapest possible construction, as they have no frames and as the vertical 1x4-inch siding is nailed to wooden hoops. They are like barrels, with the hoops on the inside. The hoops are made by building up 1/2x4-inch boards, four thicknesses, well nailed.

The roofs are of 1-inch boards, sawed diagonally from corner to corner. The points are all put together to make a cone, then shingled. Our common farm laborers build these cribs readily, with no advice from a carpenter.

There is no reason why the round crib could not be made wider, up to 20 feet if desired, and the air-shaft in the middle larger in proportion. Our experience with various kinds of cribs places our favor with these round ones. We recommend them for corn-belt conditions.

EDITOR'S NOTE—The suggestions relative to corn-cribs given on this page are reliable. Each writer speaks from a broad experience. Professor Chase is with the Farm Mechanics Department of Kansas State Agricultural College, and Professor Ramsower is with the corresponding department of Ohio State University. Mr. Wing is farming every day in the year on one of the most successful farms in America.

FARM AND FIRESIDE will from time to time take up other questions dealing with the erection of suitable farm-buildings. When you have difficulties in building, write to our Question Department.

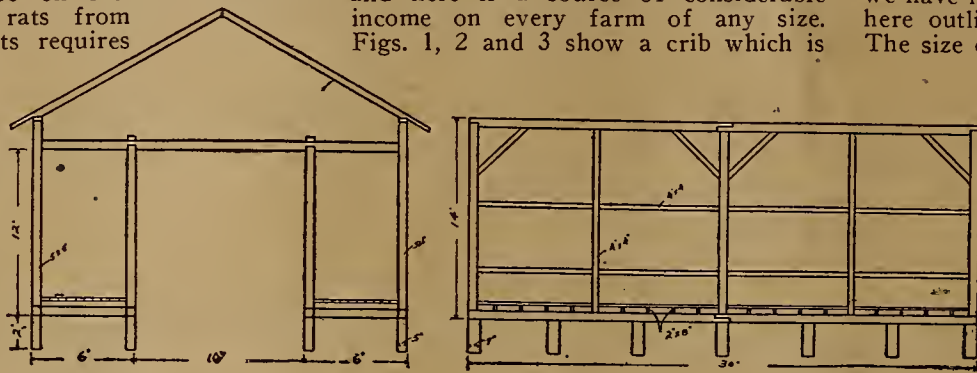


Fig. 2 Fig. 3

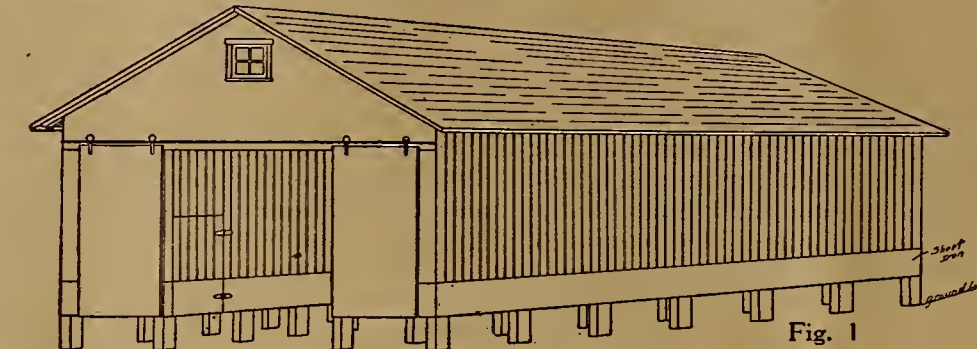
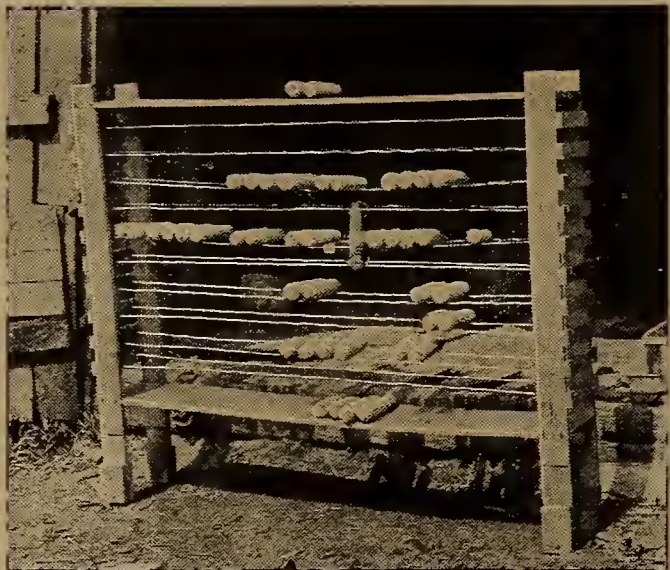


Fig. 1

quite cheap and readily adapted to almost any size of farm. When constructed after the dimensions shown, this crib will hold about nine hundred bushels to a side, allowing two and one-half cubic feet per bushel.

The framework consists of 5x5 timbers set on concrete piers. These should extend into the ground some

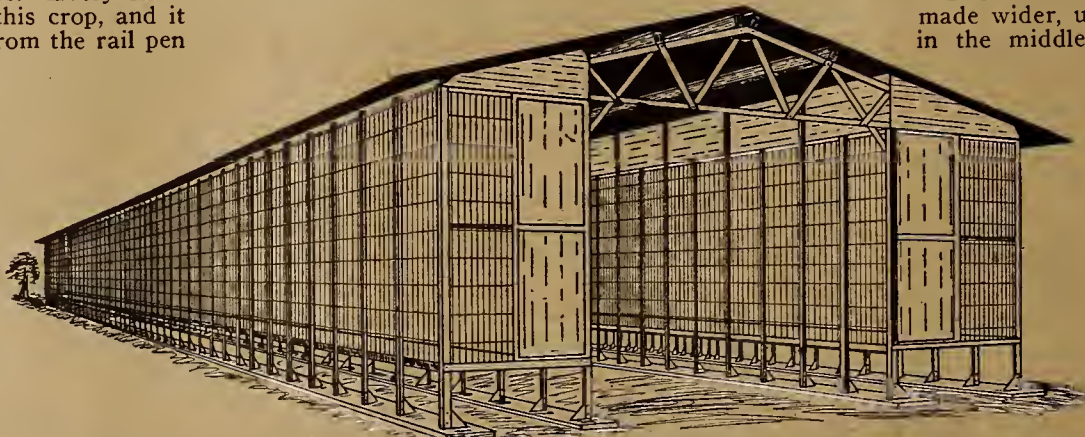


Mr. Wing's method of caring for seed-corn

12 to 20 inches. The piers should be made the same size as the sills used, in order that rats may not get a foothold on top of them and thus gnaw a hole through the floor. Wood posts might serve the purpose here, but they would not be so good as concrete.

The cribs are made 6 feet wide, with a 10-foot driveway. The piers stand 2 feet above the ground, and the frame is 14 feet to the square. Rafters are made of 2x6-inch stuff set 24 inches on centers—they are given an extra-wide eave to protect the sides of the building. The floors are 2x5s set with a 1/4-inch space between to allow free circulation of air. They are laid on 2x8-inch joists 16 inches apart. Of course, the floor is laid lengthwise of the crib.

The sheeting on the outside is put on vertically and is 3/4x3-inch stuff with a 1/4-inch space between; wider than this permits too much snow and rain to blow in. The cribs are sheeted exactly the same on the inside. In many cases this inside sheeting is put on horizontally; this is not so good, as it affords rats a better chance to run up the side. Clear around the cribs, outside and in,



A commercial form of corn-crib. Smaller sizes are, of course, in common use. The metal construction makes this-form of crib rat-proof

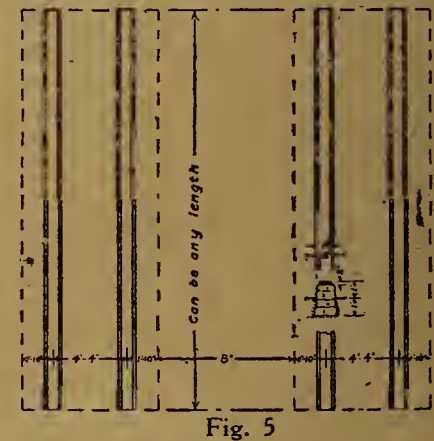


Fig. 5

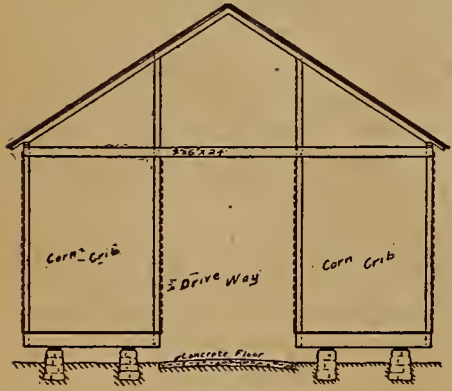


Fig. 4

The Dog That is Useful on the Farm

By J. C. Courter



IN ENGLAND and Scotland farmers learned long ago the value of dogs to farm-work. There the universal custom is to have dogs daily do their part the same as trusty hired men. Here in America, however, few farmers know the value of a well-trained dog. We are the losers because of this fact. We will

learn, of course, in years to come; and working dogs that are a daily help will replace the countless farm-help "misfits" now imposing on the farmer's generosity. If farmers realized the service a good stock-dog could be to them, the more eager would they be to change and own one.

It once happened that I worked my sheep-dogs back and forth among flocks of sheep at the same place where many farmers were assembled in convention. The farmers witnessed the work the dogs were doing as I moved my sheep from barns to pasture, through pens, gates and lanes. They were amazed to find them so helpful and wondered at their intelligence. They saw them go quietly around the edges of a pasture and gather in the sheep from far away, while I waited at the gate. They saw them herd the sheep along the lanes, doing work two men could not have done. And they profited by what they saw.

They began to believe as I have long believed: that the useful dog will eventually be on most American farms, when we get to studying more carefully for ways and means to save work and expense. It may be that on some large estates many different men are employed, thereby leaving little opportunity for anyone to train a dog. But on the average farm this is not the case.

Any farmer tired from a hard day's toil would praise the faithful dog that would go the mile or two into the pasture to bring in the cows while he prepared the feed for them. Anyone would value highly the dog that could intelligently help to drive in the stubborn hogs or straying cattle.

The Untrained Dog is a Nuisance

I do not refer to the dog we find on many farms that knows only enough to run and snap at stock, driving them in whatever direction they care to go. Such a dog is of little value, for he drives the stock away as often as he brings them back to the pen they have left. Such a dog might have developed into a good one. It was the fault of the master that he was never trained. Let no man forget how important it is to have his dog well trained and carefully educated to do his bidding. The green, untrained dog is like the unbroken colt or the new hired man. Neither is good as a real helper until taught to do as you wish him to do.

In the training of a puppy, there is a system and a method along which to work, which is important. In the elementary lessons of this method the puppy must be taught obedience, confidence in himself and in his master, and love for and desire to please his master. Few men are there who have the ability to perfectly



With the help of the dogs you can examine the sheep even in the open field

put into effect this system, but any farmer who will patiently try will generally be pleased with the results.

But before starting to discuss the training of a puppy it might be well to consider what kind of a puppy offers the greatest likelihood of developing into a useful stock-dog. We see many different types of dogs doing useful service, some mongrel curs and some pure-bred dogs. However, it is as helpful to start with a puppy from a breed generally known as stock-dogs as it is to buy, for a future race-horse, a colt from a recognized racing breed. Men have long known this, and now we have such pure breeds of stock-dogs to select from as the Scotch collies and the old English sheep-dogs. A puppy descending closely from dogs of either breed, and especially from noted individuals in either breed, offers the most likely material with which to start.

I realize that there are other strains of good stock-dogs, but the American farmer will do well if he selects his puppy from either of the breeds mentioned. He can, of course, get puppies from some of the over-sensitive, over-refined, inbred show stock, but such puppies, from families of dogs selected first of all for mere beauty and "showpoints," seldom possess the courage, the faithfulness or the ambition to work that is necessary in a serviceable stock-dog.

Given a puppy descending from good working stock, the farmer must, from the start, teach the pup himself. When developed, the dog will be a reflection of the master. So be careful that you are a good master. The lazy,

careless man will have an indifferent work-dog, and a nervous, irate, quick-tempered man will have a timid, frightened, useless dog. Practise patience and kindness, tempered with justice, firmness and a determination to first lead the puppy to understand you and then to make him do your will. As with the school-teacher who gets best results from her pupils by leading from the simple to the more complex, so it is with the farmer who



Work the young dogs alone as soon as they get the idea, but at first it may be well to tie them to older dogs

trains a stock-dog; first, he must teach the puppy the simple lessons and get its cooperation through love and firmness for the more complex.

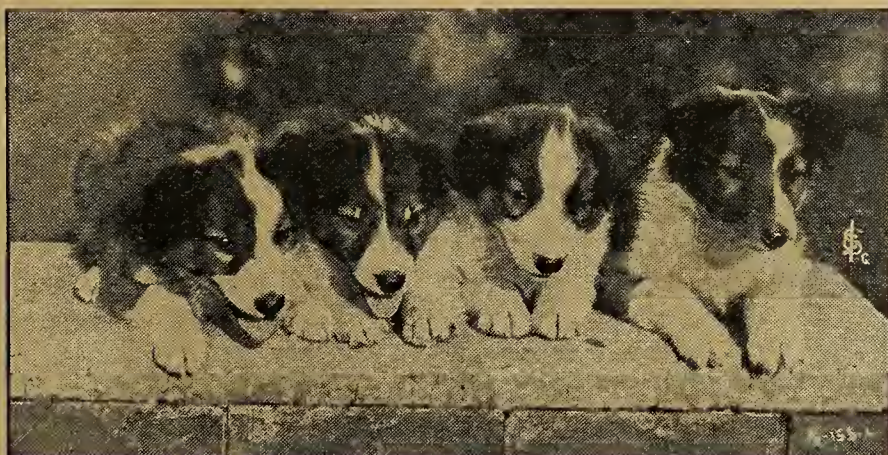
The first step in such an education is the teaching of the young dog that the farmer is his friend, yet his master. At first food, and later a caress for approval, and a scolding when he does wrong, starts this education in these primer stages of love and obedience. From his little yard or pen the pup comes when he is called at feeding-time, thus learning to come when called. The future master and trainer always feeds him when possible, for this is one of the quickest ways to the seat of his affections. The dinner and the caress teach him to come to you, and when there, a little switch will teach him the other command to "go back." Endeavor to raise your dog so that he does not fear a whip except when he does wrong. Do this by always carrying a switch, for if, from puppyhood, you train the dog to realize how you might punish him if he wilfully does contrary to your wishes, yet how you do not punish him as long as he does your will, then you are instilling in him confidence in his master.

These simple lessons are about all the average puppy can master until he is about five or six months old. Up to this time it is best to keep him in a yard or pen where he can get his exercise from play that is not destructive to the many things puppies always find to destroy. Never allow him to spend much time playing with children, for he should know but one master at first; allow him to chase the chickens a little and bark at the other stock if he cares to do so, and then put him in his pen when you wish him to stop, for a whipping at the wrong time may ruin his aggressiveness.

Train the Pup to Stop at the Right Time

Six or seven months will find the more forward pups becoming quite strong. They will be ready to follow their master about the farm. Their spirit and ambition has developed so that, if they have been kept from knowing what much play means and have been properly encouraged and led on, they show unmistakable signs of a desire to do something and to please their master. During these days you can teach the pup the first lessons; namely, to stop doing what he is doing when you say "stop," and to continue when you say, "that's right" or "all right." At this tender age it may prove somewhat difficult to make the pup comprehend the meaning of such a command, yet patient endeavor will bring its reward. I consider this one lesson the most important, for, if it is well taught, it will help explain all future commands. If, later, you are teaching the pup to go around a flock of sheep, the word "stop" will stop him from going in a wrong direction, and "all right" will tell him when he is doing the right thing.

After this might follow the lesson to lie down when you command "down." This must be understood before you endeavor to drive stock with the pup. You can

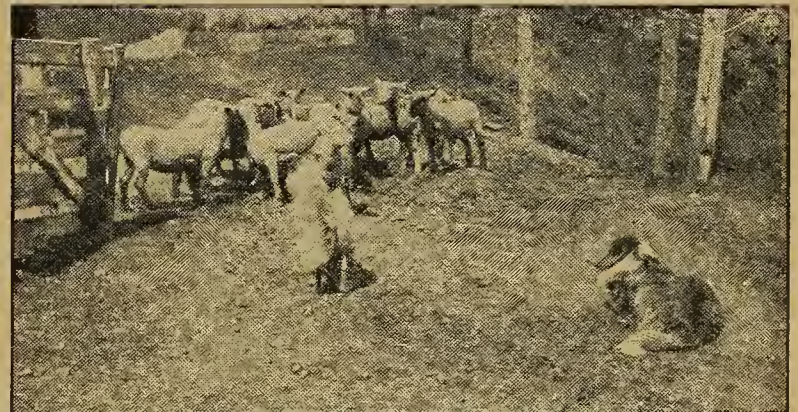


Ready to be trained for farm-work

teach it before he has developed enough to go away and do your wishes while away from your control. If he becomes a rapid driver, you can check him by calling "down," thus preventing him from driving too fast. This fast driving is a bad fault of young dogs, and especially of sheep-dogs, so plan to prevent it. Teach the dog the command of "down" by forcibly pushing him to the ground and giving the command in short, firm tones. Be kind, and use the term "all right" or "that's right" when he lies quiet, and if he gets up forcibly, pull him back and to the ground, repeating the command. When he has obeyed and caught the meaning of the command, take the puppy into a small pen or yard where he cannot run far from you if he disobeys. There teach him to lie down while you leave him. For the timid puppy I have found it best to tie him to some object, and if he does not drop when I call "down" from a distance, I return quickly and, scolding, push him down forcibly. A caress and a mouthful of food shows my approval when he does

right. So in a few short lessons he learns to drop down when I command him. Simultaneously with my voice I wave my hand down toward the floor and drop my glance to the floor also, for thus I teach the puppy to obey my voice, or the wave of my hand, or the nod of my head.

After this lesson might follow the lesson of dropping at your heel and following behind you when the command of "heel" is given. This should come early in the lessons, for, while the puppy is first learning to go around with his master, he can as well learn to follow at the heel. To show the pup what the command "heel"



Dogs soon learn to guard open gates

means, pull him in behind you, saying "heel, heel." As he starts out around in front, catch him by the hide or the tail, pulling him behind and commanding "heel." Never let him follow unless he follows at the heel, and if the puppy is not allowed to go with anyone else or to exercise much except when with his master, this lesson will soon be understood. When understood, of course allow the pup occasional freedom, but frequently call him in to your heel.

At about this stage of the puppy's education the master will find strong opposition on some command or other. The puppy will directly and wilfully refuse to work and do as he is commanded. Be prepared for such a crisis, and use much patience to discover if fear keeps the pup from obeying or if he is sick or tired out from continual commands. If so, endeavor to get around your command, avoiding a conflict with him.

Keep the Pup in Good Spirits

Always be very careful not to tire out a puppy at any one thing, and never destroy your puppy's confidence in his master by making him do things when sick. However, if the pup is in good spirits and, although understanding you, refuses to obey, make him do as you command. There are times, of course, when you are not in a position to enforce your commands, and then, if possible, avoid giving that command. However, before stopping, make the puppy do as you say and make him do it in a cheerful manner.

The first break against your command will be the puppy's refusal to come when called. Of all ways of disobeying, this is the worst, for the puppy must learn that he cannot avoid your wrath by running away, but rather that he will always be safe if he comes when you call. Every time you call him to you, caress him. If he ever disobeys, put a long cord on his neck, and jerk him to you with all your force, calling all the time, "come here." A few lessons of the strap will be enough for the first time. Later, if he disobeys when you call him, hold the rope or strap, and walk to him without a word, and punish him severely. Then go back where you were, and call him, repeating the treatment until the puppy will come to you willingly, and in fact is afraid to go anywhere else. The dogs must be watched all their life to prevent this bad habit of refusing to come when called. [CONCLUDED ON PAGE 8]

SALLOW FACES

Often Caused by Tea and Coffee Drinking

How many persons realize that tea and coffee so disturb digestion that they produce a muddy, yellow complexion?

A ten days' trial of Postum has proven a means, in thousands of cases, of clearing up a bad complexion.

A Washn. young lady tells her experience:

"All of us—father, mother, sister and brother—had used tea and coffee for many years until finally we all had stomach troubles more or less.

"We all were sallow and troubled with pimples, breath bad, disagreeable taste in the mouth, and all of us simply so many bundles of nerves.

"We didn't realize that tea and coffee caused the trouble until one day we ran out of coffee and went to borrow some from a neighbor. She gave us some Postum and told us to try that.

"Although we started to make it, we all felt sure we would be sick if we missed our strong coffee, but we tried Postum and were surprised to find it delicious.

"We read the statements on the pkg., got more and in a month and a half you wouldn't have known us. We all were able to digest our food without any trouble, each one's skin became clear, tongues cleaned off, and nerves in fine condition. We never use anything now but Postum. There is nothing like it." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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

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CAPACITY—12 to 75 Tons of Hay a Day. 3-16 H.P.

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Ann Arbor Machine Co., Saves 1/3 Baling Cost

The Market Outlook

The 1912 Crisis

"IT NEVER rains, but it pours," seems applicable to the poultry crisis this season. In my years of poultry experience I have always been an optimist, but the season this year seems to be putting it over for the pessimist. Never in my twelve years' experience in poultry work have I seen quite so many discouraging things all at one time. Feeds have gone up over twenty per cent. since 1911, and corn and oat products are still going. This, coupled with the reports from breeders in almost every section that fertility and hatches have been very poor, is a serious handicap to raising stock this season. My own hatches were fully as good as last season, while on one shipment of eggs I received the market report of a ninety-five per cent. fertility test on the seventh day. Most of my eggs ran low in fertility, however, and nearly every breeder I have talked with reports the same. To make matters still worse, orders for hatching-eggs and stock have been much below normal this year, while in several instances the advertising expense has been greater.

My own orders for eggs for hatching from Rocks and Minorcas have been less than usual. I have done less advertising than in the past two or three seasons. While I had Rock eggs to spare this spring, my surplus stock in both Rocks and Minorcas was all sold in 1911, and I had orders for all the Minorca eggs I could spare. One peculiarity is that, while I received less orders for hen eggs, I received greatly increased orders for eggs from my English Indian Runner Ducks, and I had to turn down some orders to keep enough for my own use.

"These straws point the way the wind blows," and while I am not looking for a severe storm, I believe utility poultrymen are not promised very much fair weather until conditions settle. One thing is very sure. There is no money from market eggs at present prices, when corn is \$1.75 and oats \$2 per one hundred pounds. Bran at this writing is \$1.60 and brown middlings, \$1.80, while other ground feeds are about in proportion. Hens must lay better than eighty per cent. to produce profit at present market prices for eggs.

Reports from western States indicate that many farmers and market poultrymen sold off stock early this year expecting this crisis, and that shipments of market eggs from the West will thus be considerably less than it would have been had all stock raised last year been kept. Whether this will greatly benefit the eastern utility man or the western one, I am not sure. There are many eastern farmers and breeders also selling off every bird not paying, and some anticipate good prices for stock this fall because of it and are raising all they can afford to. If feed prices drop, there will be a good demand for stock this fall I believe, but it will cost about \$1.50 per bird to produce good ones. At this rate our utility breeders will have to get at least \$2 each for good birds, six to eight months old, to get even a fair profit.

Another thing that has caused some discouragement is the low egg yields. I never remember my birds producing less eggs than they did up to the last of May this year, and the cost of production was high. Now, I don't know how general this was, but I have heard many complaints. Low egg yields when feed-cost is low aren't so discouraging, although they are bad enough then; but when expenses are high, it is a serious thing. Our extremely severe winter is, no doubt, the cause of this, though my birds suffered little from the cold weather.

The breeders who raised their own grains, in a large degree had a great advantage over those who bought all feeds this past spring. I raise considerable grain for my birds, and the skim-milk from my cow helps me out also, but most of my grain was fed last fall and in early winter when feed prices were much lower than now. Had I saved my oats and corn and fed it this past spring, I could have saved about 15 per cent. to twenty per cent. on my feed-bills.

I am not discouraged at the present outlook, nor am I going out of the business. I believe all of us who stay are going to be glad later on. Whether it will be one month or six months, I am not sure, but when new grains get on the market, I hope for a return of lower prices. Some dealers believe feeds will remain considerably higher than in 1911-12, but if so, we may expect meats to be high, and our poultry products should also go up with the meats. This is about where the outlook stands now so far as my observation reaches, and while it is a bit discouraging for both utility and fancy poultrymen, I believe those who stay in will win. However, I am frank to say I believe 1912 is going to be a serious year for those entering the business.

One thing is going to help the industry in 1912, and that is the organization of several new specialty clubs. Already 1912

is the father of no less than three new clubs: "The Rhode Island White Club," President, C. D. McCarthy, Kempton, Indiana; Secretary and Treasurer, Mrs. C. M. Vertrus, Cecilian, Kentucky. "The Rouen Duck Club of America," President, John D. Burman, Eldrid, Iowa; Secretary and Treasurer, Henry Schehl, Prophetsville, Illinois. "The English Indian Runner Club of America," President, O. F. Sampson, Youngs, New York; Secretary and Treasurer, W. J. Patton, Glenview, Illinois. Each of the above clubs will publish a year-book containing the standard requirements, rules, etc., of the club.

I am writing this well understanding that several of our prominent poultry journals are telling how promising the 1912 outlook is. This is my strongest reason for writing these facts and views as I see them. One or two journals have gone so far as to say there is no truth in the statements made in this article. I make these upon good authority, and from reports from breeders I know, and also from authentic reports in the *New York Packer*, one of the most reliable produce and market publications, and one that keeps posted.

Poultry journals should be as anxious to tell facts of this nature as to tell those that bear upon the more favorable conditions. The business will not be injured, as some of the editors of these journals seem to believe, by telling truths.

For the man entering the business it is needful and only just that these conditions be known.

O. F. SAMPSON.

A Criticism Answered

IN THE last issue of FARM AND FIRESIDE I made a criticism of the work that the Office of Farm Management, Bureau of Plant Industry, United States Department of Agriculture, had done on my farm. I sent this criticism to the gentleman who had charge of this work, and here is what he replies. The facts mentioned here follow closely on what I stated in my last market letter.

I thank you for your criticism of the feeding record and agree with you that from this record alone one could not be justified in placing any other opinion on your farm than the one you have indicated. I should like to say that this feeding record on the calves was compiled to show that operation alone, and not as a complete farm record.

You will remember that I took a brief survey of your farm for the year June 1, 1910, to June 1, 1911. I should like to give you a short summary of this survey, as it has been worked out in the office, and show you how closely our figures for your entire farm correspond. In the following receipts the calves are listed as they were invoiced on June 1st, as you will remember they were not sold at that time.

RECEIPTS	
Crops sold	\$660
Stock sold	16,160
Stock products sold	20
Increase in inventory	6,511
Total	\$23,351

Note—The increased inventory includes the inventory on the calves June 1, 1911.

EXPENSES	
Stock purchased	\$7,606
Feed purchased	6,200
*Other expenses	1,650
Labor expenses	1,630
Total	\$17,086
Receipts	23,351

Yearly income

*Such as freight, yardage, taxes, insurance, machinery repairs, etc.

You will note that the farm income for the year is \$6,265. You will also note that this is similar to the figure you have quoted for your entire farm. I can see very readily that such a report as the calf report, unless fully explained, would be misleading to the public, and I think that when the bulletin comes out in finished form you will find that it will not be as misleading as the report was to you.

Going back to the farm income of \$6,265, I have figured interest on the total farm investment at five per cent., which leaves a net profit for you, for the year, of \$3,836. I confess frankly that I am at a loss to know what money credit to give cattle for manure produced. I agree with you fully that it is of great value, and on it ultimately depends the amount of the product which will be received from the farm. But I could not see a clear, fair way to credit every man's cattle with the manure produced, and therefore have not done it in any instance.

Considering that full labor and interest charges are deducted from the entire farm investment, and that a net profit of \$12.50 per acre was received, I believe that it places your business far ahead of that of the ordinary business man.

W. S. A. SMITH, Iowa.

Most of the standard mowers have an extra plate under the sickles which can be removed when worn and replaced with thinner ones. After the knives have too much wear and can jump around when running back and forth, the wear is twice as great as when the machine is new. I do not know of any other name for these plates than wearing-plates, though they may be called something else at the factory. Anyway, they do not cost much and save a whole lot on the life of a used mower.

Hog-Market Marking Time

SINCE the summer run began in May, the hog-market has been marking time. The supply is fully equal to the summer demand, and the price is dependent on the daily receipts. The shortage of other meats has maintained hogs' at a good figure, which they could not have held had the general supply been normal. Large stocks of pork still remain in the packers' cellars and furnish positive assurance that they will not start on a bear raid. They now support the market on light runs to maintain prices, and buy heavily on slumps to get pork at a low figure. It is generally conceded that the summer break has been registered and prices will improve until the 1912 crop appears. Sioux City and Omaha continue to get the big end of the business, and as soon as their receipts decrease, prices should advance. In the East considerable light-weight stuff is being marketed, enabling eastern buyers to get that class right at home and having to depend on the western markets for the heavy-weights only. Abroad, general conditions favor the buying of American pork. The large supply of Danish and Irish bacon and pork is exhausted, and America must now furnish the supply.

James A. Patten, a prominent figure in the board of trade, states that two successive bumper corn crops are necessary before there can be a material change in meat-prices. He states that it must be so plentiful that it must be fed to stock to sell at a profit. This will increase meat-production. During the latter part of June, receipts showed a slight decrease, and the quality was maintained. As is usual with this season of the year, raw stuff is beginning to make its appearance. The range of prices has narrowed considerably. The market is following in a general way the regular summer program.

L. K. BROWN, South Dakota.

Sheep-Prices Maintained

THE June dullness, which is a common feature of the sheep-market, was of short duration this year, and in the latter part of the month it gave place to a strong and steady feeling, and for all classes of well-finished animals satisfactory prices were obtained. Spring lambs, which had been both few in number and poor in quality, began to come in from all quarters, especially from Kentucky and Tennessee. They were eagerly sought for by buyers. Generally they were rather heavier than usual, as the late winter had kept them longer on dry feed in the yards. The following scale of prices may be taken as about the average for the past six weeks, varying only as the daily supply and demand agreed or differed. They represent those of the leading markets, and there are no apparent reasons why they should vary to any considerable extent for some time to come: Spring lambs, the choicest, \$9 to \$9.50; bulk of well-finished, from 60 to 75 pounds, \$8 to \$8.85; light weight, from 40 to 55 pounds, \$5 to \$6.50; yearlings (becoming scarce), \$4.50 to \$7.50; native wethers, from 90 to 130 pounds, \$4.50 to \$5.50; ewes of all classes and weights, from \$2 to \$4.50.

At such prices, and with every prospect of good hay and forage crops, and more reasonable rates for oats and mill-feeds, the raising of sheep at the present time offers to the farmer of limited means a good opportunity to improve both his income and the fertility of his soil. The supply of beef-cattle is likely to prove quite inadequate to fill the demand. Store cattle and sheep are scarcer than for many years, partly because of the invasion of the ranges by settlers and partly because the long winter and the high prices of hay, corn and feed have caused a somewhat reckless slaughter of calves and yearlings. It seems probable that the present scale of prices will be maintained, and unless more attention is given to the raising of meat-and-wool-producing animals, the millennium will be here before our growing population gets the proper American allowance of animal food.

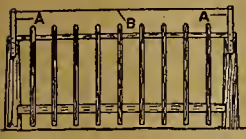
The remedy for this state of affairs lies in the breeding and feeding of sheep on our smaller farms. If two thirds rather than one third of our six millions of farmers would maintain even small flocks of well-bred ewes of the combined mutton-and-wool breeds, the inordinate prices of meat would cease, and markets would become more steady and reliable.

American importers of high-bred stock have been the best patrons of European breeders and have spared no cost to supply us with the best animals produced over there. Our wealthy farmers of large acreage have, as a class, availed themselves of the opportunities offered to improve their own flocks and herds and to produce animals for breeding hardly inferior to their imported ancestors. These they offer at prices within the reach of their less wealthy neighbors. High-bred cattle may be beyond the reach of many, but almost anyone can invest in a little flock, say, of twenty good ewes, with which he can make good money, even if his main crop consists at first mostly of weeds. Such a start as this can be made for about one hundred dollars, which will include a good, but not a fancy, pure-bred ram. They will with fair management double this amount in a year. All that is needed is the will to try.

JOHN PICKERING ROSS, Illinois.

Poultry-Raising

It Frightens Them



DO YOUR chickens or your neighbor's fly over your picket fence into your garden? If so, nail a little strip to each post and stretch a white twine string about six or eight inches above the top of the pickets. The same plan will apply to woven-wire fencing. A white twine string stretched along each panel of fence has all the horrors of the Inquisition for a hen, and she will positively avoid it. The sketch will give you the idea (AA, strips; B, string).
A. G. HUMPHREYS.



Proud of his breeding

One good thing about the incubator, it never leaves the nest before the job is done.

Old Turkeys for Breeders

I BELIEVE that the average turkey-raiser makes a serious mistake in disposing of his breeding stock every year and recruiting his flock from young and often immature birds. Young turkeys do not make number one breeders. While it is very true that a yearling hen will lay more eggs in a single season than one three or four years old, still, from practical experience, I have become convinced that the latter will produce a greater percentage of strong poults. My turkeys last year varied in age from yearlings to six and seven year olds. As each hen had a leg-band, it was little or no trouble to trace them accurately. After a close observation, I was well satisfied that the oldest hens paid the best. They invariably proved to be the best mothers. A greater per cent. of their eggs were fertile, and the poults hatched seemed to possess greater vitality. One of my oldest hens, during the fore part of May, made her nest and brought off sixteen fine strong poults, but owing to an accident, for which she was not entirely to blame, every one of the youngsters perished. Later, she made two unsuccessful attempts to bring off another brood, but failed in both instances. In the first instance, crows destroyed the nest. The second time a mowing-machine wheel put an end to her hopes. One of the most striking instances illustrating the hardihood of old hens is the experience of a friend of mine a few years ago, who succeeded in keeping one hen thirteen years. While she was not as prolific as in her earlier years, yet, in the aggregate, she reared as many poults towards the last as during her more youthful years.

Good authorities on turkey-raising agree that breeding stock can be kept with profit as long as they live. While I would not put it quite so strongly, I feel confident that breeding turkeys can be kept with profit much longer than they usually are. In my earlier experience with turkeys, I was a victim of the vigorous-young-stock craze, but I am getting farther and farther away from that craze, as I see the errors of such a course. The fact that a domestic pullet will lay more eggs than a two or three year old domestic hen and, hence, is the more profitable, does not argue that the young turkey hen will be better than an older one. A domestic hen and a turkey hen are two entirely different creatures and are bred and raised for two entirely different purposes, generally. There is another advantage in keeping old stock. By so doing, the expense of every year procuring a tom to avoid inbreeding is greatly lessened. If the breeder doesn't wish to go to an extreme with old stock, he will have no trouble in keeping stock three, four or even five years without change. From actual experience, I feel perfectly safe in saying that a breeder can keep turkeys until five years of age and still have them vigorous.
A. E. VANDERVORT.

Hen-Feeding for Efficiency

R. C. LAWRY of Pacific, Missouri, who manages a large flock of White Leghorns, is an advocate of efficient feed, care and management for the flock. He maintains that the progressive poultryman cannot feed any cut-and-dried ration year in and year out, but that he must be continually on the watch for better feeding mixtures and that, as far as possible, he must cater to the appetites of his hens. The idea should be to feed the flock so that the fowls are kept on feed and at all times relish their grain mixtures. The stock mixture which Mr. Lawry is using at present includes eighty pounds of wheat-middlings, eighty pounds of bran, eighty pounds of corn-meal, one hundred pounds of meat-scrap, fifteen pounds of oil-meal, nine pounds of granulated bone and six pounds of charcoal per three hundred and seventy pounds of the combination. As the price of the ingredients varies, the character of this mixture is changed, cheaper substitutes being utilized when necessary.

All the green stuff is home-grown and comprises soiling crops of mangels, beets, turnips, rye, alfalfa, rape and sorghum, which provide a varied menu of succulent roughage with which to tickle the palates of the hens. To a large extent the fowls are allowed to harvest their own supplies of this green feed, as they are ranged over the fields of growing grain, and in this way they obtain plenty of exercise, which maintains them in the pink of breeding and productive condition.

Inexpensive by-products of other industries, such as stale bread purchased from city bakeries and inferior rice and oatmeal

which do not come up to market requirements, are purchased and fed to the Lawry flock. Dried stale bread is purchased in large quantities at one cent per loaf, while loose rice and oatmeal cost one cent per pound. In addition, buttermilk is shipped in at a cost of a penny per gallon, and when used as a moistener for the dry mash, the hens fight for it. A grain ration, which embraces seventy pounds of corn, fifty pounds of wheat, thirty-five pounds of oats and fifteen pounds of Kafir-corn per one hundred and seventy-five pounds of the mixture, is also employed to good effect in inducing these hens to continuously yield a bumper crop of eggs. GEORGE H. DACY.

When the cat is away, better bring the mouse-trap into play.

Leap year will be a great disappointment to some men if they do not receive proposals from the lady on the dollar.

Gapes Can be Cured

THE gapeworm is caused, I think, from the egg of a fly laid in the chicks' nostrils, where it hatches and gradually works back into the windpipe. But what I know is that scattering the chick-feed in litter that has been well dusted with air-slaked lime will effect a cure if the disease is not too far advanced. As the chickens scratch in the litter, they inhale the lime-dust, which coats the worms and the eggs and fixes them. Of thousands of chicks hatched since I began this treatment, I think I have lost but one from gapes, and that one was neglected. Lime is a safe, sure and cheap remedy.
E. E. MCCLELLAND.

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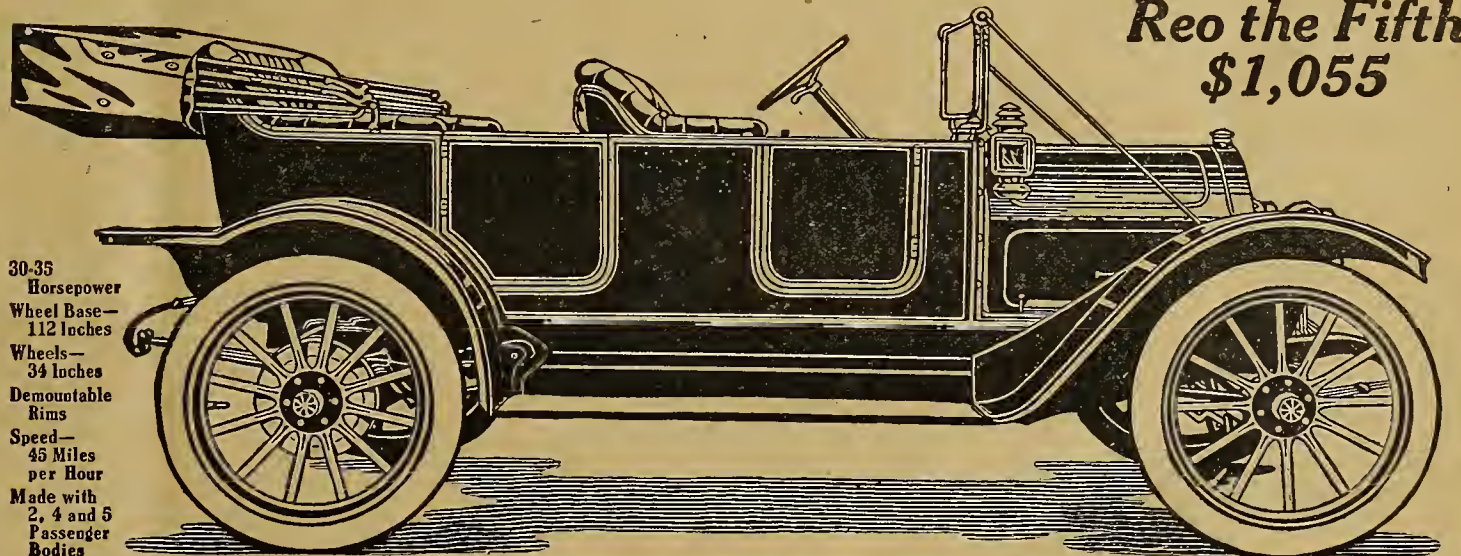
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Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank and speedometer—all for \$100 extra. Self-starter, if wanted, \$20 extra.

The 1912 Sensation

By R. E. Olds, Designer

Five Times Oversold in May

I have built automobiles for 25 years. Reo the Fifth is my 24th model.

I have watched all the ups and downs of Motordom—all the comings and goings, the successes and failures.

But I never saw a demand like that which developed for Reo the Fifth this year. In April and May we could easily have sold five times our factory output.

My Final Car

Month after month I have told you the story, so you know why this call has come.

I built this car as my final creation, as the cap-sheaf of my career.

In this car I embodied the best I had learned from 25 years of car building.

This car marked my limit. Every detail showed the best I knew.

I analyzed all steel that went into it. I tested the gears in a crushing machine with 50 tons' capacity.

I used Nickel Steel axles—Vanadium Steel connections. I equipped the car with 13 Timken bearings.

To every part I gave big margins of safety. The carburetor I doubly heated for low-grade gasoline.

I Watched It

Then I took personal charge of the building, for I pledged my good faith on this car.

I saw that the parts were ground over and over, until we got utter exactness. I saw that each car got a thousand inspections.

The engines were tested for 48 hours. Each finished car was tested over and over, until it proved utterly perfect.

We did all this with every car, in the midst of the April rush. We do it today, and shall always do it so long as I build this car.

The Center Control

Then we equipped this car with my new center control. All the gear shifting is done by a small, round lever between the two front seats. It is done by moving this lever only three inches in each of four directions.

I got rid of all side levers, so the front doors were clear. Both brakes are operated by foot pedals.

In these ways I made possible the left-side drive.

Now nearly all makers announce for next season the center control and the left-side drive. But none can use my center control. They still use the old-time levers.

The Amazing Price

Then we offered this car—the best I can build—for \$1,055. And nothing on the market could begin to compete with it.

The car is long, roomy and powerful. The wheels are big. The body is finished in 17 coats. The upholstery is the height of luxury.

The demand for this car will grow and grow as the facts become better known. I believe that each car will sell twenty.

But the price of \$1,055 can't last long. The price is too low for profit, and materials are advancing. Before very long advancing costs will compel us to ask something more for this car.

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Reo the Fifth is shown by dealers in a thousand towns. If you will write for our catalog, showing the various styles of body, we will tell you where to see the car. Address

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Farm Notes

When Things Break

THERE is always some repairing to be done on a farm. It is a condition that must be provided for the same as the more prominent features of farming. The repair tools are as essential as the plow; but essentials go still further: there must be contingent supplies. When the halter-snap breaks, is there another to take its place? Are there some rivets for splicing that rein that broke the other day?

"A few shingles are needed on the corn crib, but there's no small nails here, so it'll have to go," ought never to be said by any farmer. A contingent supply of these little necessities should ever be available, and when any class becomes depleted, it should be replenished for that future time when the things will be needed "so bad."

P. C. GROSE.

Hang Up the Scythe

IT is undesirable to leave a scythe lying about, yet it is equally difficult to find a suitable place to hang one. To hang it on a nail is to risk dulling the blade, while to hang it in the crotch of a tree is detrimental to the tree's welfare. However, there is a way.

Obtain a V-shaped crotch from an old limb, cutting one fork about a foot in length, and the other about six inches. The rear side of the long fork is then trimmed down slightly so that it can be nailed uprightly to a flat surface. This will form a permanent place for the scythe, where the blade will not get dulled, nor a fruit-tree injured.

P. C. GROSE.

The thoroughly selfish person is in the same class as the self-sucking cow.

Pure Water and Bacteria

THERE are several diseases which are spread frequently through impure water. The chief of these is typhoid fever in man and rather more rarely diarrhea or dysentery in both man and cattle. The bacteria leave the body only in the excreta, and water becomes contaminated only by being fouled by the presence of such material. Pure water or water fit for domestic use can be secured only by taking every precaution to see that such material cannot enter it. The well in the barn-yard which receives the drainage from the manure-pile, or the shallow well near a common privy vault are not fit sources for drinking-water. In many cases, such water might be used for years without producing disease, but the possibility of contamination with such disease-producing organisms is always present, and sooner or later some individual with typhoid fever in a latent form will contribute to this sewage, and the water will transmit the disease to those using it. Furthermore, such water used for rinsing milk-vessels is a common means of producing off-flavors, roapy milk, etc., in the milk which they contain.



Some bacteria that cause disease

receives the drainage from the manure-pile, or the shallow well near a common privy vault are not fit sources for drinking-water. In many cases, such water might be used for years without producing disease, but the possibility of contamination with such disease-producing organisms is always present, and sooner or later some individual with typhoid fever in a latent form will contribute to this sewage, and the water will transmit the disease to those using it. Furthermore, such water used for rinsing milk-vessels is a common means of producing off-flavors, roapy milk, etc., in the milk which they contain.

R. E. BUCHANAN.

The tears of a starved soil as it cried for food are little dabs of produce.

The Useful Farm Dog

[CONTINUED FROM PAGE 5]

Some dogs have lost all confidence in their masters, because the masters would call the dogs up only for punishment. Such a practice dispels all the confidence the dog may have placed in his master. People argue that if you use a stern tone of voice when calling the dog up for his whipping that he will realize the difference in the voice. To me this is no argument, for few dogs will come if they know they are to be punished. The error of such a practice was well illustrated in the actions of one good old sheep-dog a friend gave me. This dog had been accustomed to this method of being called up to get his whipping. Consequently, when the sheep were slipping past me in a wrong direction and I called him up to me in some manner he did not understand, he would fear a whipping and, trembling, allow all the sheep to go past.

When you need to punish your dog, go to him without saying a word. Look at him sternly, and scold him severely when you catch him. If he runs away, drag him back to the scene of his disobedience, and command him to do as you wish again. Never allow him to slip around you and run to the house for protection. If possible, run and head him off, for if he once learns how to avoid your wrath by going to the house, he will always remember, and the puppy you started to train will leave you alone to do the work. Drop everything, and go get the puppy if he runs back for protection. Tie him to you with a long rope if you must, but break him of such a habit.

Success in future lessons depends upon clearly instilling these first lessons in the puppy's mind. So far the pup has always been up close. But he must soon be sent out to drive stock away or to bring them in. This will take him out of your reach, and certainly if you cannot control him when he is near, you hardly can do so when he is far away.

The first of these later lessons will be to drive the stock away from you. He must be taught to bark and snap at their heels until they move. This is easiest taught when turning out the cows and sheep to water. The puppy just loosened from the pen himself is full of life and eager to exercise, and then by judiciously using the old commands of "stop" and "that's right" the pup becomes well trained to drive stock away. At this time he should be taught the command of "take hold," meaning to bite the heels of stock that will not move on when the warning bark is given. It is important that he learns to snap. He must be more aggressive than merely to bark. I detest the dog that only stands and barks and barks. I realize that a barking, biting stock-dog is likely to become too rough, yet the dog must be rough enough to command respect from all the stock.

So far all lessons have been to teach the puppy obedience and to teach him to drive stock away. Now follow the more difficult ones of going around stock and bringing them in. This is directly opposite to the driving-away idea, so much patience and ingenuity must be brought into play; where possible, drive cattle along a lane, making the dog follow at their heels while you lead the way in front. To do this will necessitate a careful combination of the terms "stop," "all right," "go back" and "take hold." Continued teaching will gain your point. One puppy caught the idea quickly, because every time I led the horses out to water I made her heel them and bark when I told her to do so. I have had to put a man with others. I called directions from in front, and they gradually forgot the assistant at their side. Different dogs need different systems, but I have found the work in a lane superior to teaching them to go around houses and small objects before taking them out in the fields. In the lanes I soon taught them from the word "go back" to "go back around," then on to only "go round," so that if I started at the place in the lane where they had become accustomed to driving the stock, they would go behind and bring them on. Later, a wave of my arm accompanied the command, and gradually they learned that a side wave to

the left meant go to the left and a wave to the right meant for them to go to the right. With all such commands should go some wave of the arm, for the serviceable dog learns to go far afield and work where the voice of a person never reaches. Then the wave of the hand helps convey the idea. Thus a wave to you means come in, a wave one way or the other means to go in that direction, while a raise of the hand means to stop and wait.

Whenever teaching the dog to "go 'round," remember to make him go out wide and slip in behind the stock. After learning in the lane to go around the stock, the dog learns to turn back straying individuals that may break away from the others. At first in this take a quiet flock or herd, and when any stray away, wave the arm in that direction, saying "go 'round." When around far enough, say "stop," and gradually the dog learns that he must simply turn them but not come around in front. Gradually the term "turn" takes the place of any other commands, and the dog has one more lesson learned.

Whip the Dog if You Have To

These make nearly all the lessons first taught to the puppy. By the time he has mastered all these he will have passed from puppyhood to the maturer state of dogdom. Always use plenty of patience. Reason out your moves as often as possible, putting yourself in the dog's place. Be kind and gentle, yet firm and positive. Use few words of command, having terms for different actions as different in their sound as possible. Endeavor to keep the dog in condition so that he is not fearing to do something wrong, but rather working his brain to think what he could do next.

However, I must say right here that a dog that willfully disobeys the command of his master must be made to fear the consequences if he should repeat the stubbornness and disobedience. One way of punishing the dog is by whipping him until he changes his tactics and becomes obedient. But it is somewhat difficult to know just when this point is reached, I realize; and therefore I caution every farmer to think carefully in order that he may be positive that his pup is directly disobedient before he applies the lash. Then when he does resort to the whip, let it be a switch that will bite and sting, rather than a coarse club that will bruise and cripple the puppy. When the pup is of a timid disposition, use something that will rattle and scare the life nearly out of him, like a handful of dry corn-stalks or several switches with the leaves still on them. In such a manner I whipped a timid puppy I was training one day by catching her in a fence-corner and beating the fence more than I did her. She thought she was getting it all, however, and it made her so afraid to again disobey that she went around the sheep in a hurry.

Such make-believe punishment will not do for some hard-headed dogs, and really the hard, rough-natured dogs make the most useful workers. Such dogs need punishment that is really punishment. Such dogs I beat severely when I do whip them, yet I use a pliable whip and try to scare them by storming at them while I am whipping them. If they run off and sulk and get "sour," I put a long rope on them and command them to go do their work. In this way I keep them from running away and make them face the music and eventually come my way. The person claiming that you never can whip a collie is the one who allows the dog or puppy to run away and hide after he is whipped. This teaches the cunning fellow how he can avoid doing his work at some later time. Or he is the person who incessantly scolds and whips his dog for little things that need only a lecture and a lesson in how to "stop" when he hears the command "stop."

This question of whipping for disobedience is a hard one to intelligently explain. Some men will cross their dog too many times and spoil his aggressiveness too much; or they will lose self-control themselves and punish when they should have avoided a conflict.

An Example of Perseverance

I have had just one collie get ahead of me when I whipped her. That one was a young female that I was teaching to sit up. I took care to teach her what the words "sit up" meant by bringing her dinner-plate every time I made her sit up. She learned to quickly sit up when she saw the dinner coming, yet when I wanted her to sit up at any other time, she sulked. I continued with the dinner-plate idea two days longer and argued and talked quietly with her many times until I was confident she knew, but that she willfully disobeyed. Then about dinner-time I took her into a room where she could not get away and asked her to sit up. She went off and sulked. Thereupon, I dragged her out and applied a whip. She still sulked. After a severe beating, I feared I was wrong and changed my form of punishment and shut her in a lonesome, dark hole without dinner. At supper-time I brought her back to the same place and asked her to sit up, and again she sulked. Immediately I whipped her and put her in the dark, lonesome hole without her supper. During the last of that night I heard her wailing, and I knew I would get obedience in the morning. And sure enough, when I opened the door, out she came around in front of me and up on her hind legs as correctly as could be. I made her sit up several times more to be sure of an unconditional surrender, then I picked her up in my arms and carried her in to a big breakfast, for really I love all my dogs, and they are just as happy when useful as when only just "no 'count dogs." I'd rather not whip at all.

The well-trained stock-dog is a great help on the farm. All he asks is a few scraps from the table at meal-time and a considerate master.

Some day in his struggle to lighten the work and expense on the farm the American farmer will train himself a stock-dog.

To Keep Milk Pails Clean and Sanitary

Sprinkle Old Dutch Cleanser on a rag or brush, rub pail thoroughly, rinse well and the pail is spick and span — "sweet" and hygienically clean.

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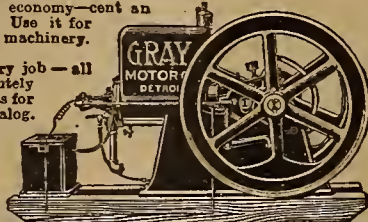
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Garden and Orchard

Using the Push-Cart

HAVING told how I developed from a newspaper reporter into a market-gardener, I venture to think that some of my experiences in distributing the vegetables among consumers may be of interest. As I said, I began by selling beans, the early Mohawk variety. In the course of the day at least half of those who bought beans asked for other vegetables, and some who did not want beans, asked for other things. That was encouraging, and another fact was at least as much so. Many of the customers said, in effect, "There are many vegetables to be had at the grocery, but it is not often we can get anything perfectly fresh there." At the same time, I was learning exactly what to grow next year, and that makes me think I ought to say something about the vegetables wanted.

As a matter of fact, I had calls for about every vegetable that will grow in this climate, but it did not follow that I ought to plant such a wide variety. By carrying a note-book and putting down the names of vegetables wanted at particular houses, I might have worked up a trade for everything, but I immediately learned that there is a physical limit to the number of different vegetables a man can carry. In the first place, such large quantities of the common vegetables are wanted that one would scarcely have room in an automobile truck for a great variety of less known vegetables—still less in a push-cart. But the chief trouble arises when deliveries are to be made from the cart to the kitchen door.

To illustrate: I carried my vegetables from the cart to the door in a light wooden tray having two compartments, each 11 x 14 inches in size. In this, after I had matured the various things, I was able to place from four to six kinds of vegetables and yet make a good display of each. Thus I carried two pails of beans of two quarts each, from six to three grades in different parts of the tray, two heads of lettuce, four bunches of radishes and a bunch of beets, or of turnips, or of each. By placing the bright red radishes between the cucumbers and the lettuce at the front side of the tray, all three were made conspicuous and attractive. Beets and turnips, being larger, were piled behind. With such a display, it was not necessary to say much. At a house which I was visiting for the first time I usually said that the things were "fresh from my own garden." Of course, the appearance of the vegetables substantiated that statement. Perhaps it was not necessary to say even that much, but I wanted the customers to learn that I was not handling things grown by other people. Then I told the prices without waiting for the customer to ask.

Planning the Vegetables for Quick Sale

A tray full of vegetables would commonly last for sales at two or three houses, thus saving returns to the cart to replenish stocks; but I once sold nine bunches of onions at one house and seven bunches of radishes at another. Sometimes I would go to half a dozen houses without selling anything, and then, later, I would sell at every house in a row of six or eight. It happened that two routes overlapped on one block, so that I called at those houses three times a week. In those houses I sold twice as much per house as in those at which I called but twice a week.

Of course, I soon learned what quantities of each vegetable were usually wanted. Thus beans were taken two quarts at a family, as a rule, but frequently four quarts were called for and rarely but one. It was easier to sell a dozen radishes in two bunches for five cents than in one bunch for the same price.

The arrangement of the vegetables on the tray was a most important matter. For example, some bunch onions came on in September. They were the red Wethersfield and had a glossy white bottom with a dark green top and a neat red collar between. The first time I carried them I covered the bottom of one compartment of the tray with a layer of bunches laid with the bulbs toward the buyer. On top of that layer I placed four bunches so that the white bulbs and red collars were on top of the dark-green tops below. The contrast of colors was striking and effective. I sold eighty bunches in visiting ninety houses. Later, I experimented on different days by piling the onions on the tray regardless of appearances. Thereupon the sales fell off at once, but were revived promptly by rearranging the bunches to make a proper display.

I notice that the people living in two-family houses had as good taste in their choice of vegetables as those who had half-acre lawns around their homes. But there were a number of families of foreigners on one route who always bought the grades of lowest price—the over-large or ill-shaped cucumbers, for example.

Speaking of displays reminds me that I once read an article written for the instruc-

tion of salesmen, in which the grower was advised to use a wagon with high glass sides, within which the vegetables were to be piled in pyramids. That was a gorgeous idea, but I observed that no more than three per cent. of my customers ever came near the cart. The others saw it, if at all, at so great a distance that they could not tell whether the sides were made of glass or asbestos. I therefore concluded that the place for the picturesque display is in the tray, where all customers must see it, but when able to afford it, I mean to have a fine rig to carry the stuff.

I have emphasized the matter of looks because it is of the utmost importance. Well-displayed vegetables sell themselves—literally. But let no gardener who distributes his own products, get the idea that quality is a negligible or even a secondary matter. He can make no greater mistake than to work on the theory that "people buy vegetables with their eyes only." I speak from experience in this as in all else I write here. In proof of what I say about quality, let me tell that I grew Keeney's rustless wax beans. The pods are flat and of irregular shape, while the color is not especially attractive, though fair. There were other varieties of beans on the market that were handsomer than mine; but after my first trip with them over my route the patch was too small. I saw women throw handsomer beans, purchased at the grocery, into the garbage-pail in order to take mine instead. Women living on streets that I did not visit left money with friends on my streets in order to get these beans. Before the end of the season I had the wives of four grocers among my regular customers. It was all because of the excellent flavor.

For sweet corn, I had my own seed, a cross of Golden Bantam on Cosmopolitan made three years previously. I had selected out the yellow kernels, but many ears showed



Selling the products of summer



white kernels, nevertheless. Then, too, the ears were small, though larger than Bantam. But I sold that corn at fifteen cents a dozen when the groceries were offering Evergreen at ten cents. Further than that, I sold my third-grade cucumbers at four for five cents when the groceries sold the run of the crate for ten cents a dozen. The flavor and quality did it every time.

Observe I am writing about a retail trade. In that a man quickly makes a reputation of some kind. I know nothing about selling through a commission merchant and want to know nothing, but perhaps I may obtrude the opinion that a man who sells stuff of poor flavor and poor in other respects at any time by any means is working a sort of bunco game. Of course, those who ship must have stuff that will stand up, but for my trade I shall prefer what the seed catalogues call "home-garden" varieties.

It's Best to Sell to the Consumer

As we all know, those who sell to the grocers find prices dropping swiftly after the season begins. A week may—it often does—lower the price to the cost of growing. But when fresh vegetables of the best quality are sold directly to the consumer, a fair price is obtainable throughout the whole season. I sold beans at six cents a quart through August, and a late lot in September brought seven and a half—a two-quart pail, for fifteen cents. It was a small lot, alas! Of course, some customers grumbled at the higher prices, but they continued to buy. With patience and kindly courtesy and underlying firmness, no one will lose his trade because his prices are higher than those made by others on inferior goods.

I soon saw that there is a wide difference in the profits to be made on vegetables, but that subject is so large that I shall leave it for future consideration. What I shall do now is to give an idea of the income that a push-cart man may hope for. In order to understand this matter, it is necessary to consider the physical limitations of the business. Because of their weight, I could carry

no more than six bushels of turnips in a load. They sold, at the end of the season, for fifty cents a bushel. Then there is the time limit. Because the vegetables are usually wanted for the noon meal, the sale is excellent between seven and eleven in the morning. It is discouragingly slow after dinner. Because of this limit, I could sell but few more than three bushels of beans in a trip, and so carried no more. But I sold from 150 to 180 cucumbers at the same time. Then, though I never had a proper variety of vegetables through the season, I often had a good assortment during the first hour of the sale, and by calculation I feel assured that I can sell a load of ten or twelve pecks, each, of peas and beans, 150 cucumbers, 40 to 60 bunches, each, of radishes and onions, 50 to 70 heads of lettuce and possibly a supply of some other vegetable without increasing the time spent on the street to any great extent. I certainly did better than that in the first hour's sale on many days when I had an assortment, and (beginning at seven o'clock) I was able to cover the usual space along the street—to visit the usual number of houses—by eight o'clock. To handle both peas and beans in that time, however, it is necessary to put them in some sort of a gift package—a paper carton, for example—in order to save the time of measuring out. With nothing but roots, like turnips, carrots and beets, with a few cabbages and winter radishes on top, I received as little as \$3.50 for a cart-load. With beans and cucumbers alone, I sold one cart-load for \$11.46. The daily average ran from \$6 to \$8.

The cost of selling has not been calculated, as yet, though I have full notes, but a partial calculation indicates that twenty per cent. of the gross income is the limit. As the grocer was willing to pay me but a dollar a bushel when beans were retailing at eight cents a quart, the profit in cash made through retailing is manifest, but, as I hope I have made it appear, the other advantages are not to be overlooked. With an active helper and an enlarged carrier, I hope to do still better this year. JOHN R. SPEARS.

Tell your girl the why of cooking; if you don't know, find out.

There are twenty greatest people in your county, and you may be one of them.

Does Forestry Pay?

THE old idea that we must plant trees for our grandchildren to harvest was prevalent many years. Anyone planting or caring for young forest-trees to any large extent was supposed to do so from purely altruistic motives. I knew that that view of the subject would not appeal to many and that we could not expect much progress in tree-planting if we followed it alone.

Eight years ago we planted eight hundred catalpa-trees on one acre. We now know that larger profits could have been obtained by planting twice that number. These trees were one-year-old seedlings. The ground was plowed and prepared as carefully as for a corn crop, and the young trees carefully cultivated for two years, since which time no time has been spent on them, except a few hours each March in cutting off the lower limbs. The trees are now eight inches in diameter and about twenty-four feet in height. There are now on the acre approximately eight hundred fence-posts worth, on the ground, at least fifteen cents each, or fifteen dollars a year, for the use of the land. This is not a bad rental considering the small amount of labor expended. But we know now that it would be a very wasteful process to cut these young trees, because there is almost a second post to each tree above the one we could use, and in six years more three posts per tree can be cut without any doubt.

We have this plan outlined for the future of the grove: In the next two years we will cut about three hundred of the poorer trees and use them. This will leave the five hundred best trees to grow to larger size. By the time they are fourteen or fifteen years old they will make three posts to the tree, when there will be fifteen hundred posts on the acre. Then we will cut two hundred trees, making six hundred posts, leaving three hundred trees to grow to telephone-pole size, when they will be worth one dollar and fifty cents, each, if there is no advance in price. There would then be a total of four hundred and fifty dollars' worth from the acre. Besides, the thinnings for posts for farm purposes came in conveniently.

Eight years ago I made this same estimate at a forestry meeting, and many thought I was too optimistic, but now we have the trees to show for the first part of the estimate, and if they come up to our expectations as well for the next ten years, we will be satisfied.

We have planted each year since and now have good trees of different species growing on five acres of land on a farm which otherwise would be without any timber-supply. This has been done at a total expense of about one hundred dollars, and we feel that it has already added many times this amount to the selling value of the farm. We are sure that anyone having a treeless farm can well afford to devote a few acres to these quick-growing timbers. HORATIO MARKLEY.

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Everything goes wrong if the breakfast lies in your stomach like a mud pie. What you eat does harm if you can't digest it—it turns to poison.

A bright lady teacher found this to be true, even of an ordinary light breakfast of eggs and toast. She says:

"Two years ago I contracted a very annoying form of indigestion. My stomach was in such condition that a simple breakfast of fruit, toast and egg gave me great distress.

"I was slow to believe that trouble could come from such a simple diet but finally had to give it up, and found a great change upon a cup of hot Postum and Grape-Nuts with cream, for my morning meal. For more than a year I have held to this course and have not suffered except when injudiciously varying my diet.

"I have been a teacher for several years and find that my easily digested breakfast means a saving of nervous force for the entire day. My gain of ten pounds in weight also causes me to want to testify to the value of Grape-Nuts.

"Grape-Nuts holds first rank at our table."

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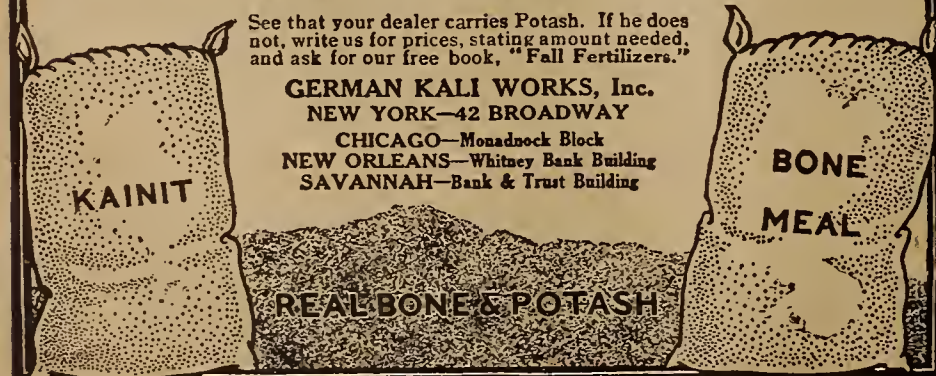
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Live Stock and Dairy

The Easy Mark

By Berton Braley

S AID the scrub-bred cow to the high-bred cow,

"Say, you are an easy mark, I vow. You eat no more than a scrub like me, You're treated no better that I can see; Yet you give that farmer three times as much

In payment for board and room and such; Three times the milk—and it's better, too; I'd hate to be such a fool as you!"

Said the high-bred cow to the scrub-bred cow,

"I'd like to shirk, but I don't know how; I'm not intending to pay so well, And why I do it I cannot tell; I reckon it isn't for me to say, I guess I was simply BORN that way! No matter how hard to stop I try, I keep on boosting the milk-supply."

Said the scrub-bred cow to the high-bred cow,

"You're up against it, I'll allow; You're padding the farmer's increment, While I'm not making the dub a cent. I know this much, if I were he, I'd banish all scrawny cows like me Who eat as much as their betters can And bunco their board from the farmer-man.

"But I'm not the farmer and so I'm here, Eating my head off year by year, And I'll do it as long as I can, I vow," Said the scrub-bred cow to the high-bred cow!

Money Made From Garbage

A Hint for Farmers Living Near Cities

I N FARMING, as in some other things, New England has had to learn its lessons from the Middle West. The conservatism of New England farmers is said to be responsible for the decay and final idleness of the New England farms. But of late these parent States of the Northeast have seen the wisdom of the young, more progressive and more aggressive States of the Middle West, and in farming, as in some other things, New England has learned her lesson cheerfully.

So to-day there are in Massachusetts, New Hampshire and Maine farms as truly scientific as any in Ohio, Indiana or Iowa. In the far eastern part of Massachusetts, where the land is supposed to have "run out" long ago, there is the farm of Mrs. John Cummings, which shows what can be done in even this section of the country when farming is undertaken as a business proposition.

The operations on the Cummings place, an estate of some four hundred acres in Woburn, about twelve miles north of Boston, are centered around pork-raising. The year around, there are on the average nineteen or twenty hundred hogs being raised for market. In the winter months they are kept in four low, narrow houses, from 175 to 225 feet long, which are divided into pens 6 by 10 feet. During the summer the breeders are put out to pasture. On this place they have had best success with Chester Whites, Yorkshires and Berkshires, and only these breeds are now handled.

The feeding of these two thousand hogs is no small undertaking. On the Cummings farm, as on most others in the vicinity where pork is raised, the hogs are fed altogether on swill from the suburbs of Boston. On this one farm they use all the swill from Medford, a city of twenty-five thousand, and a large share of the swill from the polite and effete city of Cambridge. At present

two large four-horse wagons do nothing but carry this garbage for the pigs, and it is hoped that they will soon have automobile trucks for the same purpose. Swill is considered the most satisfactory fodder among the pork-raisers of this vicinity,—so satisfactory, in fact, that in bidding for city swill the price has been forced up until now it costs at seventy cents a cubic foot. It comes dry, and very seldom does it contain anything harmful. Only four or five times has a pig been lost on the Cummings place, in every case due to glass in the swill.

Another instructive feature of this pig-raising proposition is the bedding. The Cummings buy for their pigs all the straw, stable litter and manure from the stables of the largest department-store in Boston, Jordan, Marsh & Company. As with the swill, it takes two teams to cart this all the time. Every day a fresh lot of it is put in each pig-pen. The bedding of the day before is spread on the land all over the farm. The success they have with crops here is in no small measure due to the constant supply of manure from the hog-houses, dairy-barns and horse-stables.

The other stock on this farm is about twenty-five horses and thirty-five Holstein cows. Alfalfa is raised successfully and makes excellent fodder. For the past three years they have been able to get three crops, and were it not for the extra-dry seasons with which New England has been blessed for the last five years it is certain that four crops could easily be raised. Only one hay crop is usually cut, and this averages about three hundred tons. A good many acres are devoted to corn-growing and furnish stalks for the ensilage on which the cattle are largely fed.

As land runs out and for the purpose of rotation, vegetables are planted in large numbers. Cabbages, cauliflower, parsnips, turnips, celery and beets are grown in the largest quantities and find an excellent market near at hand. No potatoes have been raised for the past ten years, but if the high level of potato prices is maintained and if it continues to be profitable to import potatoes from the British Isles, a large share of the land now given over to apple-growing will be taken for potatoes.

Orcharding is not now a good business proposition in eastern Massachusetts on account of pests. Mrs. Cummings has spent annually over a thousand dollars spraying, trimming and cutting out the brown-tail-moth nests in the orchard.

An interesting feature of this estate is the way the employees are cared for. Seventeen families live in houses built for them on the place by Mrs. Cummings. There is a delightful spirit between the employer and the employed, and little of the trouble with farm help so common in this section ever finds its way into the Cummings farm.

A. E. WINSHIP.

Learn to handle harness fast, on and off; it saves so much time.

How to Wash Milk-Cans

EVERY now and then a farmer, going away from an agricultural gathering or farmers' institute, remarks to his wife on the way home, "Well, some people are getting this farming business down to a pretty fine point." And just as there is a right and wrong way of doing most everything, so the job of taking care of the milk-cans and utensils should be turned over to the best "hand" on the farm with the following rules for doing it right:

Milk-cans in which sweet milk or cream is kept should never be used for anything else, except possibly pure water. Never handle milk-cans roughly, for a can perfectly smooth on the inside is the easiest to wash. A battered can is not only more difficult to wash clean, but will not hold as much milk or cream. When the can is emptied, first rinse out with about a pint of lukewarm water, and drain well. Then fill about one-fifth full with clean, lukewarm water, and wash the inside thoroughly with a clean, stiff brush. Never use a dish-cloth or rag which has been in greasy water.

Be sure to clean all seams and crevices thoroughly, since these are the places where the inspector always looks. Dirt has a tendency to lodge just at the point where the neck joins the body of the ordinary milk-can. A mineral washing-powder is much preferable to soap for cleaning purposes, but neither should be used in large quantities. When the can has been thoroughly cleaned, empty out the wash-water, and rinse well. Then scald with boiling water, and after draining for a few seconds, set it upright for the steam to escape. The hot can will dry itself, and the use of a drying cloth is unnecessary.

Finally set out in the sun on a rack or clean platform in such a manner that the mouth of the can is downward but raised from the floor at least eight inches. Do not permit cans to remain out overnight in damp weather, but provide a clean, dry place free from odors. Milk and cream kept in cans cleaned as described will have superior keeping qualities and will not lose their natural pleasant flavor, the lack of which makes good milk such a luxury in towns and cities.

D. S. BURCH.

Corn-Belt Stalk Wisdom

ON ACCOUNT of improper management, the "average" farm secures only about one-half what should be secured from stalk-pasture. The high price of land demands that the farmer turn this portion of his crop into full profits, the same as he does the grain part of it.

Perhaps the greatest drawback is that of husking out all of the corn before any part of the field can be pastured. The stalks lose practically all of their tender blades, rich succulence and greenness.

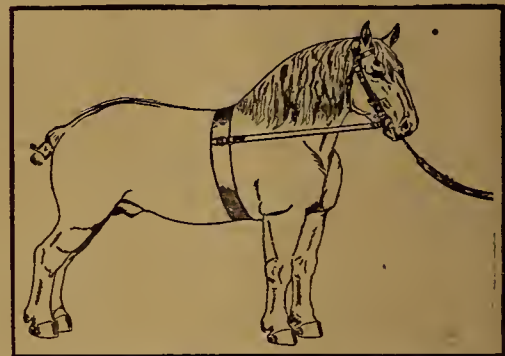
Where one has a corn-field of considerable area, it may be advisable to husk out one portion of it, hastily run a temporary fence through the field and turn the stock into that part, allowing the stock to run there till another part is ready to pasture. Then move the fence over. Or, if there are several smaller fields, let one be husked out and the stock turned into it, continuing thus till all the fields are empty of corn.

In pasturing the stalk-field, either early or late, we turn our live stock into it by degrees, allowing them to remain only an hour or two the first day. If they were turned in and left there all day at the start, the change of feed, the amount of missed corn they pick up and the great quantity of water they consume in connection with this overeating is almost sure to produce damaging results with the digestive organs, and is very apt to cause death.

Aside from exercising the above caution regarding the gradual turning of animals into the stalk-field, we systematize other details with a view to avoiding the danger known as "corn-stalk disease." We believe that that ailment is largely due to carelessness. Our stock are watered before being turned into the stalk-field, and when they come out, they are prevented from filling their hides with water. They are given all the salt they will eat. No more water is allowed them till the salt has had time to do its good work and most of the material consumed in the corn-field is digested. Even then we are very careful that the animals do not drink to excess. M. COVERDELL.

It is a good sign when the farmers begin to consider the problems of the children as earnestly as they do those of the stock.

Can you hang a rod through the shed to open the door to let the cattle out the back way, closing the door with a lever? It will save you three miles a year. Think it over.



Weight is essential to good plowing

Best Policy

Said Franklin, "Honesty is the best policy." Unfortunately, everybody does not follow this wise precept, so it is necessary to make careful investigation of the advertisements which appear in FARM AND FIRESIDE.

We admit only those which are reliable, in order that you may depend upon them with the same confidence that you have in the reading pages. Every announcement we carry is made by a firm we believe to be honest.

In dealing with any of them, you are patronizing a firm which has our guarantee of reliability. Always mention FARM AND FIRESIDE when writing to them, as this insures prompt and courteous consideration.

Crops and Soils

Some Thoughts on Practical Summer Problems

Slaughtering the Foul Weeds

A YOUNG Ohio man permitted some teamsters to feed in a wood-lot. Soon after this some very innocent-looking weeds came up. They were new to the young man, who took one to his father. His father said: "Young man, you have Canada thistle on your farm." The young man answered: "Canada thistles and I cannot live on the same farm." He visited Mr. Thistle every week with his hoe until he wore the life out of him. This is the proper attitude to take towards all foul weeds.

About seven years ago we took charge of what was in all probability the foulest six hundred acres in Iowa. Several fields were completely covered with cockle-burs, and no field was exempt from this sign of a poor farmer; there were also several bad patches of butterprints.

The first move was to buy a hundred dollars' worth of clover and timothy seed. We sowed to oats and rye the first spring one hundred and ninety acres of the very worst bur-fields, sowing heavy to grass-seed, also; planting to corn-fields the least infested. One field of fall plowing (very foul) we sowed to millet.

Immediately after harvest we started the mowing-machine on the oats and rye stubble, aiming to cut all burs before the seed could develop. Soon as the millet was cut, we plowed the ground and sowed to rye and timothy, following with clover in the spring. In August we put in the corn-field six men with hoes to cut green burs. As the burs were thin, a man could take three rows at a time, costing, say, fifty dollars to go over two hundred acres. We then went over all pastures and meadows by course, pulling stray burs, and if we were a little late with a field, we took the wagon and hauled, piled and burned them. We have had six lower wagon-beds full from a forty-acre pasture-field in one fall. We have followed this same plan seasons since, sowing grass-seed, mowing, pulling burs. The way to kill burs is to *kill them*, not suffer one to seed. The result? This farm is about the cleanest of burs of any place you can find in a day's hunt. The cost to clear the 600 acres of burs was about six hundred dollars. The grass-seed cost about four hundred dollars, which has more than doubled the fertility of the farm.

Fortunately the butterprints were only in patches; the ground was so loaded with that seed that never rots that I have not been able to entirely eradicate this pest. I have cut butterprints in corn three times in the fall and then a few little ones would come up and form a seed-pod just before frost.

Our intention is to keep these butter-print-patches in grass most of the time, and if put in corn, to watch the weed very closely to prevent any seeding.

We also had an experience here with the horse-nettle, perhaps the worst of all weeds that the Iowa farmers must fight. It is perennial, has a rootstock, also forms a seed-bulb on top, thus it has three chances for life, and the average farmer gives it two.

Our best writers on agriculture tell us that ordinary farming is just right for the development and spread of the horse-nettle. After breaking an old meadow, we found fifteen patches of them, ranging in size from one to six square rods, mostly the latter. These were more than we were anticipating in the foul-weed line. We went over all these patches and pulled every plant (which did no good). We farmed the field to corn the next two years, going over carefully before time for them to seed and cutting the plants. This did but little good. This field was in oats the next year. Every patch was there in good shape for spreading still farther in all directions at once, with the rootstock and seed. As soon as the oats was cut (before the shocks were off) we located these patches, which were in a very crooked row through the middle of a 95-acre field, put up high stakes with flags on top of them, took out the mower and went for them, putting the guards very low. I cut these nettles about once a week all the fall, or about two months, following toward the last with a hoe to clip any that might be in a very low place that the mower could not cut close enough.

Result? Of all the fifteen patches, I have been able to find no plants this summer except a few in one patch. I have been hounding these with a hoe this summer, and I think they are gone now. I have never seen any ripe seed of the nettle, and I do not expect to on any farm I live on, but I would not be surprised if it, like the butter-print, would lie in the ground one hundred and ten years and then grow well. If so, a farm well set to these lovely flowers would not be worth over half price to me.

If I were trying again to slaughter another patch, I would not plant to any crop, but take a sod-grader and shave the ground smooth. Going over it about once a week one season, I believe, would kill the thing

dead. I believe a farmer had better lose the use of one acre or ten for five years and go over the ground every week than to have the weeds spread all over his farm. Think of a farm worth from one to two hundred dollars an acre being set to foul weeds that the man's grandchildren cannot eradicate!

E. P. MICHENER.

It's Easy to Mow

THE illustration with this article shows a gasoline-driven six-foot-blade mower in use at Antioch, Tennessee. It is operated by a two-cylinder eight-horsepower marine motor with sprockets and chains. With motor running at moderate speed, it cuts a little faster than with a team, and in very hot weather it will cut much more than a team, as it does not get overheated.

This home-made power mower has the front wheels from an old mower and smaller than the rear wheels. A flat box was bolted on each of the tongues over the pitman, to hold a shaft. On this shaft, between the tongues and close to the bearing on the right tongue, is a bevel gear which is turned by a small pinion. This pinion is on one end of a shaft which runs forward between the tongues to the motor. A cross-timber was bolted to the tongues and holds a flat box in which the pinion shaft runs.

On the end of the shaft, which has the large bevel gear, is a sprocket (just outside the left tongue) which drives a larger sprocket on the end of another shaft. The steering-gear is similar to that of a traction engine, with a chain in each end of the front axle. These chains run back to a cross-shaft under the tongues. This shaft has a smaller bevel gear on it just inside the left tongue and is turned by another bevel gear on the end of a short shaft which runs back and is connected to the steering-rod by a universal joint.

The power is supplied by a two-cylinder eight-horsepower motor which is reversible and weighs about 135 pounds. On the end



of the motor crank-shaft is a pulley six inches in diameter, with a three-inch face.

The designer of this home-made mower further describes its construction as follows: "This pulley is placed on a shaft so that the hub of the pulley extends out beyond the end of the crank-shaft one inch. The end of the shaft, which has in the other end the small bevel pinion which runs the large bevel gear, works in this end of the pulley hub, but is not fastened to the hub, the hub simply makes a bearing for the shaft. A piece of timber is clamped on this shaft, almost touching the pulley on the end of the crank-shaft and a little larger than pulley.

"A piece of three-inch belting is fastened in the middle to a bolt in one end of this timber. This bolt extends out over the face of the pulley so that the belt is held just right to clamp the pulley when the two ends of belt are drawn together. The ends of the belt are fastened to an arm which works in a slot in the other end of the timber. The end of this arm is moved by a loose collar or shaft and is arranged so that the driver can throw the clutch out with either hand or foot.

"When in gear, the clutch is held by a spring. The right mower wheel has about two inches of the outside end of the hub sawed off so that another mower wheel could be placed on the axle with rims of wheels touching. These rims were then bolted together, making a wheel double the ordinary width of a tire, giving it more weight and a better grip on the ground.

"Using the right wheel only for the driving-wheel makes the gearing much simpler than if both wheels were used to drive the machine and puts the driving power just about the middle of the outfit when it is cutting, and makes it easy to steer. The driving-wheel is pinned to the axle, and all lugs and springs in the hubs of the wheels are removed, as they are not needed. Taking out these lugs and springs does away with one of the worst sources of trouble connected with horse mowers."

The builder of this home-made mower stated that, "with motor running at a moderate rate of speed, this machine cuts a little faster than with a team, and in hot weather it will cut much more than a team, as it does not have to stop and cool off."

FRANK C. PERKINS.

Tractors for Big Farming

ANOTHER reader has been thinking of moving to Canada and asks: "I notice in your article on Tractor Farming, by J. A. King, where you are making a comparison between horses and the engine, that you put the price at \$2,250. Does that mean that your engine is actually twenty-five horsepower and that in every way it is a satisfactory purchase? Can you tackle new ground, and is the engine heavy enough to comfortably move along without 'rearing up' because of not being sufficient in weight? What kind of fuel do you use? If they are run with gasoline, are they troublesome to keep in repair, and does it require much instruction to run them?" He speaks directly to Mr. King, who replies:

The engine referred to in my tabulated comparison of costs as doing the work of twenty-five horses and costing \$2,250, was a new engine with normal equipment of dry batteries and high-tension coils for igniting device. This engine is rated by the manufacturer at "60 Brake Horse-Power or 25 Horse Equivalent Horse-Power." This latter rating means that it will actually displace twenty-five horses for general field and farm work throughout the year. If a man has a farm which requires thirty horses to operate, he should be able to work it equally as well or better with this engine and five horses. There will be times and places, with good hard footing and level road, that this engine can pull a load that would require forty horses to pull under the same conditions, continuously for an hour or more. But that is more than its normal rating which I gave in my former article.

If a man has a farm of four hundred acres or more, this sized engine should prove a very satisfactory purchase. It will successfully work new ground and never rear up. It will slip its drivers before rearing up. It is very seldom that owners of such an engine in Canada find native sod, even in the gumbo sections, in which they cannot pull at least six fourteen-inch plows, and they will pull at least eight in old ground. Here in Iowa the same engine will pull eight plows in native sod and often ten on stubble-land.

The fuel I use regularly is a low-grade petroleum oil testing about 38° Baumé. It is from the Kansas and Oklahoma fields and is known as southwestern or engine distillate. It is what is left from the crude petroleum from these oil-fields after gasoline, naphtha and kerosene have been removed. I simply use gasoline to start with and burn it until the cylinders are warmed up, when it is shut off.

The difficulty of operating and keeping in repair will depend much on the operator himself. The repair-bill per year should not exceed three to five per cent. of the initial cost, and many owners get along with much less than this. If the factory expert who delivers the engine, stays with the purchaser from two days to a week, the owner should, in that length of time, learn to operate it successfully.

When it rains, grind up the sickle-bars and "get ready." Hay-day is bound to come.

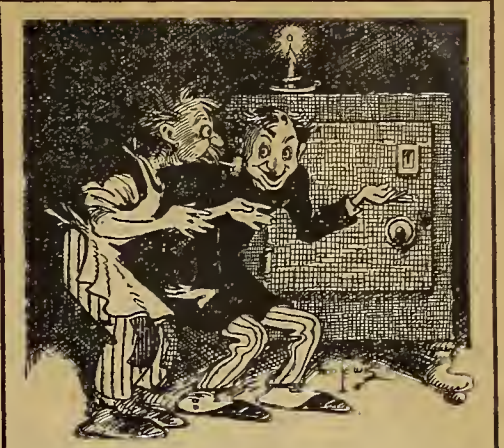
Two tons of good hay saved ahead of a rain will buy a loader at last year's prices.

How to Plow Deep

AN INDIANA contributor, who has had much experience in general farming on a large scale, sends us the following in praise of the tractor plow:

Why is it that farmers do not plow deeper? Best practice considers it essential for increased yields. It provides a larger moisture reservoir by loosening up greater portions of the soil. This allows the water to enter the ground more easily and to a greater extent. The increased water storage insures the crops against drought. But deep plowing takes power. A farmer can plow as deep as he likes if he has the necessary power. The plowing season is short and the work hard. Extra horses are required, and if deep plowing is to be practised, even more extra horses are needed than ordinarily. It is not profitable to keep more horses merely to furnish this increased power, which is needed for only a short time. During the rest of the year they are idle, and it costs money to keep them. Unlike horses, it costs nothing to maintain a tractor when doing nothing. When it stops work, expense stops. Less power capacity is required, where a tractor is used, since by providing two crews a tractor can be worked day and night, thus doing the work of twice the number of horses equaling it in power. A fifteen-horsepower tractor will do the work of thirty horses, and will also have the endurance of forty-five. When through work, it requires no attention.

While all this is true, the problem is not quite so simple as merely ordering the machine. On a farm adapted to tractors, there is every reason to think that they pay. It would seem, too, that traction plows and other tractor machinery might well be kept for hire like thrashing-machines. Deep plowing can also be accomplished by the deep-tillage machines now coming into use, on lands adapted to them. Study the farm first.



MOSES EINSTEIN bought a printing-office. The second morning the foreman was unable to find a single dollar-mark. There wasn't one left in a single case.

When the new proprietor came in, the foreman told him of the strange disappearance of the dollar-marks.

"Sh-h-h!" whispered Moses. "I put dem in der safe."

The Manure Lasts

EVERYONE who has had experience applying manure knows that stable manure will show its effects on the soil for several years after it has been applied, but it is usually thought that an application of stable manure will not last more than three or four years. Perhaps this is true with the single application, but when manure is applied from year to year, the surplus plant-food may be held in the soil for a long while.

I have a small plot of land that had been used as a garden-spot for perhaps thirty or forty years. The fertility was kept up by the usual annual application of stable manure. This was the only method of enriching the soil at that time, as commercial fertilizers had not then come into use here. The garden-spot was removed to another place about thirty years ago. I have had control of the place about twenty years, and the only manure I have applied has been a little acid phosphate. This plot still shows the effect of the plant-food furnished to it years ago, as it brings much heavier grain than the surrounding soil.

There is a farm about fifteen miles from here that does not look as if it had a very productive soil. It is situated in a rather sandy section of the country and yet it produces very heavy crops from year to year, without either the application of stable manure or commercial fertilizer. I am told that this farm was a pigeon-roost years ago, a place where the wild pigeons collected in vast numbers to roost overnight. This was years ago. The wild pigeons have entirely disappeared from the country, but the soil where they congregated still shows the effects of their presence. A part of the plant-food left by these birds seems to still be held in the soil.

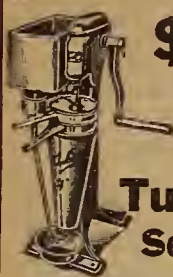
A. J. LEGG.

The Finisher

NO boy or man will ever be a success if he drops a plan or quits work on anything before he has brought it to a successful end. The reason some men are failures is because their initial energy soon runs out. When they strike the rough places, they have "neither steam nor sand." You need not put a log across their track; merely a straw or a feather will do, even if success is looming up in plain sight. At the first hint of exertion they are done, throw up the attempt and sink back into apathy. Trying to pull or push such people out of the slough of ill-fortune is like trying to pull a sheep out of the mire. It is all a dead weight, and the victim won't wiggle a toe to help himself. The minute the helping hand is removed, down goes the helpless one deeper than ever, with louder and louder wails at "bad luck." The only way to help such people is to let poverty get after them with a club and bang them into energy or insensibility. True success in life is simply the leaving of no job unfinished. When a boy, I hated to leave a job half done and then go back to finish it. It seemed as if I hated it worse than ever then, and it was more tiresome. Learn to plan every detail first, then carry each step to a successful finish. I have worked for men who were not sure what they meant to do. We hired men were flying from one half-done job to another. We spent half the time walking around; all because the boss had no plans outlined for the day. We finished, tired out, with little done.

It is only the perfect work that pays for the doing. "There, I guess that will do" won't do at all. Let no work bear your mark that is not done with all the skill at your command, be it making a hoe-handle or plowing stony land. There are too many patched fences in life. Often the lack of "know how" is the cause of failure. From this day train your eye to observe. Learn every detail of your work. Get a working knowledge of the "why" of it, for years afterward that very knowledge may be of great use to you, and save you many dollars. Have your own trade or profession, and hew to the line; but whatever you begin, finish. A carpenter-shop with a broken chair presents no recommendation. C. E. DAVIS.

FROM DEBT TO \$20,000



Use
SHARPLES
Tubular Cream
Separator Exclusively

That, and more, is what J. F. Armstrong & Sons, of Austinburg, Ohio, have done. Like other shrewd farmers, they have succeeded because they know profit is of far greater importance than first cost.

Like others making most money from dairying, the Armstrongs chose the Tubular in preference to all others because the Dairy Tubular contains no disks or other contraptions, has twice the skimming force of other separators, skims faster and twice as clean, and pays a profit no other can pay. Mr. Armstrong says:

"Austinburg, Ohio, May 29, 1912.
"The Sharples Tubular Separator has done fine work all the time."
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GARDENING

BY T. GREINER

Chicory as a Weed

NOTWITHSTANDING some warnings found in agricultural papers, there seems to be but little danger of chicory, grown as a garden vegetable, ever becoming a weed pest in any well-regulated garden. It can only spread by means of seed, and with the exception of a root or two, which I leave in the ground for the second year for raising a little seed to sow the following spring, I do not leave any chicory-plants in the ground to go to seed, or if I have missed some of the roots in the fall, I take them up in spring, or anyway as soon as I notice the large, conspicuous blue flowers later on. I must have my "witloof," or, as generally called in the trade, "Holland endive."

The Yellow Husk Tomato

The various husk tomatoes are of a somewhat weedy nature. They easily reproduce themselves from seed in the old patch. At least, we always find a lot of plants springing up here and there in the spot where we had one or more plants the year before. The fruit when ripe falls to the ground, still enclosed in the husk, and the specimens left will rot, and the many seeds are scattered in plowing and harrowing. Some of these seeds are bound to find conditions favorable to germination. If you want some plants, watch for them during early summer. The fruit even on late plants usually has a chance to mature.

Currants for Jelly

A New England reader asks about "the best variety of currants" for jelly-making. The black currant, of which we have a number of varieties, is often recommended as particularly useful for jelly, and the jelly made of it as particularly wholesome. All currants, however, make excellent jelly, and the standard sorts, such as Cherry, Fay's and especially Wilder, are so much more productive and more easily grown that we are entirely satisfied with them. Personally, I prefer the Wilder to all others, even those newer wonders, the North Star, Perfection, etc. I am not acquainted with the French sort, Bar-le-duc.

Corn has no teeth; it drinks soup. The more you cultivate the crop, the more soup; the more soup, the more corn.

If you are thinking of doing your neighbor an evil turn, just let the weeds go to seed on your side of the fence.

Simple Scab Remedies

On mucky soils, or soils even the least inclined to being sour, potatoes usually come out clean and free from scab infection. Under ordinary conditions, it is always safest however, no matter what the character of the soil, to treat the seed-potatoes for scab. Corrosive sublimate (bichloride of mercury) is easily obtainable in local drug-stores (more so, often, than formalin) and not expensive, although very poisonous when taken internally, and requiring care in the handling. Dissolve an ounce of it in a gallon of hot water, and add cold water enough to make seven and one-half gallons. In this liquid soak the seed-potatoes for about ninety minutes. Then take them out, let them get dry, and when ready to plant, cut them up in suitable pieces. The solution may be used for a second and third lot of seed-potatoes, and perhaps for more. Be sure that stock, chickens included, will not get hold of the potatoes after they have been thus treated.

But if you do not find it convenient to treat potatoes in this manner, you may at least spread them out in more or less full exposure to the sun, turning them over occasionally, so that the direct sun-rays will have a chance to kill the scab germs on every part of every potato. This treatment is called "greening," as the tubers turn to a greenish color. In a few days of exposure to full or subdued light, short and stubby sprouts will appear, which are not readily rubbed off in planting, and after planting will start into prompt and strong growth. I emphatically recommend this "greening" process, especially to all home growers.



An old-fashioned bee-skep

Some plans should be executed, others electrocuted.

"When the Lord sorts out the weather," as Riley says, some farmers get all out of sorts.

California Competition

A VERY dry year which will seriously affect a fruit crops and eastern shipments is in prospect in California. California is a semi-arid State and needs all the rain that is ever likely to fall, but this season by the first of April there was, generally speaking, only a very little more than half the normal rainfall throughout most of the State, and the rainy season was almost at an end. In most places this rain had been insufficient to make the moisture from below and that from above meet, while the upper moisture, extending perhaps a foot and a half into the ground, was pretty well exhausted by the weeds and natural grasses that had been growing during the winter. While this moisture has been sufficient to keep trees and grass in fair enough condition in most places for the time being, it is far from enough to supply the foliage of the trees with the moisture they need to mature a good crop. In a number of places it was too little to have the pollen active, and the fruit did not set as it should.

Fortunately many of the orchards of the State are planted where permanent ground water is within reach of the deeper roots, and these will probably bear fairly well. Pump manufacturers have also been working to capacity supplying pumps for ranchers, and many of these will be able to supply their trees with the moisture that the skies have not provided. As there have been no serious frosts to speak of and as the fruit set well where the ground was kept in good condition, some very large yields may be expected, although the percentage of trees on non-irrigated land will greatly diminish the yield as a whole. In those non-irrigated orchards where there is sufficient moisture to

make a small crop, the fruit is likely to be undersized and of rather inferior quality. Where there is neither ground water nor irrigation, the crops will be a total failure.

The open spring and winter that have resulted in a dry year, and the lack of frosts that signifies a warm spring has had the effect of pushing along much more than usual the blossoms and fruits, and unless the remainder of the season is exceptionally cool all fruits will be put on the market very early. Most of them will neither meet nor give great competition to similar eastern crops.

Of the different fruits, probably pears will come nearest to making a full crop, as they are largely raised on low land close to streams, where there is sure to be good supplies of moisture in the soil, no matter how little rain falls. The pears this year have bloomed evenly, and the thrips, which mars some of the fruit, has been kept under very good control.

Most table grapes are also either so deep rooted as to secure sufficient moisture to make a good crop, or are located on irrigated sections where they can be given all the moisture required. Tokays, the main table grapes, which are marketed from August on, have been overplanted and new acreages are coming in every year. Although the yield per acre will be less than last, there will be sent East all that the market can stand. Last year most of these were shipped at a big loss, but as there is nothing else to do with them and as the growers will have to take a chance, they will continue to ship heavily. The shipping season will be longer.

The biggest part of the difficulty in marketing the crop last season was due to the desire of the growers to send off early grapes, and as a result most of the grapes were sent away in an immature condition. The agitation against this practice and the efforts of standardization organizations is expected to remedy this condition somewhat and to put a more desirable product on the market. The lack of rain in Tokay sections, on the other hand, will reduce the yield per acre, also the size and quality of the fruit.

Immature Grapes Were Sold

Upon the mountains the blanket of snow is much thinner than usual and will run off much quicker. It will supply all the water that is required for the irrigation of orchards, but make a shortage for alfalfa during the latter half of the season, and reduce materially the production of butter. Last year California succeeded in producing all the butter that the State could consume, and for the first time had, in addition, a large amount to ship to other markets of the country. As a result of poor pasturage and little irrigation water, it is fairly safe to estimate that there will be enough for home consumption, but probably not a great deal to send off next fall. Not a great deal of storage butter will be available, either. Of ladle butter, California produces but little, as practically all the cream is sent to creameries, and the butter produced is almost uniformly of the highest quality. A big surplus of first-grade butter, that has to be stored, bars out somewhat the eastern ladle butter, and with a shortage of storage stuff there will be room for more to come in.

The stockmen suffer most from the dry year. As I write they have little grass and claim that they will be unable to get their cattle fat enough to market, no matter how soon they try to get them off their hands.

Most of the barley and wheat is grown on summer-fallowed land and has the moisture of two years to draw upon, so will suffer less than might be expected. Present indications are that it will make from about sixty to seventy-five per cent. of a crop, according as rains are scarce or up to the average for the remainder of the season. The grain planted on ground used last year, except on reclaimed delta lands, will not even make hay, and hay prices, now exceptionally high, are bound to soar much higher.

Potatoes and onions are mainly grown on land reclaimed from the river. High prices have encouraged a large amount of planting, and while there are many things that influence the size of the crop, if everything is normal for the rest of the season, the greater crop there on reclaimed land will probably fully balance a short crop on the higher land, which is generally so small, anyway, as to form but a small proportion of the whole.

Shipments of oranges and lemons from the citrus sections, owing to the extremely heavy frosts of late December, are going to be much less than it was previously believed would be the case.

As influencing the estimates of the size of the crops indicated above, it can be said that at this writing it is too early to be entirely sure of anything. If the rest of the season is normal, they will probably be about as indicated above. If heavy rains come, as they may, the yields of everything will be very good. If heavy frosts come, they will be less. Neither are likely to occur.

Up until the first of March it looked almost like a total crop failure, as less than a third of the normal rain had generally fallen. By the middle of March most persons were feeling very hopeful, as the rains for two weeks were fairly heavy. Since then they have felt that failure had been avoided, but a big shortage would have to be faced.

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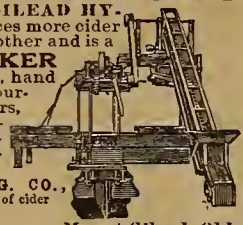
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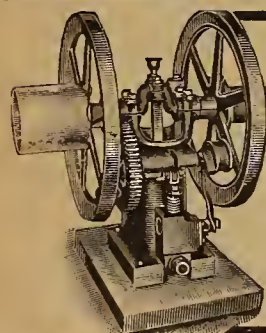


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The FARMERS' LOBBY.

How the Two Big Conventions Worked

By Judson C. Welliver

THE last letter to The Lobby was written from Chicago, just before the balloon ascended. This one is being written from Baltimore, on the eve of the nomination; and no state secrets will be unduly exposed if I observe at the outset that the political aviators have been making some altitude records here, almost as startling as those that marked the Chicago meet.

This is the open season for politicians and machines. It's perfectly regular and good form to capture and execute 'em on sight—if they don't see you first and do it to you. As I write, it isn't possible to state whether the politicians are going to prove the hunters or the hunted. The convention hasn't made up its mind yet. But one thing has been made very certain by the political developments of the season to this date. It is that the good old game isn't what it used to be; the rules have been balled up by a lot of amateur performers breaking into the big league and trying to fix things so they might have a chance to win. Nothing could be more indecent, for instance, than for a lot of Roosevelt Republicans to squeal right out loud at having their pockets picked of all their available assets. It's demoralizing to sport, musses up the grounds and makes it extremely doubtful whether our real, true-blue, thimble-rigging specialists of the old school will be able for much longer to devote their attention to the promotion of such a game.

The Chicago Situation Was No Puzzle

Take the Chicago situation first: According to the established rules and all the decent proprieties, there was only one thing for the Roosevelt crowd to do when they saw that they were to have their skin taken off and tanned on the back fence in the rear of the Coliseum. They should have looked as pleasant as possible, rubbed some cocaine on the places where it hurt and made affidavits that they liked it fine. They would have proved themselves true sports. Then they should have gone out and delivered themselves of interviews, declaring that they had been honestly defeated in a fair fight and were going to support the ticket, as every loyal Republican should do. They would have passed out that stuff from now till election and tried to con the country into the belief that they meant every word of it. But they didn't perform according to the rules, and that's what tipped over the apple-cart.

Instead of proclaiming that it was fine to be skinned, and that being robbed made them feel richer than ever, they got right out at the corner of Main Street and Central Avenue and announced that they wouldn't stand it. They didn't feel bound to support a ticket for which the nomination had been stolen; and by way of demonstrating their sincerity in that proposal, they got together a convention of their own, representing the delegates honestly elected to the convention, nominated Colonel Roosevelt and set about the little task of organizing a new party.

Mr. Taft Needed the Goods

Right here let me say a word about the merits of their case. I went to Chicago two weeks in advance of the convention's opening. Day and night, I lived in that political maelstrom. I saw the performance, knew the contentions of both sides and tried as honestly as I could to weigh the testimony pro and con. Therefore, I insist that my verdict is honest and intelligent, and it is that the nomination of President Taft was stolen; stolen as literally as ever a crime against morals was committed; stolen on no pretext other than any thief gives; namely, that he needs the goods. The members of the national committee, who stole it in the first instance, and of the credentials committee, who indorsed the larceny, justified themselves on the ground that anything was warranted so long as it looked to beating Roosevelt. It made no difference that the people wanted him. That was not the question. The politicians didn't want him. They had the money and the control of the national committee. A burglar who would go into court and plead that, having a perfectly good jimmy and a bottle of nitroglycerine, he cracked the safe and took the contents because it would be wrong to let the tools and the explosive go unused, would stand in just as good a position before the court.

Colonel Roosevelt honestly carried a comfortable majority of the delegates to the Chicago convention. There is no doubt of it. No end of talk and technicalities and

fog and flub-dub can hide the naked fact. The X-ray of publicity got turned on the performance, and the skeleton, grinning and hideous, came into full view. Roosevelt was entitled to the delegates of Washington State, of Arizona, of the Fourth California District, of Texas; they were taken away from him, and the taking turned a Roosevelt majority into a Roosevelt minority, a Taft minority into a Taft majority. That's the cold, clammy fact, and the men who did the trick made little pretense, in their private discussions, of denying it.

These Are the Men Who Did It

If you are willing to take my word for this much, come along with me now while I undertake to show who did the stealing, and in what interest. The general directors of the operation were Senators Penrose of Pennsylvania, Crane of Massachusetts, Smoot of Utah, Congressman McKinley of Illinois (chairman of the Taft campaign committee) and a group of satellites who belong to the same general machine of congressional control. These are the men who to-day dominate legislative business in Washington, just as Aldrich, Hale and Cannon did in the old days. They need a president in their business, and they were engaged in the business of getting one.

These men represent big politics and big business. They were out to capture the Republican nomination. They did it.

When I got to Baltimore, I found that an exactly parallel situation was organized here. The agents of big politics and big business were organized to capture the Democratic nomination as well. At their head was Chas. F. Murphy, boss of Tammany hall and head of the Democratic organization in New York. He stood, absolute autocrat of the ninety delegates from the Empire State, determined to make such a nomination as would be satisfactory to the interests he represents. Allied with him in that purpose was Roger Sullivan, Democratic boss of Illinois, with the solid fifty-eight votes of that State at his back; and Tom Taggart, boss of Indiana Democracy, with Hoosierdom's thirty-six votes practically solid for whatever he might demand.

Along with these men stood Thomas F. Ryan, traction magnate of New York City and organizer of the Tobacco Trust, lately "busted" by the federal government in a fashion that made tobacco stocks worth a lot more than they had been before the "bust," and a group of other men of big business. They wanted a "safe and sane" candidate for president. At Chicago they had operated through the Republican bosses already indicated; at Baltimore, through the group who infested the convention lobbies there.

The parallel is perfect; it may be traced out to the last details. William Barnes handled New York and its great delegation at Chicago; Charley Murphy handled the same State at Baltimore.

In each case, the first fight of the bosses was to get a temporary chairman of their own sort. At Chicago, they presented Elihu Root, whom Mr. Ryan once referred to as the most skilful attorney he had ever employed. At Baltimore, they put forward Alton B. Parker, whom the Ryan-Belmont traction group once backed for president because he was the kind of man they wanted for president.

Two of a kind, Root and Parker; and behind each lined up the same general set of interests, political and otherwise. Root was elected chairman at Chicago because he had the support of New York, most of New England, the majority of Ohio and Indiana and most of the solid South. Mr. Parker was elected chairman at Baltimore because he had those same forces back of him.

Root was opposed at Chicago by Pennsylvania; so was Parker at Baltimore. Root found the great Republican-progressive States of the middle and far West opposed to him; so did Parker. South Carolina broke away from the machine at Chicago and cast most of its votes for the Progressive candidate; it broke away at Baltimore and gave all its votes to the Progressive. Texas voted its solid delegation of forty against Parker at Baltimore; it would have done the same thing at Chicago but for the fact that the honestly elected delegation was thrown out and its seats given to the dishonest contestants who were ready to support the machine program.

Missouri divided at Chicago, and it divided at Baltimore. Nebraska was Progressive at both places; so was Kansas; so were the Dakotas. Minnesota stood square and firm for the Progressives, giving them twenty-four straight votes on every ballot in both conventions.

California was one striking exception; the parallel didn't run to it. It was in the fighting front of the Progressive party at Chicago, because the California Progressives have captured their party organization and their state government; but the California Democrats have not yet got into step with this procession.

Does all this suggest anything about the nature and character of the Progressive movement? Is there any illumination, for instance, in the fact that Wisconsin was solidly Progressive at Chicago and almost solidly ditto at Baltimore? To me it is highly suggestive; it suggests that this Progressive virus, when it once gets into the blood of a community, keeps right on propagating the disease. La Follette worked through the Republican party in

Wisconsin, but he made the whole State Progressive; the Democrats have got the disease in just as rank a form as the Republicans. Stubbs and Bristow and Murdock and William Allen White and Henry Allen, in Kansas, have been Republicans; but they have communicated the infection to the Democrats just as well as to the Republicans.

Turn to the other side, and you see the same thing. In Oklahoma, Senators Gore and Owen and Governor Haskell, all Democrats, have been the heads of the political scheme ever since the State came into the Union. They are all Progressives, working through the Democratic party; but the Republicans of their State have got the idea, and they turned up at Chicago just as Progressive as the Democrats at Baltimore.

If a State is Progressive, It Shows It

That's the way it works all along the line. Let a State be ruled by a political machine of one party, and you will find a sort of reciprocating engine of practical politics at work in the other party as well. New York is the splendid example. No matter what party carries New York, it will be in control of a bad machine; if it flops to the Democratic side, it falls into the lap of the Tammany Democracy; if it wobbles Republicanward, it is at the tender mercies of the Barnes organization.

Pennsylvania got religion all at once this year. It had been the worst boss-ridden State for many years. The Democrats started the reform thing going and carried their delegation for Wilson. Immediately the infectiousness of reform manifested itself: the Republicans got excited about the impropriety of letting the Democrats have a monopoly of such a good thing, and so they got up a great popular reform movement which swept the State away from Penrose control and into the domination of the Van Valkenburg-Flinn-reform crowd of Republicans. It sent an almost solid delegation for Roosevelt to Chicago, and about the same sort of a Wilson delegation to Baltimore.

The popular primary as an instrument, backed by the awakened public conscience and interest in those States to which effective appeal has been made in recent years, did the business. It is just as plain as anything not yet written into history can be, that this movement is going ahead in the immediate future. But suppose several States pass primary laws within the next four years, and then the national committees, composed of reactionary agents, draft their national convention calls in such manner as to make selection of delegates by primaries impossible. What then?

What About the 1916 Delegates?

The Republican committee undertook to do that this year; and the Republican convention went on record, in its decision of the Fourth California District contest, to the effect that if it didn't like the state law for selection of delegates, why, it would kick the offending law down-stairs and have the delegates selected as it liked. The Fourth California delegates were selected under the law of the State. A technical objection was raised, to the effect that all California delegates were selected en bloc; all the voters of the State voted for all the delegates, whereas the call for the convention provided that the voters of each district should select the delegates from that district. If this rule had been logically sustained and enforced, then the entire California delegation would have been thrown out of the Republican convention. That would have been rather too raw, so the convention merely went far enough to establish a precedent in the matter of the Fourth California.

But there is the precedent. Suppose a dozen States pass laws like that of California, within the next four years. What will happen? When the Republican committee meets in December, 1915, to call a national convention for 1916, it will turn solemnly to the precedent made in 1912: it will find that the Republican party has refused to recognize delegates chosen under such laws; and it will thereupon draw up a call, which will in effect assume to nullify the laws of all these States, provide instead for the selection of delegates by the old-time soap-box caucus plan and put the old machines back into the saddle!

This is not a far-fetched alarm I am raising. It is a plain description of what is in store, if the party committees are to remain in the hands of the reactionaries and if the Progressive movement shall continue to gain in strength. You can see every link in the endless chain that is intended to bind the people to the treadmill of machine politics if you will but look.

The Presidential Riddle Will Be Solved

It's the endless chain. There are people who insist that it can be broken, effectively and finally, only by federal legislation. Senator Cummins has introduced a bill to accomplish this. Some of the congressional lawyers insist that there can be no federal presidential-primary act without first an amendment of the Constitution. Thanks heaven, I am no constitutional sharp; I am merely inclined to think that, inasmuch as we need such a law, the Constitution will probably be found to prevent it. The Constitution usually does head off the things we most need, and why not this?

By the way, suppose the Progressive party captures a comfortable bunch of States, have you stopped to wonder who would get the presidency? Under the Constitution, if no candidate receives a majority in the electoral college, the election is thrown into the House of Representatives. There, each State has one vote. A State with eleven Democratic representatives and ten Republican representatives would cast its vote for a Democrat, and vice versa. The House, in voting, must confine itself to the three candidates who have received the highest numbers of votes in the electoral college.

The present House, not the one to be elected in November, would do the electing of the next president in that event. Now comes the most startling thing of all: If the present House were to elect a president to-day, it couldn't do it, because there would be twenty-four votes for a Democrat and twenty-four for a Republican!

But there is no need to worry. Out of that body of men, there will be more than one death between now and next January; some delegation or other will have its political complexion changed, and we will get a president.

Somehow or other our institutions will be preserved, even though at times we incline to suspect that some of 'em are a bit wabby.

A Plain Steal

THE nomination of President Taft was stolen; stolen as literally as ever a crime against morals was committed; stolen on no pretext other than any thief gives; namely, that he needs the goods. The committee members who stole it justified themselves on the ground that anything was warranted so long as it looked to beating Roosevelt. A burglar who would go into court and plead that, having a perfectly good jimmy and a bottle of nitroglycerine, he cracked the safe and took the contents because it would be wrong to let the tools and the explosive go unused, would stand in just as good a position before the court.



"Oh, mother—mother," he gasped. "Come here!"

Uncle Johnny's Back-to-the-Farm Movement

By William H. Hamby



AMONG the first visitors to Thomas Henderson Black's new real-estate office were Uncle Johnny Cramer and his wife.

Uncle Johnny was as cheerful and guileless at sixty-five as he had been at six. His wife was a little younger and felt the responsibilities of life a little more heavily. But even her eyes often twinkled through her glasses, for no one could live with Uncle Johnny and be entirely solemn.

"Tom Henry," began Uncle Johnny, "I've been thinkin' about tradin' my farm for a grocery-store and moving to town. I ain't as spry as I once was, and I think I would like to try a settin' job a while."

"And I could help in the store," said Mrs. Cramer, "and we could get our groceries at cost."

"We thought we would come to you first," said Uncle Johnny, "because we knew, Tom Henry, you are honest." The old man shook his head with a tremendous effort at cynicism. "I reckon there ain't many honest men in the world, especially real-estate men."

"Why, Pa!" protested his wife.

"Oh, it's all right, Mrs. Cramer," Thomas laughed. "It does not hurt my feelings at all for people to talk about real-estate men."

"I just had a letter from a man yesterday who wanted a trade of that kind." The young man began to search in a pigeon-hole of his desk. "Here it is. He lives at Beckler, and says he has a nice clean grocery-store that he wants to trade for a small farm valued at about \$2,500."

"Just the thing," Uncle Johnny slapped his knee. "Ma, ain't it lucky we came to-day? Beckler is a mighty nice little town, and that's just what I price my place at."

The Cramer farm was small and not valuable land, but it was well kept and well tilled. There were good fences and a comfortable little house, and the old people had always made a good living on it and kept out of debt.

"Very well," said Thomas, "if you think you might want to trade, I'll write him."

Uncle Johnny moved uneasily in his chair. "Wouldn't it be quicker to go and see him? Somebody might get it first. I think that's just the store we want."

"Now don't be in too big a hurry, Pa. Remember that white horse you traded for."

"Oh, well, pshaw!" said Uncle Johnny, "if you are going to trade, trade. Ain't no gain in puttin' things off."

"I could go with you to-morrow," suggested Thomas.

"Why can't we go to-day? I have my spring wagon here, and we are already part ways."

"I guess I could go to-day," said Thomas.

And nothing would do Uncle Johnny but they must set out within the hour.

It was thirty miles to Beckler, and they planned to get there by dark, stay all night and look at the store in the morning.

Soon Uncle Johnny was whipping up his horses in his anxiety to get there.

"Don't you reckon, Tom Henry," he said, turning in the seat, "that feller would let us look at the store to-night?"

"Maybe so," answered Thomas, smiling. And he saw quite readily why Mrs. Cramer always deemed it wise to be along when Uncle Johnny went to trade.

They arrived at Beckler a little after dark; and Thomas insisted on leaving the old people at the hotel for supper, while he went out to make inquiries.

Uncle Johnny violently protested. He wanted to go along.

"I'm afraid," he confided to Martha after Thomas was gone, "that they'll get together and fix up the price on us, and we'll have to pay more for it. You can't watch these real-estate men too close, it seems."

"Why, Pa! don't talk that way," protested Martha.

"Oh, I know Thomas is a good boy. But in business it's every feller for hisself, and you got to stand on your own judgment." Uncle Johnny was proud of his judgment.

The young real-estate man learned by casual inquiry on the street that the grocery-store was well located, that it apparently had a good trade and that the owner, Chris Bayler, was a new man in town. He had owned the store only a few months. Not much was known of him except that he was a great trader and seemed to have plenty of money.

Thomas returned to the hotel and managed to constrain Uncle Johnny until morning. But the old fellow was up at four, and before sunrise was on the steps of Bayler's grocery-store waiting for it to be opened.

The real-estate man made himself known to the grocer, and introduced the two old people.

"They have a little farm they want to trade for a store, and I brought them over to look at yours."

"All right," said Bayler, "help yourself." And he gave a sweep with his arm which indicated they were to look all they pleased. Bayler had dark, oily skin; restless, black eyes, and a moustache with pointed ends.

"You see," began Uncle Johnny eagerly, "I have a real nice little farm; it ain't as rich as some, but it raises good crops, and it's in A 1 shape. It's worth twenty-five hundred cash. It's just a mile from Buckeye Bridge, on the Sarvis Point road, the north side."

"Well, how'll you trade?" Bayler stroked his moustache indifferently.

Uncle Johnny's one glance around the store had satisfied him. The more he thought of a thing, the worse he wanted to do it. His eagerness had grown with every hour since they left Buckeye Bridge.

But his wife began to ask questions: How much goods were in the store? How much trade did he have? What was his profit?

"Now see here, folks"—and Bayler made a careless gesture—"I'm a trader. I trade quick whether I win or lose."

"Once I was driving along a country road, and it was pitch dark. I had a good team and buggy. Directly I heard somebody coming the other way. I took a sudden notion to swap horses."

"Hello," I called to the fellow in the buggy, who immediately stopped and said, 'What do you want?'

"How'll you swap horses—two of 'em?" I asked.

"Give you an even trade," he answered just as quick as that, and he jumped out of his buggy.

"All right, it's a go," I said; unhitch.

"Supposin'," says he, "we just trade buggies, too—save unhitchin'."

"Here goes," I says, and climbed over into his buggy, and turned around and drove on.

"Now," he turned to Uncle Johnny, "that's the sort of a trader I am. I'll give you my store for your farm right now. If you want to trade, all right. If you don't, all right."

"But you see," Mrs. Cramer put in before Uncle Johnny had time to answer, "we don't know a thing about the store. We haven't even had time to look at it."

"Look all you please and as long as you please." Bayler began to prepare for the morning trade. "Only remember I neither ask nor answer questions."

Mrs. Cramer and young Black took pencil and paper and went around the store, roughly estimating the quantities and prices of things. They counted one shelf of canned goods, and then figured from the number of shelves—there was a great deal of canned goods. They went into the ware-room and counted the barrels of sugar—there were twenty; they estimated the amount of coffee, meat, etc.

"It looks like," said Mrs. Cramer after a rough estimate, "there must be over three thousand dollars' worth of truck here."

"It figures that way," agreed the real-estate man.

The three went back to the hotel and talked it over.

At four in the afternoon the trade was made, and the papers signed.

Thomas Henderson Black received a check from Bayler for fifty dollars as commission on the trade and started at once for Buckeye Bridge. The old couple remained to rent a house and take charge of the store.

About two weeks later a call came from Beckler for Thomas Henderson Black to come over quick. It was a cry of distress from the old people.

When he entered the store, Uncle Johnny stood forlornly behind the counter, while his wife moved along the shelves taking down cans in an agitated way.

"What seems to be the matter?" asked Thomas.

"Beat out of our eye teeth," said Uncle Johnny gloomily.

"We're cheated out of our farm," Mrs. Cramer said on the verge of tears. It was evident she had been crying. "More than three fourths of them cans haven't a thing in them but water, and there is only about a foot of sugar in the tops of the barrels."

"Same way with the coffee," put in Uncle Johnny. "There ain't hardly a thing around here that is what it looks like."

"You know I didn't suspicion nothing until I had sold a lot of stuff," explained the old lady. "And then all at once folks begin to bring things back and 'phone to me. And it was scandalous the way they talked to us." She made a dab at her eyes with her apron and her voice rose hysterically. "Said we was dishonest, and they threatened to have us arrested for selling cans of water."

The young real-estate man helped them investigate the stock. It proved worse than even they had guessed. There was less than five hundred dollars' worth of actual goods in the store.

"And just to think, Tom Henry," said Uncle Johnny accusingly, "we thought you were honest, and then you go and persuade us into a thing like this."

"And now we haven't any home, nor nothing," added the old lady bitterly.

"I am very sorry," said Thomas. "You remember I did not even advise you to trade. I did not know any more about it than you did when you sold folks canned water. We must try to find that rascal Bayler."

"We can't," said Uncle Johnny. "He sold the farm the next day and skipped out. Nobody knows where he went."

Thomas helped them assort the water from the goods and wrote out a little advertisement for the paper, explaining the situation and freeing them from blame.

"You will have to go ahead and do the best you can," he said. "I do not know whether anything can be done about it, but I'll help you if I can."

Thomas left them in the deepest [CON-

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Chris Bayler



My Christian

By L. M. Powers

FOR twenty years I have been a minister. I have always been fortunate in the people to whom I have ministered. I have always told all the truth I felt sure of, and sometimes more, and am not yet a martyr. I am not a grouch or a pessimist. I believe that church people have a greater devotion to the public welfare than those outside the church. I have always found people quick to respond to any call for charity. Yet, in all these twenty years, I have had dealings with only one man who might possibly be called a Christian. I say "possibly" because that Carpenter of Nazareth, who set the Christian religion in operation as a "going concern," left a well-nigh unattainable standard.

No one certainly deserves to be called a Christian who does not know what the First Christian was after—and most of those who bear His name do not. Possibly my friend falls short in some particulars, but always, when I tell what I know about him, the comment at the close is, "Well, that man is a Christian."

One day, while living in Buffalo, I received a letter from a man whose name up to then I had never seen or heard. The letter contained a check for one hundred dollars, with the request that I expend it for the benefit of an old sculptor who was then engaged on what proved to be his last work, a bust of Ralph Waldo Emerson.

This sculptor, Sidney Morse, will probably be remembered by some of the older Bostonians. He was at one time editor of the "Radical," and some of his verse has been preserved by George W. Cooke in his volume, "The Transcendental Poets." A bust of Emerson in marble by him is now in the Second Unitarian Church, Boston.

Sidney Morse was a genius, with all the improvidence so characteristic of the genius. When he had five dollars, he was more likely to share it with his newsboy and shoeblick friends than he was to expend it for what others would consider necessities of life. My unknown correspondent evidently knew the worth of this fine old genius, and also the only way by which he could be helped.

Sidney Morse had given his life unselfishly for larger religious ideas, for securing liberty for the slave, for truth and beauty, and only for the help he received from "my Christian" would have suffered much in his last feebler years.

Altogether his benefactor gave "this friend of humanity" some eighteen hundred dollars during the last two or three years of his life, "because someone ought to care for a man who has done as much good work as Sidney Morse."

Some time after Morse's death, I received a letter in the now familiar hand, saying, "I have been rather fortunate in making money. How would you like to help me spend a little?" To this I replied, "Look out, or you will be immortal. You come nearer to originality than anyone I ever had anything to do with. I have lived some time and had endless opportunities to give my few dollars away, but your offer is the first chance to help spend another man's money that ever came my way." I did know, however, of several people I wished to help and said so, and the offer was made good.

Years passed, and I had never yet seen the man who had used me as his almoner. Suddenly the call came to me to find five hundred dollars for one whose life seemed to hang upon the ability to get immediately into a more favorable climate. Now, not many ministers have five hundred dollars in cash. I did not. I did, however, have some valuable books. Knowing "my Christian" to be a man interested in progressive ideas, it occurred to me that he might be interested in a collection of first editions of Walt Whitman. So I wrote him, asking if he cared to buy them, telling him incidentally why I wished for money. By return mail, I received a letter saying, "Hang your old books. I don't want them. You can use books better than I can. But here are five hundred dollars. Get that sick man into the mountains quick and forget it." How would you characterize a deed like that from a man you had never seen? The sick man went to the mountains and got well. He is a Christian minister, and has now been taking care of his family and doing good work in his profession for twelve years—his life in all probability saved by this timely help from an unknown friend. Did you ever meet a man you felt sure

knew how to use money better than you do? I never did but once. When "my Christian" sent that five hundred dollars to a strange minister for a sick man, it was as a gift. But when fortune smiled a little some years later, I insisted that he take it back, for I knew he would keep it working. I knew he could make a dollar do more for humanity than I could.

But someone may say acts of kindness are common. Very true. However, giving money as beautifully as a poet writes a poem or an artist paints a picture is not so very common after all. Giving five hundred dollars to one the donor has never seen, through another person he has never seen, has not been common in my experience. And these incidents which I have given are merely illustrative of what "my Christian" has done and is doing continually. If all those to whom he has been thus kind, and kind in countless other ways besides, were to present themselves at once, what a vast concourse of them you would have!

However, if individual acts of charity were all "my Christian" had done, this article would be without excuse. But later years have shown me that personal matters of this kind are only the passing incidents of a heart that responds indeed to human needs in the concrete, but which is nevertheless dominated by an intelligence of world-wide vision and far-reaching plans.

There is a very keen and comprehensive mind working along with that heart, and anyone who hopes to find an "easy mark" on account of this story will surely waste his time.

His reputation for kindness brings to his London office a constant stream of people seeking help, but theoretically "my Christian" does not believe in charity of any kind or in any form. "For what right," he hotly declares, "has one human being to arrogate to himself the part of Lord Bountiful toward another human being?" His one aim is to abolish all forms of special privilege. "My Christian" is filled with a passion for justice that transcends all creeds and national boundaries. Whether the passion for justice is really a Christian virtue may perhaps be questioned.

Undoubtedly the Founder of Christianity was moved by a sense of justice, but the history of the Christian church in all lands shows vast activities in the field of charity, but only spasmodic and futile efforts for justice.

All the life and wealth of "my Christian" is spent in trying to remove those artificial barriers that prevent men and women from making the best use of themselves. He believes that the only fundamental help is that which helps people to help themselves.

He has given much time and money in assisting the great democratic revolution that is being accomplished in Great Britain. He is matching his purse against the purses of the world in an attempt to educate cities, states and nations in the science of taxation.

And in one thing at least he is unique in the world to-day. He has worked out a plan by means of which he is an active force in practically all civilized countries. He aims at fundamental things. He believes that first things must be first, and that to transfer taxes from industry to land values is the most important reform in the world to-day.

To help this movement is his life and religion. So for every dollar that anyone will give for this purpose in the United States, Canada, Great Britain, Denmark, France, Sweden, Germany and Australia he has agreed to give another dollar.

It is one man matching his wealth against the economic sanity and generosity of the world. It is pretty near the sublime, and when you consider how profoundly a tax on land values alone must change society for the better, is it not apparent that no other man of large wealth is really influencing the world anywhere near as much as Joseph Fels of Philadelphia and London?

For now you have his name and generation. My ideal Christian is Joseph Fels, and possibly it is not an accident that, like the First Christian, he is a Jew.

A New Annual Meeting

By Rev. M. B. McNutt

THE "Annual Meeting" of DuPage Church, Plainfield, Illinois, is held regularly on the third Saturday of each March. This institution is different from most annual church meetings in that no reports are made, nor business of any kind transacted. It is family day, when its mothers and babies and all in the home, including the servants, make a special effort to be present. It is a homecoming of all friends and former members of the church. The members of other denominations in the community are always invited to share the good things of this most enjoyable occasion. A banquet is served at the noon-hour, free of charge, by the women's societies. A table is arranged especially for the small children and boys and girls, which is a great delight to the little folks.

No offering is taken for any purpose at this meeting. The program consists usually of singing the old hymns by the congregation, special selections from the choir or chorus and at least three addresses on vital topics by the best men from outside the parish that can be secured. Some years the roll is called, the members of the congregation answering each with a verse of Scripture. Those who are not able to be present or who live at a distance send messages of greeting. A memorial service is held for any who may have passed away during the year.

The main purpose of the day is to afford opportunity for the exercise of the broader fellowship in the community, which draws no lines but knows only the great brotherhood of man. A further purpose is to bring new inspiration and courage to all, and it surely is a day on the mountain-top.

These annual reunions are cumulative. They are growing more and more in interest and in the appreciation of the people from year to year. The meeting this time, which was the tenth, was attended by the fullest representation of the parish we have ever had. Over two hundred people were feasted on this occasion in more senses than one. The men of the parish think it well worth while to leave their work to attend, though the event comes just at the beginning of a busy season.

Anniversary days such as this calling out the entire community are usually rare in the country. But they are invaluable in helping to promote a wholesome community spirit and in preserving the history and traditions of the people.

The accompanying photograph shows some of the banqueters.

Overcoming Destiny

By William J. Burtscher

CAN a man overcome destiny? He can. Cain did, and what Cain attained can again be attained.

Cain was a farmer who did not do as well as he might have done in new ground, and, besides, he was selfish. When he brought his offering to the Lord, he picked out all the nubbins, and kept the best for himself. The Lord demands our best. If our best work is done with our hands and our poorest with our mind, it would be selfish to keep the hand-work for ourselves and give only of our mind-work to the Lord.

Cain had a neighbor who was a stockman. His name was Abel, and he was Cain's younger brother. As becomes a younger brother, Abel was following Cain as an example. But not in this matter of offering to God. He profited by Cain's mistake. Abel brought of the best he had and found favor.

The good and bad side by side must have made the good seem better than it was, and the bad worse. God smiled upon the one and frowned upon the other. God demands our best. If nubbins had been Cain's best, they would, of course, have been accepted.

Cain became angry at his brother for something he was to blame for himself, and had an argument, which resulted in his neighbor being killed. In the first conflict between good and evil the good

perishes. To his sins Cain adds another—falsehood. He denies knowledge of the whereabouts of Abel, and wants to know if he is to look after his younger brother all his life. He ought to be old enough now to look out for himself.

God pronounces a curse upon Cain—that the earth shall withhold her strength from him, and that he shall be a vagabond upon the face of the earth. Isn't that what happens to man to-day when he sins? All nature and society withholds from him the best, and he wanders about to find a new place where nobody knows him.

But what does Cain do? He at once begins to overcome destiny—he turns the curse into a blessing. He so lived that his children built homes and accumulated property, thus overcoming the poverty due to the earth's withholding her strength. Cain must have been very sad and despondent at times when he remembered his sin against his brother. But he so lived that his children invented musical instruments to drive away melancholy, thus overcoming again. And Cain's children did more, they invented tools of brass, thus forcing the earth to give forth her strength.

Thus Cain and his children overcame destiny, and thus we and our children may overcome destiny.

The man who by nature is destined to be a pessimist can fight against it and so live that he will become an optimist.

The man who is by nature destined to be a thief can fight against it and so live that he will become an honest man, no matter what temptations he may have to steal, or what assurance he might have of riches and exemption from imprisonment.

The man who is by nature destined to be a liar can fight against that and so live that he will always be truthful, even if he had reason to believe that his lies would be believed.

Indeed, no man has to be what he was cut out to be, if it would be better for him to be something else, and he wants to be that something. All he has to do is to fight against it and overcome it. Isn't it a fact that the Lord loveth an overcomer?

Flattery Versus Sincere Appreciation

By Evangeline Dunlop

JUST praise for work well done, or kind, strong words of sincere appreciation for beautiful traits of character or lovely physical endowments is an entirely different thing from words of flattery. The flatterer is insincere and chooses words that influence the listener to think better of him, the speaker, regardless of any foundation of truth for his words. There is only the selfish purpose back of it—some amount of personal attention to be gained, or "a good time" generally desired, or perhaps political wire-pulling, or a trifling social advantage sought for.

Few of us are so hardened as to give poison to a babe, and yet what else but a babe spiritually is a soul that lives on flattery, seeks it, desires it, cannot live happily without it? But the time arrives in the life of each individual when the soul must stand alone, stripped of all these vanities that veil the spiritual sight.

If justice, charity, mercy, love, ruled in each heart, would not harmony or heaven reign on earth? Have you not seen a weak, vain person, or a stubborn, contrary person bring sorrow and grief onto the heads of numerous generous, kindly, obliging people of strong character?

In the words of the good and learned Mirza Assad'u'llah: "Thus, during this mental journey and spiritual exploration, we must advance from the low planes, become uplifted from the conditions of matter, soar on high to the spiritual realm, leave the school of the acquired learning and enter that of immediate knowledge. We must climb the mountain and view the surrounding country from the summit."

Is there a church problem in your neighborhood? Or, are you a church man? Perhaps you are a problem in yourself.

WILLIAM J. BURTSCHER.

When the sun goes down over the hills, does it look with kindly light on all you have done? If you feel that this is so, then you have found your work and need seek for no higher mission. Be thankful and lie down to your rest in peace. In all this world no one has greater reason to say, "It is well with my soul!" E. L. VINCENT.



One of the interesting features of the day

Youthful Sweethearts

By Mrs. Ada Carroll Wortman

There is a growing tendency on the part of sensible parents to keep their children young as long as possible, and this is a tendency that should be encouraged to the utmost; but, unfortunately, the sensible parents are in the minority on the topic that is most essential to the future happiness and well-being of our children, and that topic is the one that bears on the newly awakened attraction between the boys and girls of an age approaching adolescence. I do not say that parents of the present day pay less attention to the childish love affairs of their children, nor that young folks are permitted to "keep company" earlier in life than were young people of a generation or two ago, but there is less of an inclination to take seriously the early pairings off of the children, and herein lies a danger.

When our grandmothers were young, it was customary for young people "to keep company" and to marry at an age that is now considered out of the question. Girls of sixteen and boys of eighteen or twenty were frequently permitted to take their lives into their own hands and assume the responsibilities of matrimony. They took such things seriously and were trained to work, so that, at least, there was creature comfort in store for them. The girls had been taught from their earliest childhood to do all that pertains to the care of a home, and in a majority of cases were among the older children of a large family, so that the care of babies was part of their education. It was not at all unusual for a girl of sixteen to have a practical working knowledge of cooking, sewing, butter-making, the care of the sick, soap-making, weaving and many other tasks that fell to the lot of the home-maker of the day. She was not supposed to need knowledge of books, or music, or any of the thousand and one things that we think our daughters must know to-day, but she could and did keep house with energy and despatch.

To-day, these conditions are changed. We consider it absolutely imperative that our daughters should be graduates of high schools and know how to sing, or play, or paint, or do something outside of the routine of housekeeping. With that end in view, we keep them in school for twelve years of the formative period of their lives, finding as the years go by that each one requires that more of the girls' time be given to study, thereby making less time to be devoted to learning the lessons of home-keeping. I am not finding fault with the system, but with some of the habits and customs of the olden times that are still perpetuated in connection with the critical period of life under consideration. I refer to the reprehensible practice of allowing and encouraging courting among the children.

It is not at all uncommon to see misguided parents laughingly declare to guests in the presence of the child that "so-and-so" is his sweetheart and tease the sensitive child with regard to his predilection for a certain little friend. Some children take to this readily and soon boast of their attachment for the other little tot; others suffer torture under the inquisition and either develop an antipathy for the one who should be but a happy playfellow, or an abnormal and unhealthy affection is engendered, which leads to a lifetime of unhappiness. A boy who has all his short life held in his heart as his dearest friend a winsome little lass, may, as he grows older, and as the result of continued connecting of his name and hers, feel that he is under obligations to keep up the old-time intimacy. In this way, one of two things is apt to result: he hesitates to release himself from the pseudo-alliance, for fear it may cost the girl sorrow; or he binds himself to her willingly at such an early age that he has no means of knowing if she is the one above all others for him.

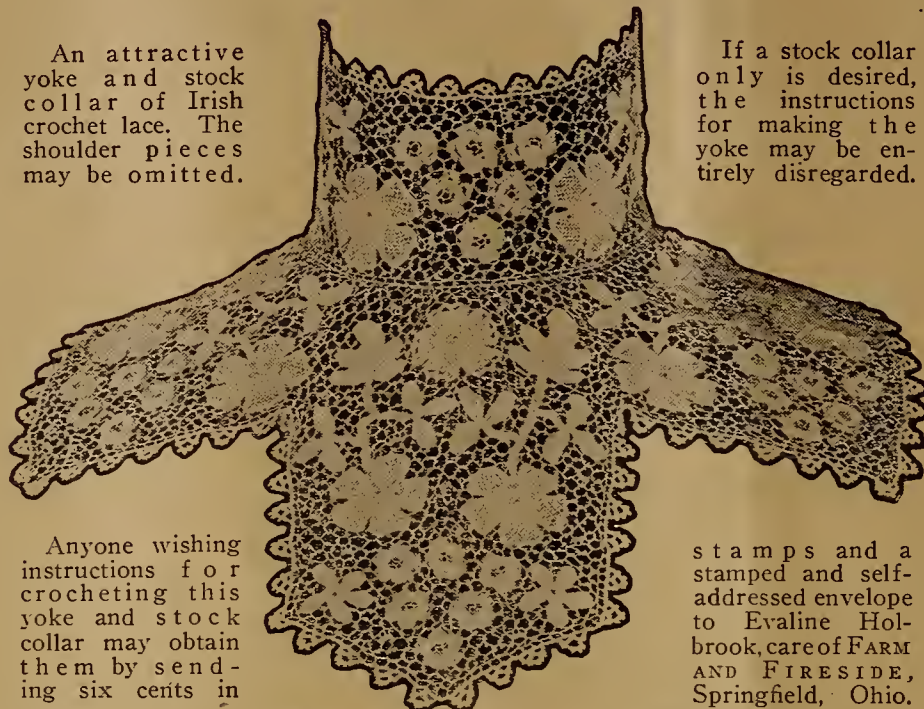
While this phase alone of the situation is bad enough, it is still far from the worst. The boy-and-girl attachments sometimes turn out well, but more frequently disillusionment comes with years, and the affair is dropped. The matter of most moment is the fact that all through high school, when the young folks ought to be just boys and girls together, there is a tendency to pair off, and instead of a big jolly crowd, all working and playing together, there is just a succession of couples, and petty jealousies and strife reign where there should be but good-fellowship and frank camaraderie. The constant succession of class functions seem to make it necessary that the youngsters should go out in the evening occasionally, and there is a strong sentiment among the young folks against having older parties present. They insist that they are old enough to take care of themselves and contemptuously inquire if their parents are afraid to trust them. Of course, we trust them. But human nature is much the same everywhere, and it's well not to trust the primary instincts too far, even in boys and girls of a high-school age.

Yoke and Collar Of the Popular Irish Crochet Lace

By Evaline Holbrook

An attractive yoke and stock collar of Irish crochet lace. The shoulder pieces may be omitted.

If a stock collar only is desired, the instructions for making the yoke may be entirely disregarded.



Anyone wishing instructions for crocheting this yoke and stock collar may obtain them by sending six cents in

stamps and a stamped and self-addressed envelope to Evaline Holbrook, care of FARM AND FIRESIDE, Springfield, Ohio.

Yoke and stock collar of Irish crochet in double and single rose pattern



As a number of our readers do not need instructions for crochet patterns if a sufficiently large detail of the lace is given, we show one of the cents and a stamped and self-addressed envelope to Evaline Holbrook, enlarged. All the stitches are shown.

Detail of design in Dutch collar

Instructions for making this circular collar of Irish crochet will be forwarded to anyone sending six cents and a stamped and self-addressed envelope to Evaline Holbrook, FARM AND FIRESIDE, Springfield, Ohio.



Flat collar of Irish crochet and wheel motifs

Women's Experiment Stations

By Jennie Roberts

A new agitation is just peeping above the ground in Kansas—not populism nor Carrie Nationism this time, but a movement for a woman's experiment station, and it is said to be due largely to the efforts of one woman, Miss Ula Dow.

Why wouldn't a woman's experiment station be a valuable addition to every state agricultural college in the Union? We farm women, as well as farm men, have our problems that need solving. The good which our domestic-science schools is doing for us can scarcely be overestimated, but the main part of the work there is comparatively new and needs systematizing and the addition of accurate knowledge. Those of us who have attended such schools know that much of our working material was obtained by noting lectures and by searching magazines and book indexes for available articles to apply to the particular subject in hand.

At present most of this material is entirely out of the reach of the average home woman, but if the best things advocated in these various book and magazine articles could be tested in a really accurate way and the proven results published in bulletin form for free distribution, the effect might be very helpful. The United States Department of Agriculture has done some of this work already in connection with its farmers' bulletins, but a great deal still remains to be done.

Many of our problems, too, are local. For example, here in Dakota the question of water for household uses is really a serious one. Sufficient cistern-water is not available, and the well-water is very variable; some so hard as to be almost unusable. Each one of us struggles individually with various household softening chemicals—lye, borax, sal-soda and hard-water soaps. In the end, perhaps we succeed and perhaps we do not. A reliable experiment-station bulletin on "Adapting Dakota Well-Waters to Household Uses" would, I believe, prove a boon to many women of the State.

Again there is much to be learned on the heating, lighting, plumbing and ventilating problems of farmhouses, and systems which work well and cheaply in Kansas are a complete failure in North Dakota.

The market is flooded now as never before with labor-saving household machinery, some of it excellent and some simply worthless. Having these various devices tested for us would place the valuable ones within our reach, without our having wasted time and hard-earned money on the apparently valuable but really impractical ones.

New food-materials, new fabrics, new ideas in cooking, in sanitation, in home-management and household problems generally are constantly coming up for consideration. Why shouldn't we American women take steps to have them considered in the same practical and scientific manner as are the agricultural problems of the day? Then, some day, perhaps our women's experiment stations, although not so large, will mean as much to us as the present agricultural experiment stations now mean to the modern farmers.

The Only Safe Way

By Hilda Richmond

SO COMMON is this case that it is hardly worth repeating, but it may serve as a warning to a few people, anyway. A maiden sister had lived for thirty years with a married brother who had a delicate wife, bearing the brunt of the work and the rearing of the children, receiving in all that time her board and clothes and a little money for her trifling wants. Then the brother died, and after a short time the sister-in-law married, leaving the nurse-housekeeper-seamstress-burden-bearer-in-general of the family homeless.

Every unmarried woman living without wages in a relative's home this minute should, without delay, remedy her condition. If the relative needs your services, a fair wage should be paid. Before it is too late, put your life on a commercial basis, and begin earning money. It doesn't take a great deal to make a woman independent, provided she begins before age disqualifies her. Good housekeepers, good women for sewing, for taking care of children, for helping in the minor complaints of the household and for a thousand and one other things are always needed. A young woman who was first called here and then there to help out in the families of brothers and sisters, came to her senses one day, and refused to go without pay. Of course, they were angry, but she set to work to find steady employment as a housekeeper, and is now comfortable, independent and happy. So, my dear ladies, who see the gray hairs creeping near the temples, and who have not a penny to your names, listen to these words of wisdom. Do not allow false pride, nor a false sense of duty, nor any other thing, except the care of an old father or mother, keep you helpless or in want.

Attractive Summer-Time Fashions

Comfortable Clothes for Warm-Weather Wear

Designs by Miss Gould Drawings by Miss Savage



No. 2021—Baby Caps
Cut for 6 months, 1 and 2 year sizes. Material for mob-cap, one-half yard of all-over embroidery, and one-fourth yard of twenty-four-inch material for strings; for fitted cap, one-half yard of twenty-seven-inch material, and one-half yard of embroidered edging for band. Patterns, including both bonnets, ten cents



This little mob-cap, as it is called, looks very attractive on the baby's head and is extremely easy to make. The pattern for it is included in pattern No. 2021, which also provides for the fitted cap shown on the opposite corner of this page. Both caps will be comfortable and cool for summer if made of very thin materials and simply trimmed with lace or embroidery



No. 2053—Lingerie Picture Hat

Cut in one size only. Quantity of material required, one yard of thirty-six-inch material, with three-eighths yard of contrasting material, forty-eight inches wide, for the facing. This lingerie model will make a most comfortable, attractive hat for the young girl in hot weather. Pattern, 10 cents



No. 2060—Negligée and Breakfast-Cap

Pattern cut for 32, 34, 36, 38, 40 and 42 inch bust measures. Quantity of material for medium size, or 36-inch bust, four yards of twenty-four-inch material, or two and three-eighths yards of thirty-six-inch material. Pattern, ten cents



For a simple, cool, summer negligée, no design could be better than pattern No. 2060, the back of which is shown in the above illustration. It may be developed in any of the seasonable flowered or figured lawns. The dainty little breakfast-cap, which is sure to appeal to every girl, should be made of the same material as the negligée



No. 1857

No. 1867—Semi-Princesse Dress, Empire Effect

Pattern cut for 32, 34, 36, 38 and 40 inch bust measures. Material required for medium size, or 36-inch bust, seven and one-half yards of twenty-four-inch material, or four and three-fourths yards of thirty-six-inch material, with one and five-eighths yards of contrasting material, thirty-six inches wide, for the plaited waist portion and long one-piece sleeves. The price of this dress pattern is ten cents

The patterns may be ordered from the nearest of the three following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1538 California Street, Denver, Colorado. Patterns, ten cents each



No. 2061

No. 2061—Bathing-Suit with Surplice Waist

Cut for 32, 36, 40 and 44 inch bust measures. Material required for 36-inch bust, eight and three-eighths yards of twenty-two-inch material, or six yards of thirty-six-inch material, with one and one-fourth yards of contrasting material, thirty-six inches wide. Price, 10 cents



No. 2065
No. 2066

No. 2065—Double-Breasted Outing-Blouse

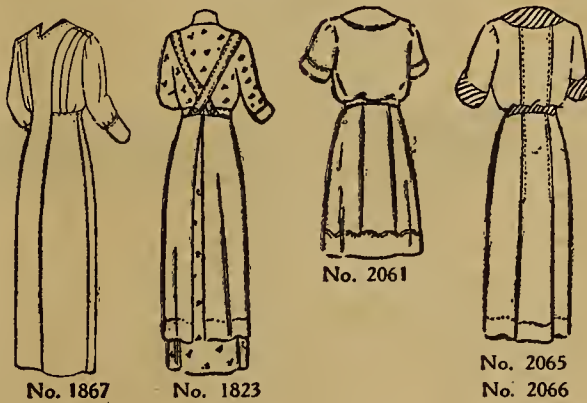
Cut for 32, 34, 36, 38, 40, 42 and 44 inch bust measures. Material for 36-inch bust, two and three-fourths yards of twenty-four-inch material, or one and five-eighths yards of thirty-six-inch material, with five-eighths yard of contrasting material. Pattern, 10 cents



No. 1823

No. 2066—Six-Gored Outing-Skirt

Cut for 22, 24, 26, 28, 30, 32 and 34 inch waist measures. Length of skirt, 37 inches. Material for 26-inch waist, seven yards of twenty-four-inch material, or four and one-fourth yards of thirty-six-inch material. This skirt will prove a practical model, not only for outdoor sports, but for general every-day wear as well. Pattern, ten cents



No. 1867

No. 1823

No. 2061

No. 2065
No. 2066

No. 1823—Housework Apron with Bib

Pattern cut for 22, 26 and 30 inch waist measures. Quantity of material required for medium size, or 26-inch waist, four yards of thirty-six-inch material. This is a comfortable apron for summer wear if developed in one of the thin fabrics. The price of this pattern, ten cents

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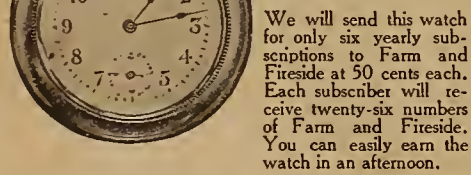
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OUR YOUNG FOLKS' DEPARTMENT

CONDUCTED BY COUSIN SALLY



The War With the Weeds

By Rose Seelye-Miller



Pigweed

ND so," concluded Uncle John, "the dragon was slain, and the prince carried off the spoils of war, and the kingdom was at peace, and they all lived happy ever after." Uncle John oozed out of the door, leaving the children mute with wonder and joy.

"I wish," said young John, who bore his illustrious uncle's name, "I wish there were some dragons to kill; all the good things happened so long ago."

"There are dragons and battles to fight now, just as much as there ever was," declared Aunt Jane.

The children gasped in amazement. "Not for boys like us?" young John demurred, ignoring his two sisters as wholly unworthy in such a case. Of course girls don't fight.

"Oh, of course, there's our faults to fight," put in Bessie timidly.

"Umph!" scoffed young John, "I want something real to fight, something I can slam around."

"I can give you some real enemies to fight, and something that will show you have done something. I'll show all four of you some really truly foes to fight." Aunt Jane put on her buff sunbonnet and went outdoors, the children following closely, wonder and awe in their eyes.

Out across the pleasant lawn went Aunt Jane, and down the path to the garden-patch.

"Bugs!" cried young John in dismay. "Worms!" shuddered Bessie.

"No, indeed, I guess I wouldn't give my city guests foes of that sort to fight," declared Aunt Jane, with a merry laugh.

"See that pigweed, growing almost in that hill of potatoes, that is a greedy dragon, and unless it is rooted out it will take all the food from our friends, the potatoes. It must be slain!" Aunt Jane finished, and her tone almost made Bessie's blood thrill, while it nerved young John for the fight.

John attacked the enemy with vigor, but not with skill, and he rose vanquished from the fight. The tough plant had won the battle.

"Take hold close to the roots, that's where all weeds live, and then pull hard, and you will rout your enemy," Aunt Jane counseled.

Again young John tackled his enemy, and this time with such force and skill that the defeated foe rose high in the air, while young John fell to the ground, so sharp and decisive had been the battle.

"The dragon knocked Johnnie down," cried Elmer with excitement. "I'll find a foe to fight, too. Are those big, pretty things flowers, Aunt Jane?" Elmer asked wistfully, as he picked out the biggest thing he could see in the garden.

"No, indeed, those are Russian thistles, [for this happened in South Dakota] and if left, they will sow a million seeds."

"Here," said Elmer, "I will slay a million enemies," and he pulled at the great weed, but to his surprise the enemy was uprooted much easier than he thought, for, unlike the pigweed, the Russian thistle is nearly all top and not much root.

"Ho, ho!" jeered young John, "your dragon laid you out, too!"

"We each fight a different enemy," said Bessie. "What shall I kill, Aunt Jane?"

"Why, there's a big pigeon-grass root, try that," Aunt Jane counseled, pointing out the big root that needed eradicating.

Bessie bent over and gathered the bunch of pretty grass in her hands. It took quite a pull from Bessie's young arms, but after all it came up easy. "I'll pull all the pigeon-grass," Bessie declared bravely.

"How many enemies would this make if it had gone to seed?" "Not as many as the Russian thistle, but a great many."

"I want to fight, too," said Little Helen wistfully. "So you shall," Aunt Jane comforted. "Here's a little enemy for you to fight." And she bent to pull a small vine with beautiful, heart-shaped leaves.

"That looks like a morning-glory," Bessie said interestedly. "This has much finer leaves than the morning-glory," Aunt Jane explained, "but they are shaped somewhat the same, and the plant grows to be a large vine. Why, last summer, while I was away, this wild buckwheat simply grew and covered my melon-vines all over. And you know how I like melons."

"This will be a big enemy, then," cried Helen, pulling up a tiny vine laughingly.

There was great excitement and noise of battle, but it was a noise of laughter and gay words, instead of guns and battle-smoke.

Aunt Jane pulled some crisp and crinkly lettuce and some crimson radishes and put them in her basket. "These shall be the spoils of war," she said gaily. "We shall have a great feast after the battle!"

When the children had killed many enemies, Aunt Jane

called them to the house and gave to each a lettuce sandwich and three red radishes.

John and Bessie wanted to go back and renew the fight, but Aunt Jane said that every army must organize its forces and give its soldiers a chance to rest. It was finally decided that two decisive battles should be fought daily. One in the early morning, because the enemy sent new recruits each night, and again a short but sharp fight at night, to give the soldiers their good exercise and to make their beds seem wonderfully soft and downy after the war.

And so the children fought many bloodless battles and killed enemies by the thousands (counting the number that might have grown had the weeds gone to seed and the seed sprung up again).

Aunt Jane's garden grew as it had never grown before, and in the early fall, when the children went to their home in the city, they took with them some of the spoils of war: carrots, beets, onions, potatoes with great ivory tubers almost as big as an elephant's tooth, but best of all seemed the big crate of juicy little cantaloups saved from the jaws of the wild buckwheat, that Uncle John insisted upon sending with them.

"We're going to live happy ever after," Little Helen confided to her mother.

"I think," said mother, hugging her brown little girl, "that we shall all live happy for a great long time, with all these rugged children home again, with all their wonderful spoils of war."



"I wish there were some dragons to kill!"

Some New Puzzles

By Ethel Payne

IT SEEMS as if all the cousins like to work out puzzles. Here are two new ones that ought to interest you. The answers will be published in a forthcoming issue. Meanwhile do not misunderstand and think that prizes are to be given for answering these puzzles correctly, and do not think that you have to send the answers to Cousin Sally. She only prints them that you may have the pleasure of working them out and will give the correct answers very shortly. Now do your best, cousins, and see if our clever readers can think out the answers before they are published. The first is an arithmetical one called

THE STRAYING TURKEYS

Mrs. Jones had a flock of turkeys, and one day half the flock strayed from home and just ten of them returned; the next day one third strayed, and only two came home; the next day one half of those left strayed, and but one returned to the roost. Poor Mrs. Jones said, "I have now one dozen turkeys." How many had she at first?

ENIGMATICAL TREES

- 1. What tree is a command for a certain boy to go in debt? 2. What tree is useful at cherry-preserving time? 3. What tree is a parent twice called? 4. What tree do you always keep on hand? 5. What tree does a cat wear? 6. What tree is in the sheep-fold? 7. What tree is a receptacle and a church official? 8. What tree is neat and trim?



Pigeon-grass

Cousin Sally's Letter

DEAR COUSINS: Can't we learn a little lesson from "The War with the Weeds"? Work, especially during these close, warm days, isn't nearly so hard, if only we go at it in the spirit of fun. Play you're having a good time, make a game out of your work, and it won't be half so hard as it was before. I'm quite sure it's just as hard work to chase a golf-ball all over a twenty-acre meadow as it is to dig potatoes. Can't you make a game out of potato-digging? Play that every perfectly smooth one is a gold nugget worth one hundred dollars, and see how rich you are at the end of the row. Try it!

Of course, I believe in play, and lots of it. But when we have work to do, it's far easier to enjoy it than to grumble at it. I've tried both ways, and I know.

Have you tried getting permission to eat some of your meals out of doors? It's lots of fun and does away with work in the kitchen, too. You can use wooden plates and paper napkins and have a picnic every day and wind up with a bonfire

of the plates. Eating out of doors does away with the trouble of setting a table. The grass and clean white paper make a table and covering fit for kings. Try it! Anything to cut down work in hot weather is a good thing, isn't it? If you've managed to help your parents in this way during the summer, write and tell me how you did it. You know I always want interesting letters from my cousins. Affectionately yours, COUSIN SALLY.



My "Queer" House

By Lulu T. Evans

TWO years ago our home was burned. To build a new home means a good deal to poor folks. Our new house, of course, had to be cheap; but we wanted the best we could have, and my good husband, knowing that I had always desired to plan my own home, said I might plan the new house. After deciding on the size and shape of the roof and foundation, the rest was left to me.

Every woman who sees it speaks words of praise as to its arrangement. She sees at a glance what it means to a housewife, but men as a rule do not like it. Almost every man who sees it, sooner or later, lets out in some way his opinion that the kitchen and dining-room should be in the rear. I can see that my good husband feels a bit uneasy because our house is "queer." I know that men like the approval of men.

The carpenter—one a kinsman—thought it queer and made some effort to re-deem the looks of it, even after the work was begun. They tried to show me that a straight gallery (porch) across the front with smooth, even walls would look nicer and give me more room in the kitchen, and they said the front door should open straight on the gallery. I had my reasons for all the queer things I had done, and, to me, the little house looks like "welcome home, come right in now and be comfortable"—and, besides, I think it is rather artistic, too. We have lived in it a year, and I find it so convenient, though it is not yet finished.

These are some of my reasons: The hall extends across the gallery because it cuts off the north wind. We have lots of sunny winter days that are pleasant enough out of doors, except for a little raw breath of a breeze from the north, and the ground is damp. I want a nice place for the little ones to play out of doors. The front door opens toward the south and saves letting in a sweeping wind from the north or east.

The hall is wide and makes a nice sitting-room in summer. There is only a large square opening between dining-room and hall, where I have hung portières, and hope to place a screen in the

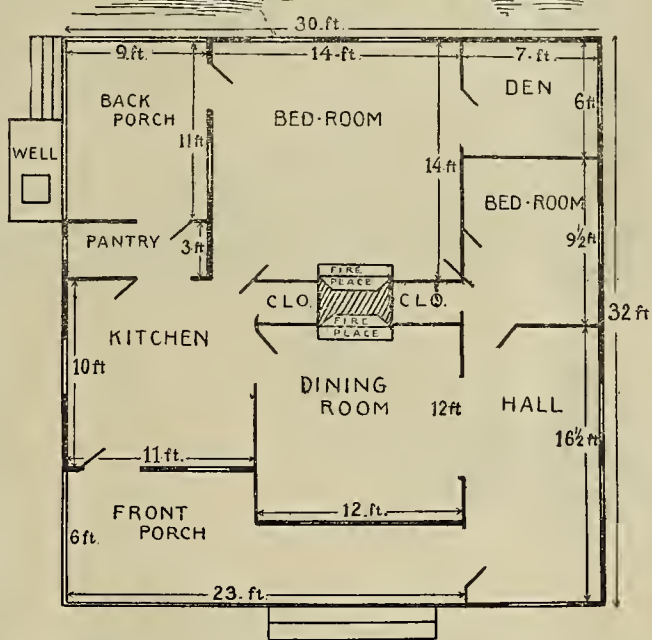
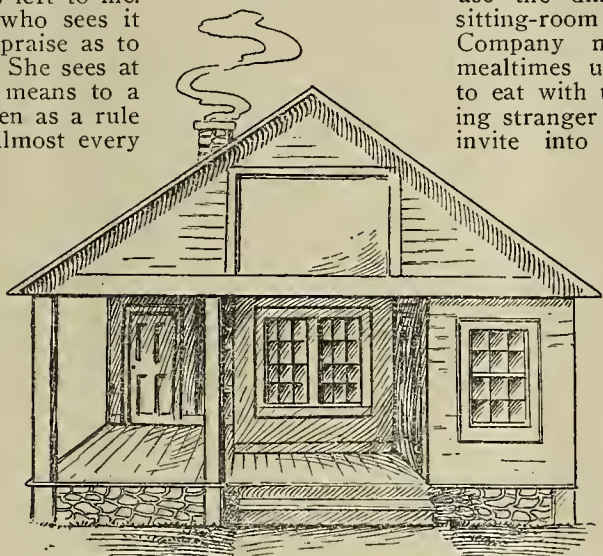
doorway some day. The fireplace in the dining-room would warm both dining-room and hall.

My dining-room is in front because some room had to be at the front, and I would rather have it the dining-room than the bedroom. We cannot afford a living-room, but I intend to have a fireplace in the dining-room, and then we'll use the dining-room for a sitting-room between meals. Company never comes at mealtimes unless they come to eat with us, and the passing stranger whom we would invite into the house, we would also invite to the table, even if the dining-room were at the back of the house.

My kitchen opens on the front gallery, but there's a little break that puts it modestly back a few feet and gives the suggestion of privacy. The kitchen also opens on to the back gallery and into the family bedroom. The kitchen, connecting with the bedroom at the corners, is different from opening "broadside" as my husband says.

From the kitchen I can keep up with things on all sides. I am ready to answer a knock both at the front and back doors. I do

not feel as though I were in a servant's quarters. I can sit on the front gallery in the sunshine at my kitchen door and count the rosebuds, that may bloom for Christmas if Jack Frost will let them alone, while I stir my Christmas cakes and have the oven heating. I wanted that little backward break because I wanted the extra space on the gallery. I also wanted the kitchen to open on the front gallery because my husband sometimes goes in and out the front way in his plow shoes, and they scratch up a nice floor. He does not like to restrict himself to the back way, and a man should be comfortable and easy at home. In this way he comes into the kitchen through the front door. Some women lend dignity to the back kitchen and all workaday surroundings, but I need a kitchen opening into a flower-garden. Now you have my house plan and my reasons for it. Of course, I'm not an architect, only a housekeeper; but I'm sure the women readers of FARM AND FIRESIDE, if not the men, will understand.



Opinions of a Mere Man

By Clifford E. Davis

WE ARE told that "They also serve who only stand and wait." Woman's work has been celebrated in song and story, together with the benighted man who tried to do her work and failed ignominiously.

No machine will run well if any part of it is not doing well, and no farm can run well if the culinary department is handicapped in any way. I have known owners of big farms and fine houses to have to stop the plow to cut wood, when a full supply might have been gotten during the spring and winter. Where there are six or more to cook for, the cook must have an assistant, and it pays the farmer to hire a good one all the year around. It does not wear out his wife, whom he is supposed to love better than a new binder; and on wash-days, churning-days, or harvest or thrashing days, there is none of the usual breathless, killing rush. Every rightly regulated farm should have every utensil that a kitchen needs. They are cheap now, from a fish-scaler to a double boiler. A jelly-press, meat-grinder and other such "tools" are necessary. Some kitchens are little, cramped coops about ten by ten, some less, whereas the farm-

house kitchen should be at least fifteen by twenty, with one end partitioned off as a pantry.

Then buy your flour by the barrel, and stock up on a full line of groceries once each month. It will be cheaper in the long run. If the farmer can start to work on May 1st knowing that the pile of cut wood will last all summer; that there is coal to help out, that there are groceries for months to come and that his wife has plenty of meat and vegetables, then farming should go on smoothly as a dream, with meals on time, an immense lot of work accomplished in season, with no delays, and a hired girl to assist in the commissary department. We are told that "all things work together for good," and if the farmer hasn't the means to provide all these labor-saving systems, he should so farm, build and buy as to have them in years ahead. The wise man looks ahead, the fool looks back, and the shiftless man doesn't look at all.

It would pay to take a day or two off just to plan and execute these reforms that would mean easier times and less hurry and worry in the whole household.



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THE HOUSEWIFE, 30 Irving Place, NEW YORK

Uncle Johnny's Back-to-the-Farm Movement

[CONTINUED FROM PAGE 14]

despondency; hope was gone—Mrs. Cramer looking fearfully through her glasses into the future, where a few months would surely bring them to bankruptcy and want in their old age; Uncle Johnny leaning on the counter staring out at the door dully, every vestige of cheerfulness gone from his face.

The more the young man thought of it, the more pitiful it seemed and the angrier he got at the rascal who had robbed the old people of their lifetimes' frugal earnings.

"I'll find him," said Thomas, "if he can be found."

But men like Bayler are not easily found. They do not leave any forwarding address. Thomas kept up a search by correspondence for three months and even made two or three trips of several hundred miles, but failed to get on the trail of the rascally trader.

One Sunday afternoon Thomas was out walking on the valley road west of Buckeye Bridge. He heard the clack of a buggy, and looked up to see the two old people driving slowly down the road.

Already their faces were pinched with coming want; already hopelessness hovered like a cloud over them. They had been to take a heart-breaking look at the neat farm, the cozy little house and the well-filled barn—their old home.

They had not seen him, and Thomas stepped in the shelter of the underbrush and waited until they were past. He felt he couldn't talk to them this afternoon.

The next day he started out on another search for Bayler. What he would do if he found him or what end it would serve he did not know, but he seemed compelled to find him.

At Sarvis Point, while waiting at the hotel for a train, he met Harry Anderson, an old-time schoolmate. Harry had been traveling for an implement company in the Southwest.

Tom Henry told him of the deal at Beckler and of his search for Bayler.

Henry slapped his knee. "Why, that's just the fellow. Night before last I got to talking to a fellow in the hotel at Dallas, and he was bragging about the easy money he made, and told me about that very deal with those old people. He thought it was the greatest joke in the world, and said he managed it so the law could not touch him."

The young real-estate man went direct to Dallas and found Bayler was still there, under a different name.

He asked the clerk to send him up to Black's room when he came in.

Bayler was surprised to see Thomas, but he assumed an easy, jocular air.

"Well, what can I do for the son of the Ozarks?" he asked, offering his hand.

Thomas ignored the hand. "Have a chair," he said. "I came to get you to give old man Cramer and his wife back their farm."

"What do you take me for? A new-born babe?" he laughed sarcastically.

"A rascal," said Thomas. "But even rascals will sometimes do the right thing."

And Tom Henry described graphically and touchingly the suffering of the old people.

"That's their lookout," Bayler twitched his moustache. "Every feller for himself you know. If I looked out for every old codger that got skinned in a trade, where would I be?"

"I think," said Tom, "you better decide to do as I suggest." There was a hint of force in the young man's tone.

"I think I won't," said Bayler bluffly.

"It will cost you a good deal more than if you did," said Tom.

"How?" he smiled banteringly.

"Well, I understand you have a business here that is profitable—a fairly honest business. A lawsuit and an exposure of your past methods will ruin that."

"But there can't be any lawsuit," Bayler smiled triumphantly. "You see the land is in the hands of an innocent purchaser. You can't sue to get that back."

"You can't have me arrested for misrepresentation, for I did not represent my stock at all. I told you and the old codger to look at it. You can't sue for obtaining money under false pretense, for I made no pretenses. And you can't prove that I even knew the stock was watered."

"Yes," nodded Thomas, "I can prove that. And there is one important item you overlooked. Now I rather you would do the square thing and give me a draft to buy back the farm for the old people than to see you in jail."

"What is that important thing?" Bayler was still jaunty, but a little uneasy. This peak-headed young fellow seemed to know more than he looked.

"The United States government," replied Tom coolly.

"What have they got to do with it?" asked Bayler.

"Pure-food law," replied Tom briefly. "You sold cans of water labeled as fruit and vegetables. I have the United States marshal waiting down-stairs."

Three days later Thomas Henderson Black entered the grocery-store at Beckler.

"How is everything now?"

Uncle Johnny sighed, shook his head and rubbed the back of his hand across his forehead. It was plain the end was near.

"Tommy," and all anger and accusation was gone from his voice, only listless wistfulness, "I was just sittin' here thinkin' how good a hickory fire would feel in the fireplace these cool evenin's. I wish we was back on the old farm." His wife turned her face from them and put up the corner of her apron to her eyes.

The young man took a paper from his pocket and very carelessly pitched it upon the counter in front of Uncle Johnny.

The old man took it up uneasily. No doubt it was some form of foreclosure. As he began to read it, his hand shook, his lips opened. With eyes bulging, he read on.

"Oh, mother—mother," he gasped. "Come here quick; look at this paper!"

The old lady, still apathetic but apprehensive, came up from the back of the store. "Mother," he gulped, "we got the farm back."

Thomas had turned away, and stood in the door with his back to them.

After a few tense moments, Uncle Johnny spoke up chipper and gaily as of old.

"We'll move back to-morrow. You see now, mother, it's just as I told you; it pays when you go to trade to have dealin's with an honest feller like Tom Henry."

Household Department

By the Household Editor

To Clean White Enamel Woodwork—Use two tablespoonfuls of ammonia to one quart of sweet milk. This will not turn it yellow, as some cheap soaps do. Z. M. R., Ohio.

When ironing on the oil-stove, place a saucepan over your irons (one with a handle is best). This will save fuel and keep the irons at a more even heat. Mrs. S. J., Iowa.

Wash your lamp-globes in warm soapsuds, and then pour hot water over them. Polish with a soft cloth. Use old lace curtains to polish globes, when the curtains are past using. Mrs. R. R., Indiana.

A Broken Pyrography Bulb—The bulb of my pyrography outfit sprung a leak when I was in the midst of some Christmas preparations. As I had no time to spare, I was dreadfully worried about this. But I took off the offending bulb and replaced it with one from an old atomizer. The experiment was a success, and I joyfully finished my work. E. E., Oregon.

Cellar-Door Idea—A neighbor drove a stake by the cellar-door to rest it against while she went down into the cellar. It saves stooping so much. S. L. H., Illinois.

Hard Tack—Three eggs, one cupful of shelled walnuts, one cupful of flour, one cupful of sugar, one cupful of dates and one teaspoonful of baking-powder. Mix the eggs and sugar. Cut the dates and walnuts in halves, then add them to the mixture. Stir in the flour and the baking-powder. Pour into a greased pan, and bake for half an hour. Serve with whipped cream. C. E. O., Wisconsin.

To Keep Pickled Pork in Summer—Scald a jar with boiling-hot water, cover the bottom with salt, and pack the meat lightly, using plenty of salt with each layer and on top. Make fresh brine by using all the salt that will dissolve, pour it on boiling hot, put a weight on, and keep in cool place. Miss M. E. B., Ohio.

Keeping Flowers Fresh—When one has carried a bouquet of flowers in the hand, upon reaching home they are generally found to be wilted. To freshen them, dip them for an instant in hot water, and have ready a bowl or a vase containing cold water, to which has been added a bit of charcoal the size of a dime. If the flowers are violets, add half a teaspoonful of sugar to the hot water, in which they are first dipped. In winter a flower or flowers can be kept fresh a very long time by cutting off a small piece of the stem each morning and placing in hot water, to which has been added a pinch of salt. The water should not be scalding hot when the flowers are dipped. Roses can be kept on ice for days. Mrs. E. O. S., Ohio.

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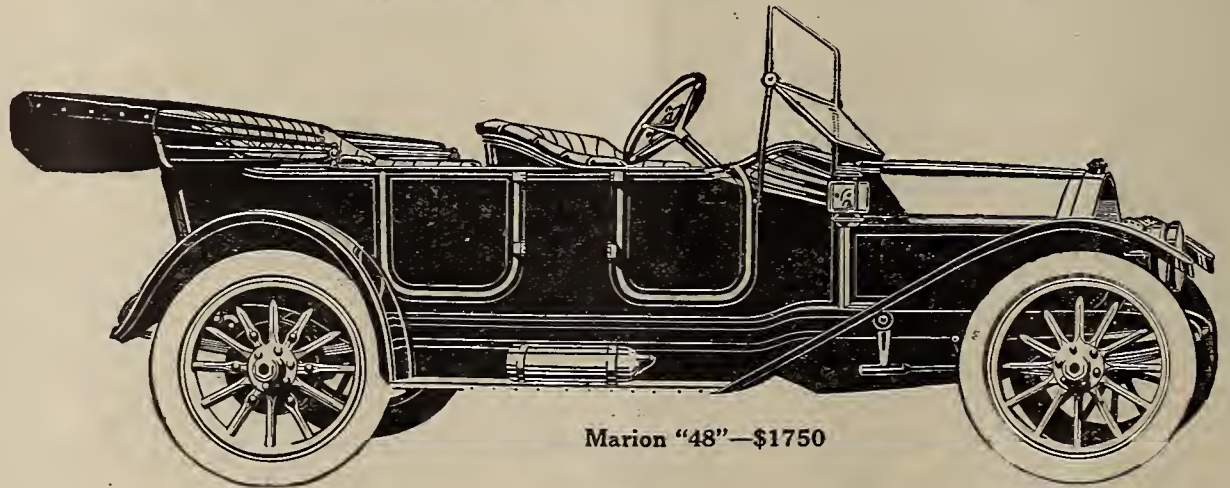
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ESTABLISHED 1877

SATURDAY, AUGUST 3, 1912



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With the Editor

TWO or three years ago, for one whole warm summer day, I was a passenger on a steamer navigating the blue waters of Last Mountain Lake. Probably most of my readers never heard of this sixty-mile-long body of water. It is in the heart of the Province of Saskatchewan, in the midst of the interminable prairie, and hemmed in all around by great fields of wheat, freshly settled farms and a country which strikingly reminded me of Iowa as it was when I was a boy.

And here I found the nesting-place of those great white pelicans which mysteriously visit the Middle West in spring and fall. They floated about unscared on the calm waters of Last Mountain Lake like beautiful ships, or soared about, occasionally darting for a fish.

"Why are they so tame?" I asked. "One would think that the gunners would drive all that calmness and peace out of the lives of pelicans here, as they do elsewhere."

"At the north end of the lake," said my Canadian companion, "there are thousands of acres of their nesting-grounds—rushes and willows and marsh. The Canadian government very strictly protects them. So they are increasing in numbers, notwithstanding the fact that the country is settling up so rapidly."

When next you see a flock of pelicans, ducks or geese floating through the skies in spring or fall, remember that you owe the sight to the Canadian government and the protected nesting-grounds on Last Mountain Lake and elsewhere. And remember, too, that as to ducks, geese and other water-fowl as well as pelicans, if Canada protects them in their summer homes in the north, we ought to be as wise and as considerate in taking care of them when winter drives them into our domains. Taking care of the birds is perhaps a test of civilization. And we ought not to be willing to have any nation, even our cousins of Canada who are so intent on protecting these flocks, surpass us in civilization.

Not that our government is behind in this beautiful work of protecting the birds. Off the Gulf Coast are sand islands which are protected nesting-grounds of the gray pelican of the south. When the contractors went to the Southwest Pass—which is the main outlet of the Mississippi—to build the jetties which the government is constructing for the purpose of making a deep-water channel to New Orleans, a photographer in their camp visited these islands in that vicinity and took many pictures of the young pelicans. They were so numerous that it was easy to get the pictures. The only trouble was to avoid trampling on the pelicans. But the old ones were shy. So the photographer set his camera with a string to manipulate the shutter, and when the old pelicans pulled the string by waddling against it, the exposure was made. It does seem to me that there is much more real pleasure to be had in such hunting than in boring the birds through with bullets and shot and letting their wounded bodies fall flapping into the water to grow still in agony!

On one of these islands this man found no living pelicans—but the ground was literally whitened with the bones of dead ones. I was shown the pictures, which seem to bear out the theory of the photographer, that it was a pelicans' cemetery to which they repaired when they felt their inevitable deaths stealing upon them. I can't vouch for the accuracy of this theory; but if our wild birds and animals have not some secretiveness about the places of their burial (like Moses, of whom it is said "No man knoweth his grave to this day"), how is it that we so seldom see the dead body of any of them which have died natural deaths? Perhaps because so few die natural deaths. Perhaps because in the tense struggle for existence, when one of them gets slowed down by the paralysis of approaching dissolution, some inveterate foe disposes of him in the old, old way. But if the pelicans do seek to retire from the sight of their fellows to die, they could do it by no method save that of setting off an island for the dying and dead, for on these sand islands there are no holes into which to crawl.

Our in the Pacific, there is a group of islands, a part of the Hawaiian group, which are set apart for nesting-grounds by the United States government. Gulls, terns, albatross, man-o'-war-birds and many others nest here by millions. Recently we have had to rout out and punish some Japanese bird-catchers who have been poaching on our preserves. All over the Pacific are scattered islets on which seabirds have nested for centuries. And on most of them are found these Japanese bird-catchers, who hunt them for their skins. But we mustn't blame the Japanese for this—they are hunting the birds' skins for milliners' supplies, not for Japan, but for the countries of the white race.

On one of these islands of ours, Laysan, the birds are in process of extermination by rabbits! Isn't that the most surprising thing you ever read? Yet it is true. But don't imagine the Laysan rabbits climbing trees like cats, for birds, or catching them like hawks, or developing any other quite unrabbitlike ferocity. They are accomplishing the result by girdling and destroying the vegetation of the island. Some person whom the fool-killer overlooked, let loose some rabbits on Laysan a few years ago, and they have so increased as to have been driven hungrily to gnawing every tree and shrub within reach. This will end the insect life on which some of the birds depend and will deprive others of shade.

This reminds us of the disastrous experience of Jamaica with that blessing of Hindustan, the mongoos. This is a weasel-like animal which specializes in snake-killing. But in Jamaica there was nothing to keep the mongoos in check, and it went into bird-killing after disposing of the snakes. It practically wiped out bird life in Jamaica. The birds being gone, insect life of the most offensive and destructive sorts has so multiplied that farming and fruit-growing has become difficult, and with no bird helpers the agriculturists of Jamaica are having hard times all the way around.

THE boy with the shotgun is the American mongoos, and the Japanese bird-catcher is not as bad a citizen as the American bird-hunter. I have seen robin redbreasts hunted for potpies in Alabama! Bobolinks, grown brown and songless and fat, are called reedbirds and shot by millions along the South Atlantic Coast. And American girls show their lack of that sweetness of spirit which all women would like to be credited with, but which so many lack, by wearing on their hats, for the sake of self-adornment, the dried and preserved feathers, beaks, breasts and wings of our own birds!

Talk of the depravity of the Japanese bird-catchers! Why, in comparison—but I think I'll let you make the comparison.

Hubert Quick

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FARM AND FIRESIDE



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Springfield, Ohio, August 3, 1912

PUBLISHED
BI-WEEKLY

The Real Issues

AFTER all the heat, sweat and noise of the two great conventions, it is worth while to take stock of what the real issues are for us. The tariff, the trusts and the other so-called "big" issues are just as important to the farmer as to anyone; but we must not forget that, unfortunately, farmers have been denied certain things that are vastly important to them for so long that they must be excused if for this campaign they adopt the course of letting the others do the cheering while they ask questions.

Parcels post is of more importance to farmers than tariff, trusts or any other "big" issue. For parcels post means actual, measurable benefits. It means as good parcels service for the farms as the express companies now give the cities, and perhaps better. Why should not farmers in this campaign put on record every candidate for Congress in either house on parcels post? Why should they not look up the records of representatives and senators and see how they have behaved on parcels post? Why should they not punish those who have been against parcels post, either openly or secretly, by voting against them, tariff or no tariff, trust or no trust? Why not?

The Page Vocational Education Bill appears to us to be a bill of even more importance to farmers than parcels post. For it seems to us to be the beginning of a new and better time for the children. Why not ask candidates some questions as to this great measure?

The platforms favor parcels post, and at least one of them squints in favorable generalities towards the Page Bill. But it will be a good thing all around if the farmers in this campaign will let the candidates know that platform generalities are not satisfactory, and that definite declarations are required of those who ask for the farmers' votes.

Street-Sweepings as Manure

IN THE city of Montevideo street-sweepings are found to contain .03 per cent. of nitrogen, .035 per cent. of phosphoric acid and .6 per cent. of potash. They probably are of about the same value elsewhere. This is a richness in nitrogen of about seventy-five per cent. of barnyard manure, while it is about equal to the commoner fertilizer in potash, and about half as rich in phosphorus. When the sweepings are not too coarse, and are freed from stones and other objectionable matter, they are well worth hauling reasonable distances and spreading on the land. Where they can be got for the hauling, they will pay for rather long hauls. In many cities they can be loaded on railway cars and boats for shipment, and with reasonable freights can be made the means of rejuvenating thousands of acres of run-down lands. And railroads should haul such freight at cost or less.

Some Interesting Corn Facts

CORN is grown almost everywhere in the United States, and therefore the following facts gleaned from Georgia experiments will be of value to everyone. In fertilizers it was found that cotton-seed meal is a poor carrier of nitrogen. The yields for three years were 28.94 bushels of shelled corn per acre by the use of cotton-seed meal, while nitrate of soda, with the same amount of potash and phosphorus, and carrying the same quantity of nitrogen, gave 31.57 bushels, and a chemically equal formula of sulphate of ammonia produced 31.92 bushels. The unfertilized plats averaged 25.38 bushels. Tankage also gave better results than cotton-seed meal.

Seed-corn from the butts of the ears yielded on the average 25.7 bushels, the tips 25.97 bushels. The middles gave seed making crops averaging about three bushels per acre less than the butts and tips!

With hills three and a half feet apart each way, two stalks in a hill yielded about thirteen bushels to the acre more than one stalk. The celebrated Williamson method of corn-growing showed rather poorer yields than the ordinary method.

Cactus-plants can live from two to three years on the water stored within them. During this time they lose from thirty to fifty per cent. of their moisture. The great advantage of such plants in dry regions is that they can wait for rain without dying. The sorghums can do the same thing in a limited way—hence their utility as drought-resistant field crops in dry-farming.

When the Mediterranean Fly Reaches America



A picture of what may happen if Congress continues blind to the need of a national quarantine law against pests of the field and orchard

New Sorts of Clubs

MANY farmers and workers for better farming have seen the need of multiplying the activities of the young people who have been doing so much work in corn-growing and corn-judging. Boys' and girls' corn clubs are fine things, but corn is not all. A young woman in North Carolina did a fine thing when she began the organization of tomato clubs. Poultry contests seem possible, both in egg production and feeding. The department at Washington, seeing the need of more kinds of clubs in connection with its farm demonstration work in the South, purposes to extend the club work to hog-raising contests and pig clubs. The thing to do after growing a crop of corn is to market it—either as corn or as meat. The girls of the southern farms, too, are to be encouraged to enter poultry competitions. These extensions of the contest idea are well worth the thought of farmers and extension workers everywhere. And, North or South, the Page County, Iowa, boys' contest in good roads should not be neglected, but should be extended until every boy in your vicinity is mustered into this good and progressive work.

Domestication of Wild Animals

THE late Bill Nye once described a skunk-farm which he claimed to have seen. "The owner of this farm," said he, "makes good money, but goes very little into society." Skunk-farms, frog-farms and fish-farms—in fact, all freak farms—are as a rule in neighborhoods densely built up with castles in Spain. The mythical kingdom of Backtothelandia is full of wild-animal farms, which pay immense profits—but no one but the Sunday supplement editors and contributors, and the people who write for the magazines devoted to the interests of the yearning suburbanite, know the road leading to Backtothelandia. Yet where there is much smoke there is some fire—though smoke and fire are usually found in inverse proportions. The plain farmers of Prince Edward Island seem actually to be making money by rearing the silver fox for its fur, as are the ostrich farmers of California, Arizona and South Africa by growing ostriches for their feathers. At the present time some seven hundred silver foxes are kept on farms on that island. Their skins would be worth half a million dollars if they were killed. The value of the foxes as breeding stock, however, is given as \$1,500,000. A good skin is worth in the London market about \$2,500. The yearly profits from a pair of foxes is about \$5,000. While the expense of keeping the animals is not large, getting into the business is so expensive, and the trick of rearing them is so difficult to learn that the industry is not commended to the man of small capital. One mother fox reared eighteen young in three years, and a price of \$8,000 was refused for her. This interesting industry was developed by ordinary farmers, with no governmental aid. The fox industry may grow beyond the silver-grays. One breeder says that, with ordinary red-fox skins worth \$5 each, there is more money in them than in sheep with wool at twenty cents a pound and lambs at \$5 each.

An observer in India has found a small fly of the midge class with its proboscis inserted in the abdomen of a mosquito, engaged in sucking the mosquito's blood. There is comfort, if not benefit, in this bit of news. Why can't we import this midge? The mosquitoes would know how it is themselves then, perhaps.

The Diminishing Mortgage

THE statement that the thousands of gold miners, crushers, reducers, smelters and prospectors of the world are helping to cut down your mortgage may be startling, but there is every reason to believe that there is something in it. Gold is now our single standard of money value, and the value that is understood as represented in every dollar in the mortgage on the farm, whether it is expressed in it or not. In most mortgages it is expressed in the words "payable in gold coin of the United States of the present weight, value and fineness." The farm pays it off in crops turned into money. When the gold crop is for year after year more plentiful than other productions, it takes less in produce to get a dollar's worth of gold.

If a gold region could be found where the precious metal could be mined with a steam shovel as iron is mined in Minnesota, our mortgages could be paid off in gold coins as easy to get as iron washers now are. The present growing output of gold is of practical importance to us all. While it keeps up, it is safe to borrow money for good farming projects. For it is safe to count on as good prices, at least, when the debt falls due five years hence, as prevail now, and probably better. Farmers have profited by high prices to the extent that they have been legitimately in debt. With gold pouring out from the stamp-mills and prices stiffening, it is well to be cautiously bold in taking on long-time obligations for things which promise good returns.

An Iowa Success in Hog-Raising

By John Cownie

IT IS now over fifty years since I embarked in the business of pork production. I had earned two dollars and fifty cents by helping neighbors at thrashing, and invested this amount in two pigs. My first sale consisted of five hogs averaging 198 pounds each, dressed. All hogs were sold dressed at that time.

The price was \$2 per hundredweight for hogs weighing over two hundred pounds and \$1.75 for those weighing less than two hundred pounds. Mine were the \$1.75 kind. They were the real bacon hogs, so much prized now, but not appreciated at that time. The buyer, in looking over the lot, picked up the smallest one by the tail—they all had large tails and heads—and asked me if it was not a codfish? I was not discouraged, but kept right on until I stood in Chicago Stock-Yards and saw one shipment of hogs, all but one a stag, my own raising, cross the scales at the highest price paid that day, and I had checks for over \$6,000 in my pocket.

In feeding cattle, there was often very little profit, and at times heavy losses. But I always depended upon the hogs to help me out. Financially, the hog has been my best friend, and for that reason I like hogs.

With the foregoing by way of introduction, I will now refer briefly to the methods which brought success to me in the work. And even the mistakes that I made, resulting in serious losses, may prove of value to those who, like myself, desire to profit from the experiences that others have had.

In the first place, a good hog-house is absolutely necessary. In my first efforts, I sustained severe losses from lack of proper accommodations, especially at farrowing-time. The shoats would pile up and smother in severe cold weather.

I have seen and read of a great many different plans of hog-houses, but my preference is a building twenty feet wide, eight feet high on the sides, any desired length, with a roof one third pitch, no floor above, and with a lower window in each gable to insure good ventilation and at the same time to keep out rain. The building should stand north and south, thus securing sunlight in the forenoon on the east, and in the afternoon on the west. There should be a door in each end, and if cut in two crosswise, the upper half can be left open for ventilation when required.

The Inside Plan

Have an aisle, or alley, in the center, four feet wide, extending the full length of the building, with pens on each side, six feet by eight feet. A gate to each pen is ideal for farrowing, and also when fattening the hogs, as there will not be any piling up in cold weather, the pen preventing crowding.

Next to the alley, six-inch boards can be used, properly spaced and somewhat near the bottom, to prevent small pigs from creeping out, and wider apart toward the top, which should be about three feet above the floor.

Partitions between pens should be nailed close, to prevent quarreling among neighbors. If space is left between boards, the openings make a ladder for the hogs, in which they place their front feet and scold each other, either through the opening or over the top of the partition. This precaution is particularly necessary with brood-sows, especially when quiet and rest is to be desired.

The hog-house should be set on pillars of stone, brick or concrete, and the floor should be made of boards placed about two feet above ground, to insure good ventilation beneath. This keeps the floor dry, a necessary requisite for the good health of the herd. A concrete floor placed on the ground is always damp, which is not conducive to comfort. With good bedding on the board floor, there is no danger from cold.

To insure a clean hog-house, regular habits must be taught the shoats. Get them out early in the morning, so that all excrement may be deposited outside the building. A good pasture-field is also indispensable for success in swine-raising. It should be of good size, say an acre for each five hogs, and well stocked, preferably with red clover. Two or more fields should be fenced hog-tight to allow a rotation in crops. An excellent corn crop is always insured from a field which has been used for a hog-pasture two or three years. It should never be used longer. Plowing and thorough cultivation, with exposure to the sun's rays, is necessary to purify the soil.

Exercise Care in Selecting Brood-Sows

All breeds of hogs, now common, are good. It matters little what breed is selected, this being a matter for individual preference. But care should be taken in the selection of brood-sows.

Too often the sow that resembles a rectangular box with four pegs for legs is selected as an ideal hog, and while this may be true, if the purpose is slaughter, to produce young animals and give milk, a rather tall, lengthy and deep-ribbed animal is to be preferred.

The boar should be depended upon to give the square form and straight lines to the offspring, and no boar should be used unless pure bred and of individual merit. Sows should not be bred under nine months old; a year is still better.

The boar should be older and somewhat larger than the sow and should have plenty of exercise at all times and an abundance of nutritious food, especially during the breeding season.

Even with a small herd it is advisable to have more than one boar, as accidents are liable to happen, and a fine animal may prove to be impotent, thus causing serious loss.

It is also advisable to have the pigs arrive as nearly as possible at the same time, and for this reason the breeding season should be as short as possible.

Breeding sows should be kept separate from stock hogs and the most careful attention given to their food. They should have abundant exercise and dry, comfortable quarters in which to sleep.

A Costly but Valuable Lesson

There is often trouble at farrowing-time, the sows being unable to bring forth their young, and numerous devices are on the market for removing the pigs from the suffering mother, but prevention is in this, as in many other ills, preferable to cure.

One spring I lost thirteen valuable young sows at farrowing-time. I did some thinking then, I tell you. Finer pigs I had never seen than those I removed from the suffering sows; all large, fat and sleek. The thought occurred to me that perhaps these pigs were too large and too fat for the mother to give them birth.

The sows had been fed largely on corn, the best fat-producer we have. But there is no need of fat in the new-born pig. What is desired is a spare frame, with bone and muscle predominating.

After that experience, corn was fed sparingly to sows after breeding. Oats, shorts, bran, middlings, with roots when they could be procured and some clover hay occasionally was the invariable ration. A very small amount of corn was supplied, with the result that I never again used an instrument at farrowing-time, or lost a sow at that critical period.

The hog-house I have described is ideal for sows at farrowing-time. The building should be clean and the floor covered to a depth of three or four inches with dry, bright straw. The gates of the pen being open and the sow feeling the approach of maternity, she selects her pen and proceeds to gather straw in her mouth and make for herself a comfortable bed. Now, instead of chasing and running after the prospective mother to get her in a pen, pass in quietly, and when the sow is making her bed, gently close the gate. Go into the pen, speak kindly to the sow, scratch her back and sides and get on good terms with her. Let her know that you are a true friend.

This matter of making friends with your brood-sows before time of farrowing is of utmost importance. If the litter is the sow's first one, or the sows have been purchased and are strange to the place, they should be made to feel perfectly at home and acquainted with the attendant who shall have charge of them at farrowing-time, at least a week before the sows farrow. The sow that feels acquainted and friendly with her attendant will allow fresh bedding to be supplied and the cleaning of the pen or other necessary attention without becoming excited.

If you have been kind at all times and on good terms with your hogs, this will be an easy matter. And unless you have love and a kindly disposition and affection toward domestic animals, you should not engage in the swine business.

At farrowing-time make it a rule to visit the hog-house the last thing before retiring for the night and the first thing in the morning. And do not hesitate to get up in the night to see that all is well, for often the life of a valuable pig may be saved. A fender on three sides of the pen will prevent the mother overlaying her pigs, which often happens with old and heavy sows.

After the sow has farrowed, remove the wet bedding, giving a limited supply of dry, clean straw or other good material. There is danger in too much bedding, and care must be taken to prevent smothering the young pigs.

A drink for the sow is imperative after her labor, but it should be warm. Under no circumstances should she be given cold water at this time. Solid food should not be given the sow for at least twenty-four hours after farrowing. A thin warm swill, consisting of a small quantity of ground oats, bran, shorts or other mill-feed may be added to the water.

Strict Attention to Feeding Brood-Sows

Care must be taken not to overfeed the sow at this time and thus cause fever in the pigs by too great a flow of milk, which the young are unable to assimilate.

At one time I had over two hundred pigs, one of the finest lots I ever saw, there being only about two weeks difference in age between the oldest and youngest. Determined to outdo all my former efforts, I procured a large quantity of oil-meal, shorts, ground corn and oats, and how I did feed those sows. At the end of three weeks I had just one pig left. After this experience, I lay awake many a night, thinking.

I had learned another lesson and paid dearly for the experience, but knowledge secured without price is not appreciated as well as when it is costly. By overfeeding the sows I had caused an abnormal flow of milk far beyond the capacity of the young pigs to assimilate, high fever resulted, and death quickly followed.

In the years that followed the sows were fed sparingly for some time, and corn-meal and oil-meal, with other heavy food, were not a part of the ration. As the pigs grow older and require more nourishment, the food for

the sow is gradually increased, but it is a good sign to see the mother gradually losing flesh during the time she is nursing her young.

A good deal, of course, depends upon the size of the litter, as a sow with eight or ten pigs to feed requires a larger amount of food than if she had only three or four pigs to nourish.

But while giving a sufficient amount of feed, care should be taken not to overfeed. When the pigs are a month old and when the litter is a good-sized one, there is then no danger of overfeeding the sow.

When the pigs are a day or two old, the mother should be gently driven from the pen and forced to go to the pasture. I use the word driven, as at first the mother will positively refuse to leave the pigs. But, with a little urging, the sow can be induced to go. By feeding only outside it will require but a day or two until she will be eager to get out as soon as the gate is opened.

I prefer feeding on the floor outside, thus keeping the pen clean and dry, using it only for a bedroom.

The pigs should be kept in the pen until able to run around. The sow will go out forenoons and afternoons and return to the pen after being in the pasture an hour or two, but the pigs should not be allowed in the pasture when the grass is wet.

See That the Pigs Have Plenty of Exercise

After the pigs begin to get strong and are able to run and play, it is highly important that they have room for sufficient exercise. When the weather is cold or stormy, little pigs are apt to keep too closely in their nests and thus fail to get the exercise needed to develop strong heart-action. If the sow is a heavy milker and the pigs are taking insufficient exercise, they will become too fat and sluggish, and as a result "thumps" is likely to make inroads in these inactive litters to such an extent as to cause heavy losses. Little pigs after becoming a week or ten days old should be encouraged to take plenty of exercise every day out of doors or in protected runways or yards where they can get fresh air and sunlight in abundance.

Individual hog-houses scattered over the pasture serve a good purpose at this period, or a small enclosure for each sow and litter is always very desirable.

On the east side of the hog-house there should be a feeding-floor, and under no circumstances should hogs ever be fed on the ground and among filth. Cleanliness is imperative, and the feeding-floor, whether of concrete or plank, should be cleaned after each meal.

There should be a tight fence around it to confine the hogs while eating and at the same time to keep them off until the food for the meal is properly spread.

Troughs, V-shaped, a six and an eight inch plank being used, are convenient for feeding pigs and can be readily placed on the feeding-floor. Shelled corn soaked in water for not to exceed twelve hours is relished by pigs when old enough to eat. Corn-meal does not make good swill, and ground oats with the shells is too coarse and wasteful.

An excellent swill is made from fine oat-meal obtained from oat-meal mills. This, combined with wheat-shorts, will produce an excellent ration for growing pigs. Never allow swill to stand more than twelve hours, and in hot weather it is often well to feed it as soon as mixed, for a sour swill will cause scours and often proves fatal.

With a feeding-floor and a gate that raises like a window-sash, with a bolt to hold it the desired height, the smaller pigs can be given the advantage in feeding.

Have the movable troughs placed on the feeding-floor. Fill them with the swill that has been prepared in an adjoining part separated by a partition from the feeding-floor.

Raise the gate to the desired height to allow the smaller pigs to pass under, and it is surprising how soon they will learn to make their way among the larger hogs in order to get on the feeding-floor.

After they have finished, replenish the trough with swill, raise the gate a notch for the next larger pigs, and so continue till at last the gate is raised high enough for the sows to enter and clean up what remains.

By this method of feeding, the smaller pigs get the best of the swill and more of it, and with this advantage uniformity in sizes is soon secured, a condition much to be desired.

While corn is the best fat-producer, young growing pigs must have other food for making bone and muscle. Grass, shorts, ground barley, oat-meal and roots should be provided to give growth.

Pure water is indispensable at all times, but it should be furnished before feeding, never after.

A clean, dry bed; good, pure air; a clean feeding-floor, and no more food than will be cleaned up by the pigs at every meal, combined with a good judgment and a love for the work on the part of the stockman, will make the raising and fattening of hogs one of the most profitable industries of the farm.



Mr. Cownie

It's Important

HERE are the essentials necessary to profitable swine-raising. Among practical farmers there is a strong prejudice against theoretical writers, and for that reason I have referred to my beginning in the business merely to show that I know whereof I write. Had I possessed the information given in this article when I began raising hogs, it would have been worth thousands of dollars to me, and if the suggestions given are followed by your readers who are engaged in raising hogs, it will be worth thousands of dollars to them.

John Cownie.

Fighting the Sources of Loss on the Farm

Draining the Rolling Land

By A. C. Ramseyer

TO GIVE a full description of my farm drainage would require more space than these columns allow, so it must be treated in a general way. The laying of twenty-two and one-half miles of tile on one hundred and eighteen acres required considerable thought, because of its importance and value as a business proposition.

My farm is not low and swampy, but is quite rolling, and I have many times been criticized for draining these high points, but draining them has each time been so satisfactory that I have not left a single point undrained.

My top soil runs quite even as a clay loam, and the subsoil is a yellow clay. I do not think that any part of the farm has sufficient gravel or sand as subsoil to afford natural drainage. There are a few acres of the lowest ground that are a dark loam to the depth of several feet.

I began six years ago, the year I had purchased my farm, to drain the various fields. Last fall I completed the farm. Each year I drained the field to be plowed the following year.

About eighteen miles of this draining was done by means of a steam-power machine, which in the hands of a competent man is certainly the most satisfactory method. In fact, if I had the work to repeat, I would not do a single rod of my draining by hand labor.

On slightly rolling land, where at times it becomes necessary to dig three and one-half to four feet deep, it is almost impossible to get hand labor to perform the work, while with a machine these places are gone through without additional cost. Again, it is impossible to make a bottom in a ditch as level by hand as can be made with these power ditching-machines.

The only objection I see to them is that they cannot be used to good advantage in the spring when the ground is soft. The ground should be fairly solid so as to give the machine traction-power. In fact, the ground cannot get too hard for it. I have seen these machines in the fall dig in the middle of the road with as much ease as in the field. Another advantage with a machine is that the work can be done in less time.

Time and Labor Saved

Three men—one to run the engine, set stakes, etc.; another to operate the machine, and a third to lay the tile—can in a single day dig and lay one hundred and fifty rods of tile.

As to the cost of digging by hand or machine, there is not a great difference, as twenty cents per rod for a two-foot ditch, twenty-two cents for a two-and-one-third-foot ditch, or twenty-five cents for a two-and-one-half-foot ditch is the prevailing cost by either method. Another advantage in favor of the power machine is that any size tile up to ten inches is laid at the same price. The machine always cuts a ditch ten inches wide. The price mentioned above for hand labor applies only to three-inch tile.

One digging by hand usually depends upon the flow of the water with which to determine the grade. This is good, because if the water will flow in an open ditch, it certainly will in the tile if properly laid; but I have many times found this very unsatisfactory in planning a system. When the work is planned with a surveyor's instrument, as it is when the work is to be done with a machine, and the operator is a competent engineer, there need be no question.

The man who did my draining is himself a competent engineer who can operate his machine as well as the instrument, and in the eighteen miles of draining he did for me there is not a single drain but is in perfect operation.

A grade so slight as one inch to a hundred feet can be maintained perfectly for any length and made to work satisfactorily.

The photograph on this page shows the machine used in my work. I do not own one of these machines, nor am I interested in their manufacture, but I am certainly interested in us farmers making use of them. In place of harvesting half a crop, as many are doing, we can double our yield and make farming profitable.

A Factor in Reclaiming Waste Places

In 1909, I had seventeen acres of my very lowest ground planted to potatoes, the season was the wettest in years, but I had the fall before thoroughly underdrained this field, and, in place of having a failure, the field produced 3,740 bushels, or 220 bushels per acre, which sold for the handsome sum of \$2,240. I am satisfied that I owed at least one half of this income to underdraining. This was an exception, but the cases are not few where underdraining has resulted in a profitable crop where otherwise there would have been a failure.

In fact, I think so much of the ditching-machine that I am confident they have revolutionized the draining business and will cause many of the now waste places to "blossom as the rose."

Fig. 1 shows the last eight acres drained. You will notice I do not run laterals direct up the slope, as is the practice of many, but try to run them angling with the slope as much as possible, going up the slope just enough to give sufficient fall. My principal reasons for this method are: First, it drains quicker and, second, it prevents much surface washing during heavy rains when the ground becomes saturated. As the water is

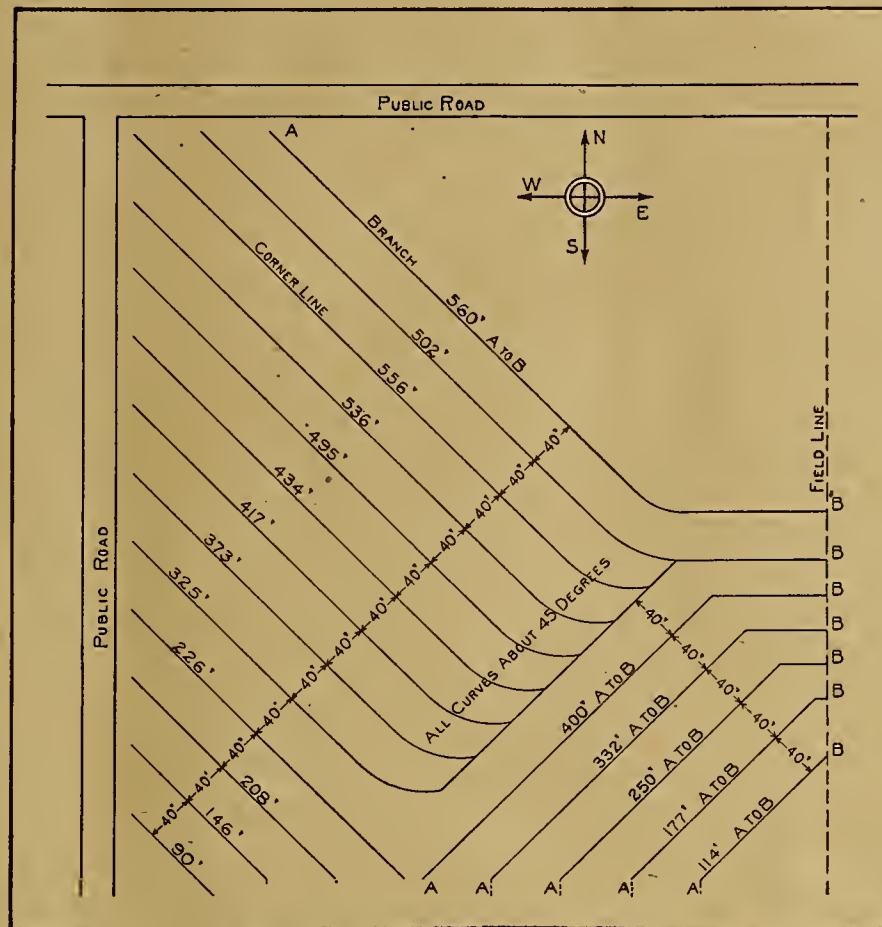


Fig. 1—The last eight acres drained

seeking a lower level, it will not cross any of these drains. Under ordinary circumstances there should be no water going more than forty feet—the distance of my drains apart. A drain running directly up the slope may allow the surface water to establish a groove running to the bottom of the slope.

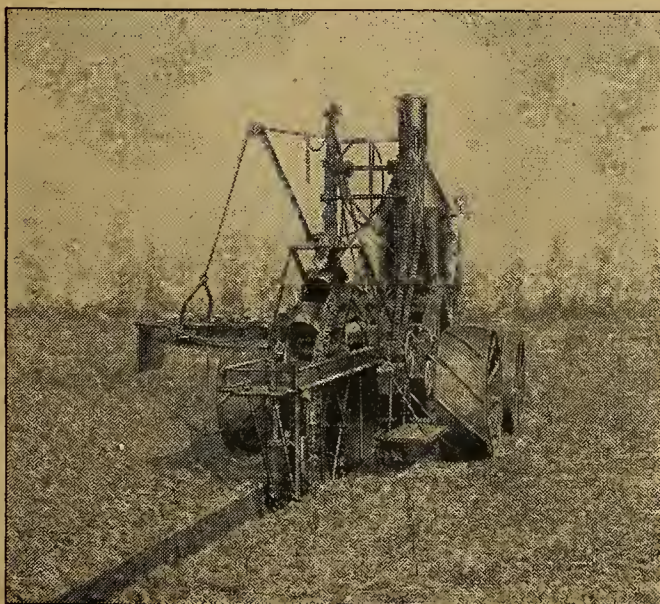
In all of this work one must always be governed by the outlet, which naturally is the lowest point of any field to be drained. Let us together imagine a field sloping to the south and gently to the east, with an open ditch running along the south side. My starting-point would be at the southeast corner, running the main parallel to the open ditch to west side of the field and then running laterals to northwest at an angle of about forty-five degrees and entering the main. Thus you will see there will be but one outlet to the whole system. I have my system so planned that I have one sixty-inch outlet, six six-inch outlets and two four-inch outlets for the twenty-two and one-half miles. All of my laterals are three-inch tile, the mains varying according to length and amount of laterals entering them.

Careful Planning is Everything

Planning one's system is the critical part of the work. So many make a great mistake in not planning to drain all of their land. The most enterprising farmers of our county have been draining their farms for the past twenty-five years, but they began by simply following the low places and did not plan a system by which the higher grounds might be drained. To-day many of them are beginning all over again and planning a system by which they can drain the higher grounds, as well as the lower. Thus many miles of drains, now in working order, must be totally disregarded.

If for any reason you do not see your way clear to complete at once the work of draining your farm, by all means plan your system so that it can be completed later without destroying some of the work previously done. For, after you see the real value of underdraining, you will not be satisfied until you have drained all of your farm.

But I am sure you are asking that popular American question: "What does it cost?" Well, here is where the rub begins. It does cost a great deal, and yet when all the advantages are summed up, it proves to be a good investment. And if someone were offering



The work can be done in less time by the ditching-machine

you mining stock that would yield you sixty per cent., you would consider it a good investment, but when right at your door, right under your feet, you can have a proposition that will yield you fifteen per cent., and in many instances twenty-five or even fifty per cent., you turn it down.

By placing your drains every forty feet, as I have mine, you will have sixty-six rods of tile per acre, and if placed two feet deep, will cost \$13.20 for constructing the ditch. Sixty-six rods will contain 1,090 feet of tile. These should be bought by the car-load, at about \$10.50 per thousand feet for three-inch tile, so that an acre thoroughly drained will cost about \$25. Now I told you this was good for a fifteen-per-cent. investment. That would mean \$3.75, or four bushels of wheat, or six bushels of corn, or eight bushels of oats, or five hundred pounds of hay. Can you remember when you lost this amount of wheat or clover by freezing out after you thought you had the promise of a good crop, or when you lost this amount of corn or oats by drowning out, or some of the other one hundred and one reasons that go with a wet season? I have seen many acres that might as well have yielded a double harvest but for the want of drainage.

Planning War on the Sparrows

By Dr. Leonard K. Hirschberg

MR. ENGLISH SPARROW having been duly tried and found guilty of being a pest, an undesirable and a general nuisance, Uncle Sam respectfully invites all good citizens of these United States to abolish him.

All persons who are interested in swatting the fly or exterminating the mosquito are invited to give a hand and chase from this land the little brown bird whose dynasty has extended over a period of sixty years. You can trap him, shoot him, poison him; in fact, there's a lot of things you can do to him, and in the opinion of the United States Department of Agriculture you will be doing the country a good-sized favor.

The bill of complaint against Mr. Sparrow by Ned Dearborn, an expert in the United States Biological Survey, sets forth that he is "cunning, destructive and filthy." He feeds in winter on waste material, and in summer switches his diet to weed-seeds and insects. About the only extenuating circumstances advanced in his favor is that he sometimes—but very seldom—flies out to the country districts where alfalfa grows and does a little good service by preying on the alfalfa-weevil. But most of the time he feeds on insects which play a useful part in agricultural service. Hence, about ninety-nine counts against him and only one in his favor.

Also, he is guilty of destroying fruit, such as cherries, grapes, pears and peaches. He gobbles up buds and flowers of cultivated shrubs, trees and vines. He causes havoc in gardens by nibbling at the peas and lettuce. He is destructive to wheat and other grains. Some idea of the extent of his depredations is gained by the statement that a flock of fifty of his fellows requires daily the equivalent of a quart of grain. Hence, the animal loss throughout the country mounts up to a large total.

Furthermore, he is a pirate and a disturber of the bird world. He preys on some of our most useful and attractive birds, among the number being bluebirds, house-wrens, purple martins, tree-swallows, cliff-swallows, barn-swallows, the wrens and mocking-birds.

He is noisy and vituperative and doesn't sing, but, on the other hand, annually destroys many feathered singers.

So much for the bill of complaint. Now as to the methods of extermination.

Dearborn finds some hope in the fact that the sparrow is gregarious and the activity of flocks is generally confined to a limited area. By devising a plan systematically killing them off in a given place or locality, it is possible to rid that section of them entirely. The only objection is that if they are not all killed some of them will take up their abode at another place. So that if Mr. Brown drives them all out of his back yard they will settle in Mr. Jones's yard. If Mr. Jones gets busy, he may be able to drive them back to Mr. Brown's yard.

The most effective means of destroying the birds in a locality is to tear down their nests at intervals of from ten to twelve days during the breeding season. In a town of four thousand inhabitants, where this method of attack has been practised during the last four years, 20,000 eggs have been destroyed and the number of sparrows has been greatly reduced. Nesting-places are generally in bird-houses, electric-light hoods, cornices, water-spouts and similar places. A long pole with an iron hook at the tip is recommended as the best implement of nest-destruction. By placing packing-boxes or tin cans in trees as traps, the birds may be captured after dark with a long-handled net. After the net has been quietly placed over the entrance to the trap, a few raps on the box will send them into it. Sparrows feed in close flocks, and a shotgun may be used sometimes to destroy a large number of them.

In cases where it is feasible to use poison, strychnine is urged as useful. It may be concealed in grain or starch and the combined product set out on the grass as a bait. In northern latitudes the best time to put out poison is just after a snowstorm, when other food is covered. The poison should be well scattered, so that a large number of birds may get it at the same time.



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GARDENING

By T. GREINER

Squash-Vines Need Watching

THE Hudson, New York, reader who complains that he is unable to raise squashes on account of some worm which tunnels into the stem at the roots, is not the only one who suffers injury in that way. The culprit is the squash-vine borer, larva of a night-flying moth. This works its way into the stalk near the roots and often entirely severs the vine at that point. In my own locality the insect is not troubling us. In earlier years I have often saved the plants by promptly layering the runners, covering the main stalk at the first one or two joints and pressing moist earth firmly over the vine. Roots easily issue from the vine near the joint, and I have had squash-plants thus take hold of the soil and do well, although all connections with the original rootstalk were finally and completely severed. Tobacco-dust, however, may be freely put around the roots of the vines and will have a tendency to repel the moth before it deposits its eggs. Possibly, by spraying the vines with lead arsenate (one ounce or more to the gallon of water or Bordeaux mixture), freely enough so that the liquid will run down and reach to the root (the earth may be dug away a little from the stock for that purpose), many or most of the maggots may be killed while they are trying to dig into the vine. For insects of this character, we have to try all sorts of schemes. But spraying as suggested is advisable whether we expect the borer or not. It is sure to protect our vines from the attacks of the yellow-striped cucumber-beetle and also of the flea-beetle.

The Cutworm Makes Trouble

Several western readers report serious injury to strawberry and garden plants by cutworm attacks. In one case strawberry-plants were suffering much, also newly set cabbage and other plants. The worms do their mischievous work during the spring months, and sometimes come in such numbers that they are kept in check only with considerable effort and difficulty. Cutworms are a numerous family, some of the species even climbing trees and devouring the foliage. All have a mean habit of cutting the stem of young and tender plants, such as cabbage, eggplants, tomatoes, peppers, etc., off near the surface of the ground. This is done during the night, while the culprit hides itself at daybreak just under the surface of the ground near the plant last eaten off. If we look for it there, we may be able to find and despatch it. The best way to get rid of the cutworms where numerous and destructive is to thoroughly mix a pound of Paris green with a bushel of bran, and just moisten this with water to which a little molasses has been added. Then at night place little balls or pellets of this all over the patch, near the plants to be protected. The worms are fond of this bait, will readily take it and are poisoned. There is some danger in this for birds or fowls coming into the patch in the morning. Clean cultivation, leaving no grassy margins, successional planting, which means repeated plowing during the growing season, and plowing the garden again in late fall, helps much in keeping the cutworms out of our lands.

What to Do for Ants

An Iowa reader is puzzled how to keep ants from his pansies. I cannot imagine what the ants want from pansies or other healthy plants. They do not feed on sound plant-tissue. But when plants are infested with aphid (plant-lice), ants are sure to come and feast on the nectar secreted by these lice. The remedy, of course, is to get rid of the plant-lice; then you will usually get rid of the ants. Spray lice-infested plants with strong tobacco water, or some other tobacco preparation, especially from the underside, or with kerosene emulsion, or whale-oil-soap emulsion. Sometimes ants become troublesome by building their great nests in cultivated ground, or in sod, or near trees or shrubs. In that case, procure a quantity of bisulphid of carbon, punch a hole into the ant-hill, and pour a tablespoonful or two into it, then quickly cover the hole with earth so that the fumes of the drug have to pervade all through the ant-nest. That will quickly put a stop to the nuisance.

Why Potato Failure?

A St. Louis reader asks why he has not been getting a potato crop. He had none last year, and is afraid that his experience will be repeated this year. The failure last year was pretty general, as proven by the unreasonably high prices paid for potatoes for the past six months or more. For most people potatoes have been really a luxury for a long time. I have had fewer potatoes on my table this past year than in any year within my recollection. The reason for this general failure? Weather conditions, no doubt. The potato is more particular

and more dependent on certain favorable conditions than almost any other garden or field crop. The extremely hot weather of May, 1911, simply burned the foliage of my early potatoes, although all soil conditions seemed to be favorable. The vines were almost wholly destroyed by "tip-burn," and the yield was the lightest we ever had. In the "land where the big potatoes grow," in western and central New York, in Maine, etc., the land is a gravelly loam, and careful cultivators have managed to grow good crops even in the disastrous season of 1911. They grow mostly the late varieties, but can grow the early ones with equal success. A short clover rotation and a rational system of feeding the land or the crops are the key to success. Put plenty of humus into your land, and your chances of growing good potatoes will be materially improved.

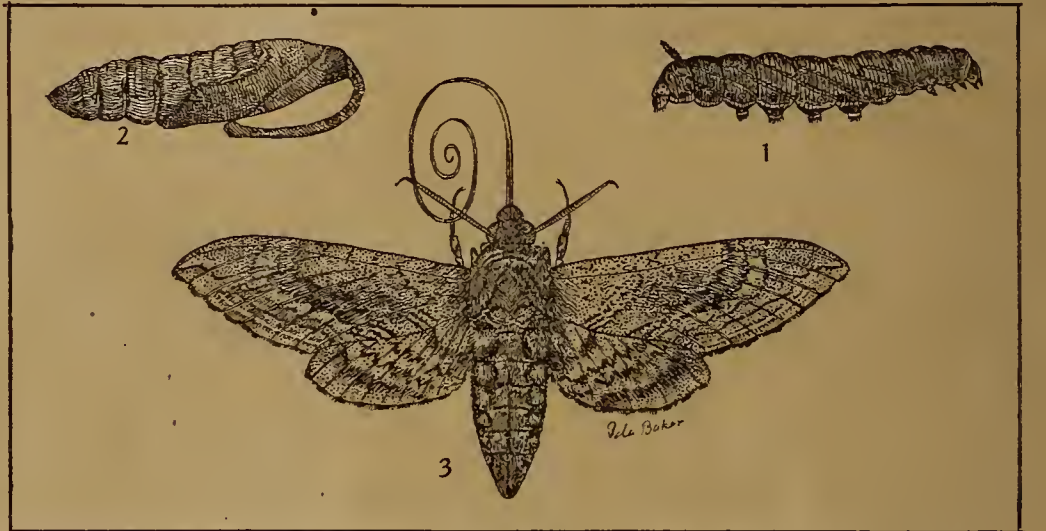
Hardy Onions for Fall Planting

Early in August I sow my White Portugal and Vaugirard onion-seed in open ground in order to make good early green or bunching onions for next spring. Seed should be sown thickly in rows a foot apart. I tried some sown broadcast, last summer, and had some good green onions from them this spring. But I am not going to repeat the trial. The onions in the drill are much more easily taken care of. Several readers have asked me where seed of these varieties can be procured. Every American seedsman lists the White Portugal, either under that name or as "Silverskin," or under both. This is one of the hardiest of all onion varieties listed by American seedsman, and with me far better for this purpose than White Pearl, American Pearl, White Queen, Barletta, etc. I see no reason why our seedsman do not list the Vaugirard, a French sort that I find even harder than the other sorts mentioned and a very good onion for an early green or bunching sort. Last year I had to send to a

The American Sphinxes

WE ALL know of the sphinxes of Egypt, but we have some sphinxes of our own quite as interesting, but perhaps not quite so popular as the ancient sphinxes. During the spring, while plowing or spading in the garden, we often find strange little brown jugs buried in the soil, little jugs with handles but with never a spout. However, they are not made of pottery, but seem to be enclosed in polished cases, and, if we disturb them, we find that they can squirm a little. These little jugs contain much more than most people guess, and they form one of the riddles which our American sphinxes ask of every gardener in the spring.

Often on a summer evening, while we are resting on the piazza, we hear the whir of rapidly moving wings and detect the blur of them poising in front of the honeysuckle blossoms or above some other deep-throated flower, and we ask, "Can that be a humming-bird?" But at that hour in the evening even the most dissipated humming-bird is safely resting on his home twig, fast asleep. If we were to catch one of these seeming humming-birds, we should find it a big moth with a large, spindle-shaped body and with two pairs of long strong wings beautifully marked in grays, browns and blacks, and very possibly the hind wings might be marked with rose color, red or yellow. If we should examine this moth closely, we would find just below the eyes an object that looked like a coiled watch-spring; and if we should unroll it with a pin, we would find that it is a long, flexible, thread-like object, perhaps as long or longer than the creature's body. This is the moth's tongue, and it consists of a hollow tube, through which nectar may be sucked, and what the moth was doing in visiting the flower is an interesting story. It is necessary for the welfare of plant species that they should have the advantage of cross-breeding, just



1, the tomato or tobacco worm; 2, in its sleeping stage; 3, finally becomes the sphinx moth

seedsman in Paris, France, to get my supply of seed of this. I have to urge our readers again to try a little patch, say a row or two, twenty, forty or a hundred feet long, sowing seed of the Portugal at once and using about an ounce of seed for one hundred and twenty-five feet of row. The land should be very rich, and the application of a fair dressing of nitrate of soda (or nitrate of potash or saltpeter) next spring would be of great advantage. Keep the weeds down and out, and perhaps put a mulch of fine and weed-free litter between the rows on the approach of winter. Then enjoy your sweet and tender little bulbs in May and June following.

The farmer who cultivates an acre of corn by foot will walk a goodly number of miles. But think of the men who walk for exercise and get nothing out of it but the walking.

Our Plan of Growing Celery

I have now finally settled on the double-row system of planting celery. The commercial celery-growers in South Lima and other celery-growing sections all practise this plan, and I fully appreciate its advantages. They have the two rows in each set six inches apart, and the plants six inches apart in the rows. These double rows are three feet apart from center to center, which makes the space between the outside rows of two adjoining sets two feet six inches wide. This is space enough when boards are to be used for blanching and to allow cultivation with the one-horse cultivator. One of the many growers I observed in South Lima uses a car-load of boards for this purpose. The cheapest lumber is good enough, and if well taken care of will last many long years. A thousand feet of twelve-inch boards cover a thousand plants at one time, and will blanch from three to four thousand stalks during the season, which represent between nearly fifty and a possible eighty dollars gross returns. The acre rate of returns is often upward of one thousand dollars, so that the business seems to be on a paying basis, and the investment in lumber for this purpose is fully justified. For our smaller operations we usually have boards enough, suitable for this purpose, lying around loose on the premises. We use any old board

as is the case with animals. But the plants cannot move about and get their mates, so they have to hire the insects or humming-birds to bring them pollen from other flowers. They do this by placing their nectar in such positions in their flowers that, in order to get at it, the insects must become dusted with pollen in such a manner that they will distribute it upon the stigmas of the next blossoms that they visit. Many flowers were developed with special reference to the sphinx moths, and their pollen is carried by these insects; the petunias, the flowers of jimson weed, nicotiana and of the tobacco-plant are all of this sort.

The tobacco sphinx is an instance of a partnership between moths and plants. This moth visits the tobacco-flowers, which open in the evening, and carries the pollen for them and thus helps develop the seed; in turn, it lays its eggs upon the leaves of this plant. From each egg hatches a caterpillar which grows to be what is generally known as a tobacco-worm. It bears a horn on the rear end of the body, of which people are foolishly afraid, for it is perfectly harmless. After it achieves its growth, it crawls into the ground and, packing the earth around it, forms a little cell in which it changes to the jug-like object which arouses our curiosity in the spring; from the "jug" issues the beautiful great moth.

We have many species of sphinx moths whose caterpillars feed upon a wide range of plants. Several of them are fond of the Virginia creeper and live their whole lives on our piazzas; they resemble the leaves so much that we do not discover their presence. Few of these insects do much damage, but when they do, they may be killed by spraying the leaves with arsenical poisons. However, we should bear in mind that these moths are friends of the flowers and do a great work for them, and this should lead us to treat them considerably.

ANNA B. COMSTOCK.

The too-early farmer is a bird.

Give more intensive attention to your extensive intentions.

The man who neither horrows nor lends may be following the best policy, but he is not the best liked in the neighborhood.

Poultry-Raising

How to Tell Weak Fowls

THE first principles to be adopted in the successful handling of poultry should be to eliminate weak stock whenever noted. This applies to birds in all stages of development from the baby chick to the mature fowl. The chick which shows physical weakness at any time should be killed, or be distinctly and permanently marked and kept apart from the strong stock, later to be marketed if worthy. A chicken may overcome weakness, so far as external appearances show, and still retain the inherited tendency to weakness. It is well known that certain physical weaknesses are transmissible from parent to offspring.

The actions of a fowl probably best indicate its physical condition. The physically weak is inactive and "dopy," and is more likely to squat than to stand. It does not scratch or forage actively. It is the last to get off the perch in the morning and the first to go to roost at night, and frequently is found on the perch during the day. The loudness and frequency of the crow of the male, or the song or cackle of the female, is a reliable indication of strength. The weak fowl seldom crows or sings and is less likely to do so when in the presence of a strong individual of the same sex. Gallantry on the part of the male is shown in his generosity and consideration toward the females, as indicated by his calling them and giving them the tenderest morsels to eat. This is one of the surest indications of physical vigor on the part of the male. The shape of the body is closely related to the health and physical vigor of the individual. The deep, thick, compact body, with large fluff, shows greater vigor than the slender, long-jointed, more delicate body of the same variety. This is particularly noticeable in comparing the strong and the weak males. There is an interesting correlation between the various parts of a fowl, which is one of the safest guides in selecting fowls on the basis of vigor. For example, a fowl of low vitality is likely to have a long, thin beak and head; long, thin thighs and shanks; long, thin toes. The reverse is true of the physically strong. To examine a fowl in detail for physical vigor, we may begin at the head. This, in the physically strong, should be medium large, short and broad, while in the physically weak it is more likely to be long, flat and thin, with long, flat beak, producing a "crow-headed" appearance.

A strong fowl should have a medium-large, bright-red comb and wattles. The fowl carries its health certificate on top of its head. The eye is the mirror of the body. It shows, unmistakably, conditions of health and disease. A fowl in good health should have a bright, clear, round eye, which should stand out prominently. The lids should not droop, giving the appearance of a snake or turtle eye. The latter shows a weakness of the muscle and always indicates a lack of sufficient vigor to keep the eyelids open.

A fowl having a strong constitution has a full development of the tail-feathers. These normally are carried erect. A fowl of the same variety having a weak constitution, especially if it is suffering from disease, is likely to have tail-feathers less developed and carry them on the side or dropped. This is more apparent when the weak fowl is suffering from fright, which usually will be the case when placed in the presence of the strong.

The breast should be round and full, the keel-bone well covered with meat. This indicates good muscular development. A fowl shows ill health and weakness quickly and unmistakably by the shrinking away of the muscles about the keel.

The shanks are a conspicuous indication of the strength of a fowl. They should be of pronounced color characteristic of the variety; large and plump, as compared with the faded-out, thin shanks of the fowl of low vitality. Cold shanks are a very common accompaniment of low vitality. It is a common symptom characteristic of most poultry diseases.

The quantity, brilliancy and nature of the plumage are very reliable indications of constitutional vigor. The feathers of a fowl of low vitality grow slowly. They are likely to be dull and ruffled, as compared with the close-fitting, smooth, fully developed, bright plumage of the vigorous fowl. The color pigments, so pronounced in the feathers of the brilliantly colored breeds, do not develop to perfection with physically weak fowls. Fowls that lack vigor do not, as a rule, have the necessary surplus fat in their bodies to supply the gland at the base of the tail. This gland furnishes the material to oil the plumage.

The appetite is also a good indication of vigor. A vigorous and strong fowl consumes large quantities of food. It is usually found with a full crop, if suitable food is available. A fowl that is constitutionally weak seldom carries more than a small amount of food in the crop, no matter how much may be accessible or how attractive it may be. It cannot be made to eat. It lacks appetite, and this indicates weak digestive system.

Low sexual power appears to be associated with physical weakness in both sexes of domestic fowl. Capons, though they grow to a large size, are nevertheless physically less vigorous than sexually strong males and females. While unsexed fowls may grow to larger size, they are less active and appear to use their energies in growth instead of in sexual or physical activities.

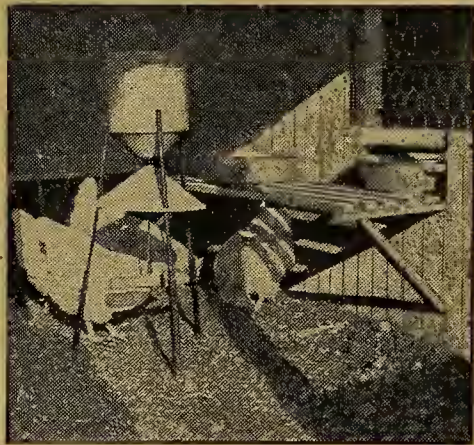
In breeding fowls for high egg production, we must develop the sexual characters. Egg production is a sexual character. It is the first stage of reproduction. Hence, if we would succeed in increasing production, we must be skilful in recognizing and in selecting only individuals which are physically and sexually vigorous for the breeding flock. When either physically or sexually weak fowls are discovered, they should be removed from the breeding-pens. Any single evidence of physical weakness alone may not necessarily be conclusive, but a combination of several weak characteristics is absolutely reliable. One of the most certain and satisfactory ways to mark a weak fowl is with a fast-color aniline dye, thus distinguishing it quickly from others until the feathers have been molted.

A. E. VANDERVORT.

Feeding the Contest Birds

THE Connecticut College egg-laying-contest hens are fed on the dry-mash system. In each side of the double colony houses are an automatic feeder for grain, cups of grit and of shell hung on nails, a pan of dry mash on the feed-rack and a mangel-wurzel beet on a nail for green feed. The dry mash consists of bran, corn-meal, gluten feed, ground oats, middlings, grade flour and fish and beef scrap. A hole is cut in the partition, and set on the feed-rack in this opening, half-way in each side, is a large pan of water. The dry grain feed in the automatic feeder is corn, wheat, oats, buckwheat and Kafir-corn, mixed.

The illustration shows the automatic feeder. The crosspiece at the foot of the long rod which comes down from the reser-



voir's funnel is a cylinder of wire netting filled with grain and the hens have learned to whirl this—and thus release grain, which spills down over the inverted funnel into the litter,—whether there is anything in it or not.

These arrangements guarantee absolutely uniform feeding. Every Wednesday morning the attendants weigh the feed remaining, deduct it from what was supplied and replenish with a freshly weighed supply. If necessary, the feed is replenished during the week, also. There are prizes for the pens making the greatest net profit over cost of feed during the contest. Several owners have retained at home pens of birds as nearly like their contest pens as possible and are trying other feeding systems on them for comparison.

J. OLIN HOWE.

Food for Feathers

A MONTANA reader states that his incubator-hatched, two-months-old chickens have lost their feathers, making them entirely naked. They are free of lice and mites, however, and have had plenty to eat, such as wheat, cracked corn, oats and green stuff. They are apparently healthy.

The loss of feathers by young chicks is rarely harmful to the chicks, provided they have warm quarters at night. The causes of shedding the feathers are various. Sometimes they will crowd together in the coops, and by constantly moving about, rubbing against each other, they will prevent the growth of young feathers and remove all they have on them.

Sometimes the food they receive does not contain sufficient feather-making material. Oats, bran and ground oyster-shell contain lots of feather-making material. I would see that they have plenty of crushed oyster-shell mixed with their food all the time. I would give them one feed a day of wheat-bran, one part; shorts or middlings, one part; hulled corn and steel-cut oats, one-fourth part, dampened with milk. I do not like to feed whole oats because of the damp hulls. It might be a good idea to give them a little tonic in their food. One of the simplest and best is ground ginger, one part; fenugreek, one part; carbonate of iron, one part. Mix one teaspoonful into their dampened food three times a week—one teaspoonful to each twenty chicks. Keep them in warm coops at nights, and when they begin, they will feather rapidly.

FRED GRUNDY.



Anty Drudge to Mrs. Farmer

Mrs. Farmer—"Well, you still do it, even after I have told you how hard it is to rub those stains out. And how I have to boil and boil it before it is anywhere near clean. And on washday you men complain of the sickening steam from the wash boiler."

Anty Drudge—"Stop scolding these poor men. Take Anty Drudge's advice and instead of washing, rubbing and then steaming up the house by boiling the towels, use Fels-Naptha Soap with cool or lukewarm water, and half the rubbing you ordinarily do. Your towels will be spotless."

Why save your butter and egg money for a washing machine? They're mighty handy, but they save you only the hard rubbing on the washboard.

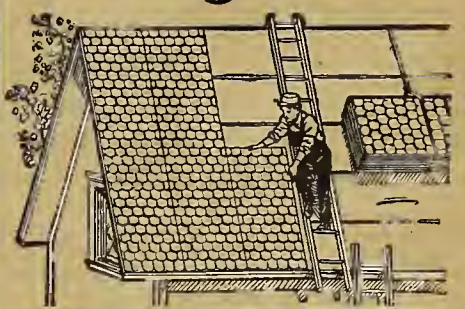
The easiest way of washing will take none of your pin-money. You've got to buy soap, anyhow, and Fels-Naptha Soap used the Fels-Naptha way does away with boiling clothes and the back-breaking drudgery.

Just rub Fels-Naptha Soap on the clothes, roll, soak, and place them in cool or lukewarm water. In a half hour the soap has done its work. Then a light rub, a rinse, blued, and your wash is ready to hang out. Full directions on the red and green wrapper.

For full particulars, write Fels-Naptha, Philadelphia

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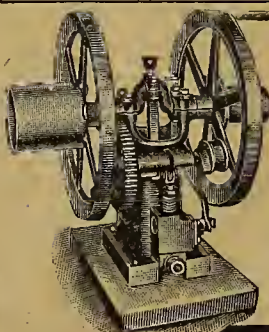
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Garden and Orchard

Mann Makes Good

MR. WEST shook his head when I suggested that he get Mann to help us in the apple-picking. He didn't believe in college boys, and was afraid that he wouldn't get up in the morning, afraid that he wouldn't work, afraid that he would get homesick. Hesitatingly he accepted my assurance that either Mann would get up or I would pull him out of bed, that he would certainly work and that he was too fond of the country to think of getting homesick.

When Mann arrived, I told him enough of the story to make him see that it was up to us to show what "city fellers" could do on a farm.

I had watched Mr. West and John put together apple-boxes. I had even helped them, but simply followed their ways. The heads were at one end of the bench, the tops and bottoms at the other, while the sides were piled on the floor. The nails were in a tin bucket and mixed in with trash of various sorts. Finished boxes were put in a row along the wall of the shed. Between the making of each box John walked to the end of the shed with the completed box, Mr. West would lean down and pick up a couple of sides, and John would walk back via the end of the bench and pick up a couple of heads. That is, he generally did it. Sometimes Mr. West would get the heads. Neither one was sure just what he was going to do. I had timed them and knew just how long it took them to assemble one hundred boxes.

The first job that Mann and I tackled was putting together apple-boxes. We used most of one evening in studying the arrangement of parts most economical of effort. Instead of working on opposite sides of the bench, we stood side by side. In front of us was a pile of ends. At Mann's left hand were the tops and bottoms. At my right were the sides. Directly opposite the ends (when in position) were little heaps of nails, each at the height of the top. Mann picked up two ends and put them in position for the sides which I placed upon them. My left elbow rested on the side, thus holding board and ends in position, while we both reached for nails and hammer. Four nails were driven home, Mann lifted the partly built box and reversed it while I took up the other side piece. Four more nails were driven home in each end, and I turned the box one fourth over while Mann seized a bottom. Again the nails were driven home, and the echo of the last stroke on the eighth nail was the fall of the completed box on the floor behind me. Mann picked up two more ends, I seized a side, and a second box was under way.

When six boxes had been completed, Mann piled them up along the wall of the room, I brought more ends and sides to the bench, and we started in on another round of box-making.

John and Mr. West had put up boxes for years. Mann and I were getting our first experience in the work, still we took exactly one half the hours to put up one hundred boxes that the old-timers had taken.

After the first few days the management of the packing-house was left entirely in our charge, and here, too, we put in force the same method of eliminating effort. First we made a place for everything and kept everything in its place. Hitherto things had been left where last used. If you happened to be the last one to use the barrel-press and remembered where you had left it, not much time was lost in finding it again, but if John had last used it and you now wanted it, a great deal of time was lost while you hunted for it—time and disposition, too.

The barrels were kept in order, gathering-barrels of unsorted fruit in one part of the house, packed barrels in another, empties in a third. An orderly procession was kept up, one that saved double handling at every stage. The work was divided up, each man had a definite job and knew just what it was. When one gets used to sorting, there is a distinct loss of time in the change to facing barrels. The work is different, the mind has to work along other channels, the muscles have to adapt themselves to the change. We didn't care to specialize too closely and so swapped work often enough to avoid becoming mere cogs in the machine. This was all arranged by Mann. We all worked under his orders and thus were saved loss of time while we had to think out what to do next. Things ran smoothly and swiftly. Just how swiftly Mr. West didn't appreciate at the time. Occasionally he would come to the packing-house and offer to help. I am afraid we were not very cordial, because we had already worked out how much time it cost us to have him enter the door. Barrels would be disarranged, the press would be lost, hammers would be thrown down in dark corners, the sorting-baskets would be at the wrong end of the house. Holes would be bursted in the system which we had so carefully built up.

The full saving did not appear until the last of the season, when we packed the culls. Then the high-grade inspection work was

relaxed, and we fell back to the standard of other years. Mr. West would haul a lot of apples to the packing-house and say:

"There, boys, are enough apples for the day, I reckon!" but before noon we would send to him for more. He couldn't understand it, and would watch us work with wonder. There didn't seem to be any particular speed. There was no rush, no confusion, but the barrels simply melted away. Unsorted apples came in at one end, and packed barrels went out at the other. Records for speed were broken. Even when we were short-handed, the work went on at a rate of speed never before seen on that hilltop. And it was simply the application of certain principles of scientific management.

Mann had made good. HENRY WOLFE.

No man can fool Nature with excuses for not keeping her laws. She punishes all offenders.

An Irrigation Pump

A SOUTH DAKOTA reader owns a centrifugal pump which throws a two-inch stream and asks if that would irrigate five acres. He likewise wonders what size engine would be required.

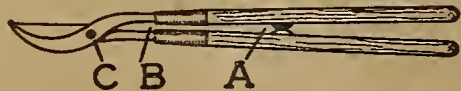
This pump would supply sufficient to irrigate five acres if it is operated at what is usually considered an economical capacity. In such cases, it should throw about one hundred gallons per minute. This is enough to irrigate a larger tract of ground. The difficulty lies in the fact that the stream is relatively small, and in consequence the leakage from the ditches would reduce it so that it could not be effective. The remedy for this would be to run your water into a tank or small reservoir for some hours or during the night, and then use it in larger quantities while you are at it. As a practical matter, you would be dissatisfied with this sized stream unless you could store it in that manner. It takes just as long a time to attend to a small stream as it does to a large one, and hence it would be more economical of time to use either a larger pump or store water, as suggested.

The height of the lift would be important in determining the horse-power required, for the greater the height, the more the power. However, as a guide, a three-horsepower engine should lift this amount of water forty feet high if the pump is arranged so that there is not an undue amount of loss by friction. Even then a surplus of power is often a good thing. For a height of twenty feet, the loss of friction would be nearly as much, and hence the power allowed should be considerably more than one half as much as for forty feet, say practically two-thirds as much. To lift eighty feet, the power should be at least one half more than for forty. L. G. CARPENTER.

He who farms just a little better than he did last year is on the way toward the perfect way of doing things on the farm.

Just a Rubber Ball!

TAKE a boy's five-cent rubber ball, cut it in two, and nail, or screw, to handle of pruning-shears at A as shown in sketch. This simple device has meant hundreds of dollars to me, as I have done an immense amount of contract pruning in my day. It



not only lightens the labor of the pruner at least one hundred per cent., but it also lengthens the life of the shears. Without this device the shears come together at B, the shock being so great that the bolt at C is soon worn out. This device can be used on many similar tools. CHAS. BLOM.

The man who fears that he cannot do as well as he ought has weighed himself in his own balances and found himself wanting.

Good for Use Everywhere

WE CONSIDER currants not only indispensable for a home fruit, but also among the most profitable for market of any fruit we have. If given high cultivation, the crops are usually immense and require only a minimum amount of labor to gather and prepare for market. That is one great consideration here. At the same time, the demand for the moderate quantities grown around here is always good, so that prices can be held well up. For home use, we run the fruit through a fruit-press, which removes the seeds and skins, allowing us to can the pulp alone. This makes good sauce, especially when eaten with sliced bananas.

The bushes need care of course, especially close watch during the green-worm season and spraying with some scale-killing preparation every fall or early spring, as the bush is very liable to be attacked by San José scale if that pest is anywhere near. I now use scalecide or other miscible oils. Crude petroleum in spring is also a good and sure application for scale on currants. At first sign of green worm, spray with white hellebore in water, say a tablespoonful to the bucket. T. GREINER.

Farm Notes

Back to the Land

By Berton Braley

IT'S all very well to cry "Back to the land," And the movement is healthy enough, But those who come back might as well understand

That you cannot make good on a bluff.

You may "put over something" on people in town,

You may "put through" whatever you "frame,"

But old Mother Nature will make you "show down";

She stands for no confidence game.

It's all very well to cry "Back to the land,"

But you've got to be ready to toil;

You've got to have energy, gumption and sand

To raise up your bread from the soil;

And if you're a failure at all you've essayed, You'd better remain where you've been;

For farming is not an incompetent's trade, And you'd simply fail over again!

It's all very well to cry "Back to the land," And the land needs the people, that's true; But this is the thing that they *must* understand,

They've got a stiff job to put through.

We don't want the grafter, the crank or the shirk,

Nor the man who has nothing but "charm";

The land needs the fellow who's willing to work,

And who also brings "brains" to the farm!

Compressed-Air Power from Windmills

THE storage of a cheaply, intermittently produced power presents a problem difficult of solution; one that has received the careful consideration of engineers and that, in certain forms and for special purposes, has been reduced to practice.

It is necessary to observe and comply with the theoretical and purely mechanical conditions involved in the generation and use of the power, the special situation and surroundings of the plant and the skill and attention available in its daily and hourly operation.

A windmill strongly and scientifically built, judiciously located and reasonably cared for, produces, in many parts of this country, a good deal of power, in the aggregate, at small expense.

The windmill, when running at its best, is not a powerful motor and gives its maximum output for only a comparatively small part of the time; also, during even that small part of the time the rate of speed is varying so greatly as to prevent the direct application of the power to most uses and to all those uses where a uniform rate of motion is necessary.

Owing to the excessive variations of speed, none of the mechanical expedients for speed-governing are applicable, in practice, to windmills.

It may be noted, in passing, that there are many days, at certain seasons, in favored localities, where windmills operate with some steadiness, and the difficulty mentioned is not so acute, but it still prevents, even there, the large use and general adaptation of windmill-power to industry.

With this marked characteristic of the prime motor in view and in the knowledge that the motor will not furnish any power at all for intervals of perhaps days at a time, owing to the absence of sufficient wind to drive it, the necessity of a storage of the power is obvious. It is equally clear that the storage problem is an extreme one, in this case.

The only storage of the power of windmills yet operated to any visible extent is through the storage of water pumped by the mill to an elevated reservoir or tank, or through the storage of electric energy in a set of accumulators by the use of a dynamo run by the mill.

Water has been pumped up everywhere by mills; that the water so stored has not been used for power generation by running it through a water-wheel need not obscure the fact that power was there which theoretically could have been utilized, though with little effect or convenience in practice. The secret of the success of windmill pumping lies in the fact that a water-pump is not very exacting in its demands as to the rate at which it runs, though even that pump has a critical speed or a rate at which it works best.

The operation of a battery of accumulators, when they are installed for power, involves a large first outlay and highly skilled attendance; for to realize much power at a time it is necessary to have a large battery, and only a battery expert can so handle it as to avoid destructive actions which result in making the cost of operating far too expensive.

Neither of the two systems referred to

meet the requirements, and it does not seem possible in any way to make them do so.

There is a simple element at hand without cost,—which is abundant, clean, safe, flexible as to storage and control of delivery, without sensible weight, deterioration or destructive action when stored and which can be utilized for the storage, delivery and generation of power by the use of commercial, easily obtained apparatus,—which demands only the most ordinary skill for its operation. That element is air.

An air-compressor, or air-pump, will operate successfully at a wide range of speed, much wider than will a water-pump. It is a simple and reliable machine and much more durable than a water-pump.

Attach an air-cooled air-compressor to the head of the windmill, pipe the compressed air to a steel tank, let the mill run whenever it will; when power is required, operate a steam-engine, of simple type, on the air from the tank. This outlines the only system that offers, at present, any solution of the problem of how to utilize the power of the wind to best advantage.

In the diagram the air-cooled compressor, for the first "stage" of compression, is located at the head of mill No. 1 directly connected to the mill shaft. A pipe carries the air from the pump, compressed to fifteen pounds above the atmosphere, to tank A.

From tank A a pipe runs to the compressor, or pump, on mill No. 2, where the air is further compressed to forty-five pounds per square inch. The air is then delivered to tank B, from which it passes to the head of mill No. 3, where it is finally compressed to one hundred and twenty pounds per square inch and then delivered to tank C.

When it is desired to run the engine, the air from tank C is admitted to a reducing valve and thence to the engine, with or without some form of pre-heater, at a pressure of from sixty to eighty pounds.

Three mills of moderate size exactly alike are employed to secure the initial power. They should stand apart from each other and where they feel the force of the wind equally.

The "three-stage compression" is more efficient than "double" or "single stage" compression, with an equal terminal pressure; and it permits of using air-cooled compressors instead of water-cooled ones. As the three usual size mills are necessary to furnish power enough, the combination works out well.

The tank C should be of large size, the larger the better. As they should last almost indefinitely without repairs, the interest charge is the main item of their expense. Their strength is determined by standard engineering practice.

If the pressure on tank C is one hundred and twenty pounds at the start and an engine be operated at seventy pounds, there can ensue a drop of pressure in the tank of fifty pounds before there is any variation of the power of the engine, though the engine could still be operated at a lower power for a much longer time. The length of time an engine can be run is dependent on the size of the tank C; that is, the total volume of air it contains.

The losses in compression, by friction and leaks in pipes and valves, and the efficiency of an engine are matters of quite definite engineering practice, and the costs of windmills, compressors, piping, valves, gages and engines are easily obtained, so that a plant of this character may be estimated with confidence in the detailed plans of responsible engineers.

The actual cost of power, per horsepower hour, has not been demonstrated in a plant of conclusive size, but it should work out at not to exceed two cents, including interest, depreciation, taxes, operation and every expense. ENGINEER.

A Trick at Roofing

IT IS often necessary for farmers to repair the roofs of their buildings, and I think that a good many felt and steel roofs would be painted oftener if it were not such a dangerous job. As such roofs would without a doubt be spoiled by using cleats, it is somewhat of a puzzle to know how to stay on the roof to do the work. But if you have a ladder and a board six or seven feet long, it is an easy matter. Simply place the ladder on one side of the roof, and run the board through the space between the two top rounds, and let it project down on the other side of the roof, driving a nail in the top of the board, to prevent it slipping down too far. A small board is sufficient to counterbalance the weight of the ladder and man.

If two men desire to work at the same time, fasten the tops of two ladders together with ropes and place one on each side of the roof.



W. B. MCKENZIE.

Live Stock and Dairy

Fitting Horses for Market

MORE money can be made feeding horses for market than with any other class of stock-feeding. There is a constant demand for good draft-horses, and the average farmer should keep draft-mares and have a few young horses to sell each year. It is very important that the horse possess good conformation and have ability, but the price received depends very much upon the condition of the horse. The amount of flesh which the horse carries has very much to do with the price which will be received upon the city market. In fattening horses for market, I find that stall-feeding is by far the best method. Exercise is not necessary. It is very important that the food is not changed during the fattening process and that the horses be brought to full feed gradually. Horses should be confined in stalls and fed all the grain and hay they will clean up. In fattening horses, corn may bring returns as high as one dollar per bushel. Clover-hay is an ideal hay for this work, and when fed with corn to fine, large-boned animals, produces gains of as high as five or six pounds daily. Bran will be fed with corn, but corn produces very satisfactory results when constituting the sole grain feed. Many farmers fatten their young horses and sell them raw and unbroken. If broken before fattening and sold as broken, I have found horses will command a better price. City business concerns have no time to break horses before using them and gladly choose and pay better prices for the broken ones. I have also found that horses will bring more money when sold in matched teams than when sold singly. C. J. GRIFFING.

EDITOR'S NOTE—This method undoubtedly pays the feeder well, but the horses are made less valuable by the forced gains made without exercise. These pampered horses will be of little value for six months or more after they begin work.

Doctored Heaves

A HORSE that has the heaves will breathe in rather long breaths, and in expelling the breath his flanks and belly will be drawn in a little. This is the best description I can give, though the disease is one of the easiest in the world to detect.

Heaves can be "covered," as it is termed, temporarily by the use of drugs, and in such cases one probably would not detect it. Reputable dealers who handle new stock, rarely do these things. They are more often practised by those who deal in second-hand horses and "old plugs." The best way out for anyone who is not interested in playing the horse-swapping game—especially if he is inexperienced in the dark and dubious ways of the players—is to keep out of it and deal only with reputable men. You must understand that I don't say all dealers who handle old horses do these things; but the sifting process—the learning who will do them and who will not—is often rather expensive for inexperienced horsemen. DAVID BUFFUM.

Other Signs of a Good Cow

MOST of us are familiar with the signs of a good dairy cow; that is, with those located on the cow; but we do not want to stop with them alone. There are other signs less directly connected with the cow's anatomy that cut a wide swath in dairying. They concern the cow's care and are about as important as the cow is in getting out the profitable pound of butter.

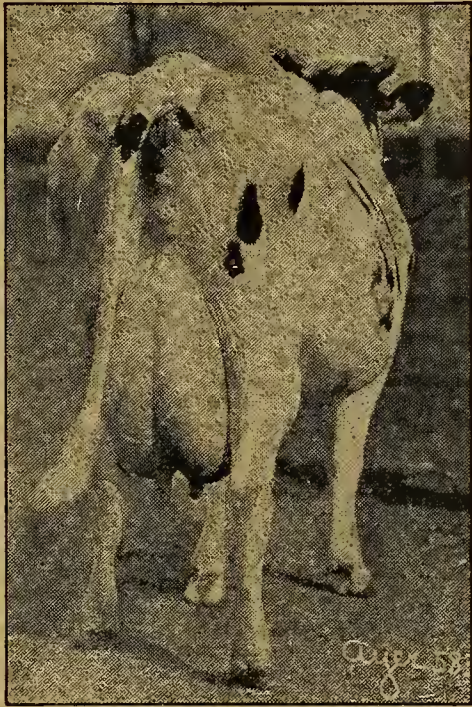
One of these signs is an owner who has faith in cows, who believes that the cream-can is mightier than the grain-sack. He should be the variety of man who has soul-room for the conviction that a kind word in time is better than many whacks with the milking-stool, and who looks upon dairying as the whitest job with which agriculture may be crowned. Such a man will succeed because it is the law on that subject that he cannot fail. He will put an atmosphere of care around the proper kinds of cows and get the lusty results that make expenses wilt. I got my first ideas on this subject from a man of the above caliber. He had good cows, not strictly of a dairy breed and build, but showing a strong tendency that way. They were not fed more than ordinarily well either, just plenty of varied roughage, with roots and bran, as a winter ration, and natural grass-pasture in summer. But those cows had kindness lavished on them; warmed water to drink in winter, a shady retreat in hot weather, no flies or dogs to annoy them, always an easy, gliding way that made each cow think she was an especial pet. They were all named, and when called, any of them would come from the farthest corner of the field. A blow or harsh word they never learned the meaning of. If made of tissue paper and dynamite, they could not have been handled more carefully. Did it pay something extra? Well, I guess it did! Big pails of creamy milk, and an

amount of butter that made folks wonder what secret of care there was behind it.

Comfort is nearly always the sign of a good cow. Of course, it is throwing pearls to swine to lavish comfort on a poor cow, but it is worse than that, it is throwing profits to the wind, to keep a good cow without it. And we should keep no other kind if we want to get on the sunny side of dairying. I have often thought that if cows were built so they would explode and blow the end out of the barn every time they were kicked, or go to pieces when left out in cold wind or rain, there would be more money in keeping them; much more if they had a disposition to bite a leg off the man who tried to milk them when tormented with flies and heat. We would guard against these things; we would spread ourselves on cow care and keep cows worth it. Their value would grow accordingly until maintenance of fertility and easy money would join hands to paint things golden on the farm.

The silo is another sign of a good cow. Sometimes a pretty worthless scrub may get between the silo and the separator, but, on the whole, the silo seems to be an outward sign of an inward desire for better stock. It is working out that way; wherever a silo goes up, improved quality and care of the dairy herd follows. A live farmer quickly discovers that there is more money in feeding silage to a good cow than to a poor one. The silo clears the way to two cows kept at a profit where one was kept as a doubtful venture before. That means a number of things pleasant to contemplate: richer acres, higher yields, contentment and happiness "down on the farm," exactly where they ought to be.

No cow will be a good cow just because she has the build of one; she may have as



Some of the signs of a good cow

much pedigree as a dozen dukes, she may be typed as a dairy cow so strongly that the very switch of her tail sounds like the music of a cream-separator, but if she does not get the proper feeding and care, her owner will not get the profits; watchfulness, attention to business, working out the fine points, bring success, but it is a paying venture for the farmer to make. Very little fertility goes to market in the cream-can or butter-roll; it stays on the farm, and any way of doing that which promises good returns looks like opportunity. That is exactly what dairying is, and a prosperous-looking farm is the never-failing sign of it.

WILLIAM JOHNSON.

Pointers for Rough Driving

YEARS of experience in driving throughout the rough regions of Wyoming and other portions of the West have resulted in Col. J. L. Torrey of Fruitville, Missouri, devising several unique, simple and useful appliances in connection with his harness and vehicle. For example, instead of using a neck-yoke of complicated pattern, he simply has the central ring of the neck-yoke included in the clasp over the end of the tongue, so that the tongue does not project beyond the neck-yoke and thereby furnish a place for the lines to catch and become tangled. Another advantage is that, in case a trace comes undone, his neck-yoke does not fall to the ground, but, instead, the vehicle is pulled by the neck-yoke until a stop can be made. The ring is also included in the clasp on the neck-yoke end, so that there is no possible obstruction upon which the lines can catch. The neck-yoke from end to end is the exact length of the doubletree from center to center of the singletree, with the result that each horse handles the tongue and pulls the buggy from corresponding centers.

The singletrees used by Colonel Torrey are attached to the doubletrees with a double clevis, so that, in case the bolt holding the singletree breaks, the singletree will still be held on the doubletree, in place of falling on the hind feet of the horse and undoubtedly causing a runaway. The singletrees extend

to the right and left sides, so that they are of the same length as the hub of the vehicle, so that in passing a tree or gate-post, if the singletree does not touch the obstruction, there will be no possibility of the hub catching. The hooks are fastened in the end of the singletree in such a manner that nothing is left free to become tangled, and if a tree is struck, they simply rub past, instead of becoming tangled and twisted. These hooks are so made that they cannot become unhooked unless the trace is turned sideways, and, best of all, there is no chance of their wounding one of the animals. A hammer strap is fastened to the rear of the doubletree and to the front of the tongue, so that if the bolt breaks the doubletree will not become detached from the tongue.

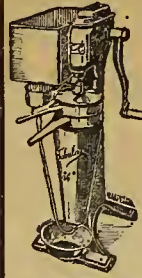
The stay-straps used by Colonel Torrey are not attached directly to the tongue, but extend from the doubletree to the axle, so that if the tongue should break from the axle it will still be held in approximate position by the stay-straps until the team can be stopped. In place of the curved tongue which is usually found on buggies and light wagons, this practical countryman utilizes a pole which is absolutely straight from the axle to the neck-yoke. His reasons for advocating the straight tongue are that if the tongue is of curved construction and the doubletree is placed at the point of the curve or in front of it the result is that the exertions of the team are to a large extent wasted, as the harder they pull, the greater is the strain on their necks, and as a result the horses' necks become so sore on top that they bear the weight of the neck-yoke with difficulty.

The ordinary curved tongue is so high that in case a horse kicks over the tongue he immediately squats down and breaks it. On the other hand, where the straight tongue is used, the same horse, that kicks over the tongue, will be able to step back to his original position without injury. In addition, where the curved tongue is used, if one of the horses chances to fall down, he is liable to arise with the tongue in part on his back so that the harness will be seriously disarranged and the animal may become so frightened that he will run away.

The harness used by this experienced horseman is also simplicity and effectiveness personified. He employs a snap on the near side of the throat-latch and belly-band, leaving the adjustability to the buckle on the opposite side.

The center ring, at the crossing of the checks between the horses, is not carried solely on the lines, but is also attached to the hame by means of an adjustable strap or cord. The breeching and trace-supports are all provided with turnbacks, so that there is no place upon which the reins can catch. The trace-carrier in the breeching-ring goes through a loop in the tug or, if chain tugs are used, through a link in the chain, with the result that the traces will never get under the animals' feet, even though they are not hooked up.

Where pole-straps are employed, snaps are placed in the front end of the pole-strap, so that they will snap in the ring in the end of the neck-yoke, instead of being placed over the end of the neck-yoke, with the result that the pole-strap pulls straight between the horse's legs, instead of shifting about on the neck-yoke. On the other end of the pole-strap is a ring to which the flank-straps are fastened. Ordinarily, the flank-straps are so long that when a horse is kicking at flies he frequently throws his foot over the flank-strap. By making the pole-straps longer and the flank-straps shorter than the animal's leg, it will be impossible for the horse to kick over them. One of the desirable features about these harness appliances is that they are just as applicable to the work-harness as they are to the buggy-harness. GEORGE H. DACY.



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Farm Notes

Language of the Windmill

By G. Henry



WINDMILLS have a language all their own. They sing with joy, they croak dismally. And their song or groan tells the story of the family living under their protecting winds. Windmills are so useful, so essential, so valuable, so important, that we may well listen to them. We may well try to interpret their harsh croaking or blithe singing. Windmills have a right to advise with us, for they are of us, in prosperity or adversity.

We set them to work and become dependent upon them. True, we got along without them; but once they go to work for us we become quite convinced that we cannot do without them. They water the cattle and irrigate the garden; they save us many an hour of laborious pumping and save us many a dollar spent, or to be spent, for "porous plasters" to cure aching backs.

Listen to the groan:

"My partner (meaning 'my owner,' of course) struggled hard to raise the money to buy me, and now that he has me he takes no interest in my welfare. He is glad enough to avail himself of my work, but he does nothing to keep me in shape to do that work. I need clothing and food—paint and screws and oil. One of my wings is loose and will soon fall to the ground and be smashed if my partner doesn't take time—a mere matter of a few minutes—to climb up here and drive a screw which became loosened during the last big wind—for he carelessly left me at the mercy of a wind which I am not supposed to withstand. I can't stand everything! And look at our farm: fences down and cattle thin and barn-doors hanging all askew."

Then the song of joy:

"See me whirl and hear me purr. Watch me fill the trough in fifteen minutes. See my pretty face, clean and bright, for yesterday I had a new suit of white, with red trimmings. Look at the sleek cows and roly-poly colts and calves which worship at my feet. Hear the women-folk talk about the blessing I have been. See how cheerfully I respond to every demand made upon me. I am cared for and I care."

Happy windmills are on happy farms. Unhappy windmills are on unhappy farms. Windmills are unhesitating character-disclosers, gossips if you will. Dilapidated windmill, scraggy farm. Busy, singing windmill, fat cows and green fields.

Singing windmills conduce to singing in the kitchen. Where you find groaning windmills, you find groaning women in the kitchen, groaning or lazy or inefficient men in the fields.

Farmers who have kept their windmills in a singing condition sometimes buy automobiles; but such is the irony of fate that it often happens that the possession of an automobile makes a man forget how he came to be able to buy the chu-chu car.

Keep the Quail

I COMMENCED to fight for conserving the "Bob-White" family a year ago, and will continue as long as I live, or as long as I am permitted to listen to "Bob-White" calling, calling, for his mate that never comes.

I know that the quail family is rapidly disappearing all over the country, and I know the causes. I emphatically state that the bird-dog is the quail's great enemy. I have met with some contradiction from bird-dog owners, but most of them agree with me that more birds are destroyed annually by the dogs than are killed through the winter season with the deadly automatic gun. I was raised on a farm, born there, here in Texas, and have grown up associated with nature. The birds and beasts were my earliest associates. Some I learned to love, others to hate. I have a special affection for "Bob-White" on account of his semi-domestic nature. We had plenty of quail until the advent of the bird-dog, and now where we used to see thousands you can see but one occasionally. Here in Texas the boy who sowed the grain and tilled the soil is not allowed to trap, but the man and the dog is permitted to kill twenty-five birds each day for sixty days. When I was a boy, I was a successful trapper, but never caught that many birds in one day in my life. I am now growing old and have no desire to trap, but "fond memory brings the light of other days around me," and I wish to treat a boy as I would be treated if I were a boy again. Now, I want to build up a sentiment in favor of restocking the country with quails, and in order to do this, every dog in the country that will hunt quails must be restrained during the sitting season. I know that the dogs catch the mother bird on the nest, eat her eggs or catch her young. I received a letter to-day from Mr. H. P. Attwater, industrial agent for the Southern

Pacific Railroad, which gave much information, gathered by the National Committee of Audubon Societies regarding the value of many kinds of birds in destroying insects. This statement gives the quail as the farmer's best friend and protector. To me this is good as far as it goes, but I want to save the quails for the quails themselves. Now, good friend, join in this campaign, and let's stop this unnecessary slaughter.

If I could, I would do away with the bird-dog altogether, not that I am an enemy to the dog, but I am opposed to his habits. The Indian had sense enough to kill only as many buffalo as he needed, but when the white man came on the scene, he slaughtered as long as one could be found. Have we not improved enough in a century to know better? GEORGE R. DAVIS.

A Cart Worth Making

THE idea, here suggested, was prompted by my knowledge of conditions on, probably, three fourths of the farms in the United States, where any considerable number of cattle or horses are kept.

No matter whether you feed plain ensilage, cut corn-fodder, cut hay, or a mixed feed, there are long rows of mangers to be filled; and that means hundreds of steps to and from the source of supply; and weary, heavy-laden steps they are.

Why not save those steps by having the source of supply always with you? The little truck, described in the drawings, will do just that. It is planned for use in entries and stables, but can be used in many other

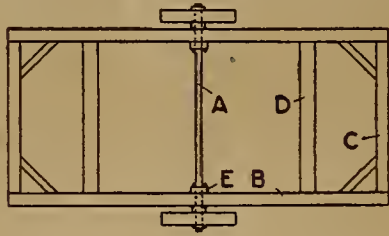


FIG. 1

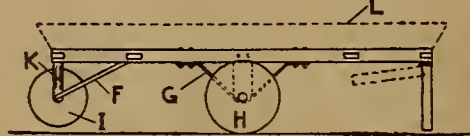


FIG. 2

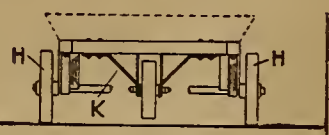


FIG. 3

places. The drawings are for a truck five feet long and two and one-half feet wide; but the dimensions can be changed to suit your conditions. The central axle carries the weight. The end wheels are under the center, and are raised so that when one end wheel bears weight, the other is three to five inches from the floor.

This permits the truck to be swung around corners as if on a pivot. You can do away with the end wheels by attaching a three-by-three-inch post under each end, short enough not to interfere, and long enough to support the weight when standing; but while it is less labor and expense to make with posts, it is not nearly so satisfactory. Anyone that can use the saw and square intelligently, should be able to make this truck. Of course, the iron parts must go to a smith, unless you have a forge.

If you are so fortunate as to have wheels and the short, central axle, you are half done. If you cannot do better, make wheels from doubled boards, crossed at right angles and well nailed (Fig. 6). Strengthen the center with broad iron plates, with holes through them suited to the spindles to be used.

For wheels, made in this way, a very good axle could be made of two-inch galvanized iron pipe. These wheels should be protected by light tires. Eighteen inches is high enough for the main wheels, and ten or twelve inches for the end wheels.

I am not giving any positive rules, because one must be guided by his resources. One may use cultivator-wheels, and another may cut down old buggy-wheels. I do advise the use of a light, tough, well-seasoned lumber.

Of course, if you are willing to pay for a good article and will take this plan to an intelligent wagon-builder, you will be better pleased. But even a crude article will save money, time and hard labor. Also, on most farms, it would be a time-saver in cleaning stables and for various other purposes.

By studying all the figures, and remembering that each letter means the same piece in each figure, you will find the scheme an easy one.

Fig. 1 is top view of frame.

Fig. 2 is side view of go-cart.

Fig. 3 is end view of go-cart.

Fig. 4 is center axle and frame upright, looking from end of go-cart.

Fig. 5 is side view of upright, showing how attached to axle, and the supporting brace irons.

A, center axle.

B, frame sides of 3x4 wood.

C, frame ends of 3x4 wood.

D, 3x4 crosspieces, to which end-wheel iron braces are attached.

E, central uprights, resting on axle and supporting frame (B). Made from 5x5.

F, iron braces, from crosspieces (D) to end-wheel axles.

G, main iron braces from B, supporting axle.

H, central wheels.

I, end wheels.

K, iron supports of end wheels, from C to spindle.

While I offer various suggestions to meet the requirement of all, I favor the use of one end wheel and a hinged brace at the other end, as, in hauling manure from stables, the brace can be swung back and the entire load dumped, without loss of time, if the body of go-cart is beveled, as suggested by the dotted lines (L).

Of course, you can make a straight right-angled body, if you prefer, with a removable endgate; but that plan will always be a source of vexation.

The beveled body extends over point of spindle and permits the edge of the body to be brought into juxtaposition with mangers, etc., and does away with all scattering of feeds.

E. A. WENDT.

Concrete Fence-Posts

MUCH has been said of concrete fence-posts—some things true, some things not true. After seven years of experience in experimenting with concrete fence-post machinery, as well as the manufacture of the product, we find some of the following facts to be true:

First, concrete fence-posts are a commercial product. They can be manufactured for a cost of from eighteen to twenty cents, according to the variation of the cost of material in different localities. By adding a profit of ten cents to a post, the user has a reasonable-priced article, and the manufacturer a good profitable business.

Concrete fence-posts cannot compete with the low-grade wooden fence-posts now on the market in price. Wooden posts can be purchased all the way from ten cents up in many localities. Let us compare the two and see the result. The average life of a good cedar post is seven years. Concrete posts last indefinitely and grow strong and more durable with age. I know of some concrete posts which are now carrying their second load of fence-wire, the first having rusted with age until it was necessary to replace it.

Compare a fence of the average gnarly, knotty, crooked wooden posts with a fence built of perfectly round, smooth, concrete posts. With a little care in setting, a fence of concrete posts can be made a thing of beauty and a joy forever to the farmer who enjoys his farm and home. We all know good fences add to the selling price of every farm, and it is what our farms will sell for which makes our credit with the business world.

Concrete fence-posts never become loose in the ground as wooden ones do, they do not swell when wet, nor contract when dry, thus leaving them loose in the ground. A perfectly round concrete fence-post five and one-half inches at the base and tapering to three and one-half inches at the top, when properly tamped in the ground, forms a wedge which will not pull up or heave with the frost. I have seen a line of posts which have stood for ten years just as straight and true as the day they were placed in the ground.

One of the arguments used against the concrete fence-post is its strength. It is true a concrete post cannot be made as strong as a wooden post of the same size, but let me ask a question: "Do we build our fences of six and eight inch cedar posts because we need that amount of strength in the fence, or is it because it takes longer to rot off an eight-inch post than it does a four-inch post?" Concrete posts of the size mentioned above can be made to stand a strain of three hundred pounds on a four-foot cantilever. Is this not strong enough for any fence?

I believe concrete fence-posts have come to stay and that it will not be many years before farmers will be devoting their time during the winter months to the manufacture of their own posts in the barn, in place of going into the woods and cutting them.

Nothing spoils the beauty of a farm more than neglected and poorly put up fences. If the farmer knows that the fence once up would last indefinitely, he would take more pains to have it properly done. Isn't it possible that concrete posts will straighten and improve our fences and beautify our whole country? VICTOR E. ROGERS.

Dry-Farming Notes

PANELS, made with three to five one-by-fours fastened together with suitable cleats at the ends and middle, make a better temporary hog-feeding enclosure than woven wire. Aside from their value in building fences, panels find a ready usage at farrowing-time and may be used to fence hay-stacks away from horses and cattle.

Practical experience is gradually putting sweet clover in the ranks of the useful plants for the dry farmer, rather than shoving it to one side as a bothersome weed. We find that it is more easily grown than alfalfa, will stand at least as much drought and in dry times will furnish forage for the stock. Even after the plant is cut and cured, the cows hunt it out of the wild hay, and after the frost has killed the growing plants, well-kept horses will eat the stalks into the ground. This is the experience of local farmers.

Does it pay to raise hogs? At the present prices of corn and hogs, where the latter are fed out in a dry lot, this is an open question, but if we are to judge from the following experience, there's still money in hogs where they are on alfalfa-pasture.

There were eighty head on a fifteen-acre alfalfa-field throughout the whole season, and fifty pigs from late spring on until the pasture was killed by frost last year. The grain ration was a light one until corn dented, and then all were crowded and the older ones fattened out. The net gain produced through the pasturing season only was an even seven hundred dollars. Counting out the price of the grain consumed (three hundred and twenty-five dollars' worth), we'd have a total, on adding in the value of the hay cut from the field during the season, of nine hundred dollars. This is over two hundred dollars more than the value of the hay crop from an equal area and over four hundred dollars more than the value of a corn crop from fifteen acres of equally productive ground.

Under our semi-arid conditions it's best to go slow with the various renovators recommended for thickening up the stand of thinly populated alfalfa-patches. A few years back, several farmers in our neighborhood bought spike-tooth harrows, and a few others procured Acme harrows. These implements were used one season and were the cause of large areas of alfalfa being killed out. It is a significant fact that a field under similar conditions which has, however, never been renovated, but has been cut after the second shoots start and has never been pastured heavily, has stood the test of fifteen years with a fine stand all through. This is on black loam, clay subsoil (no hardpan). C. BOLLES.

Bacteria and Disease

DISEASES may be divided into two groups, those caused by bacteria or related germs and those not so caused. Among the diseases not caused by bacteria may be mentioned diabetes and Bright's disease in man, milk-fever in cows, azoturia or Monday sickness in horses.

Bacteria produce disease in different ways. Some forms, when they invade the body, remain in one place and produce poisons which enter the blood. In diphtheria, for example, the bacteria grow in the throat and produce a poison which is absorbed by the blood and gives rise to the symptoms of the disease. Another example of such a disease is tetanus, or lockjaw. Bacteria may remain localized and produce disease without the formation of specific poisons, as in the case of lumpy-jaw in cattle. In some other diseases the bacteria enter the blood and grow throughout the body. This happens in anthrax in cattle and typhoid fever in man. Sometimes bacteria grow in the intestines, producing an irritation which results in diarrhea or dysentery. In still other cases bacteria get into wounds or enter the skin through a bruise or a cut and cause the formation of pus. Some bacteria attack only certain organs of the body. The germ which causes hydrophobia, for example, attacks only the brain and nerves. The disease produced may run its course quickly and soon result either in death or complete



Disease bacteria (greatly magnified)

1, tuberculosis; 2, typhoid fever; 3, anthrax; 4, boils; 5, glanders; 6, lockjaw

recovery, as in distemper in horses, or it may produce a disease which is chronic; that is, one that takes a long time to run its course, as glanders in the horse and tuberculosis in cattle. In all diseases caused by bacteria it must be remembered that the disease never can be produced except that the particular kind of organism capable of causing the disease gains entrance to the body, and the most efficient method of warding off disease is to prevent them from getting into the body. R. E. BUCHANAN.

Crops and Soils

Preventing Soil-Erosion

ONE of the most destructive agencies on elevated or hilly land that we have to do with is soil-erosion. The finest particles of the soil are swept away, and in the fields gullies and deep gutters are made. For instance, on our place when the corn was up six inches in one field, the rains descended and then the deluge. About one thousand tons of fine, rich soil was carried down in a hundred temporary rivulets and deposited on an oat-field and on the low land of the corn-field.

Above the farming line, the timber had all been removed. Consequently there was no bed of leaves acting as a sponge to absorb excessive moisture. Had there been such a bed of leaves, a large portion of the unusually heavy precipitation would have been arrested or absorbed, instead of rushing impetuously in a hundred little streams into the valley below.

A neighbor has land adjoining, but he never removed the trees above the tillable land. Consequently he has never been bothered with guttered or rutty places in the hilly land.

Steep places that have practically no grass or weeds to plow down should not be plowed until spring, and then only after a good coat of strawy manure has been applied. That will perform three things: enrich the soil, add humus and act like a sponge to absorb moisture. It is better, under our conditions, to plow about eight to ten inches deep, and that in the spring; for the reason that fall plowing becomes very compact before spring and, in my observation, will not retain nor so quickly absorb the heavy early rains as the looser spring plowing.

Many farmers are afraid to plow deep for fear of washing or erosion. You need have no fear. Plow deep; deeper every time. It is obvious to anyone that a deep-plowed, porous soil will retain more water than a shallow one, hence in nine times out of ten it will not gully or wash down the hillside.

If you never plow deeper than you did at previous plowing, you will have an almost impervious hardpan between the top and subsoil. In it is locked a vast store of plant-food that is not available. To release it from its inert, or dormant, state, it is necessary to get it to the surface, where the rain, sun and dew can make it soluble.

How our land was redeemed from the state in which I found it may be of interest to many. In the first place, I put in corn-stalks and strawy manure and filled fifteen of the deepest gullies. Then I made a grader the width of my spike harrow and caused it to gather ground twenty feet each side of the gully. I aimed to let the ground free right in the depression.

At one place there were nine little mounds; I leveled that by taking the ground into the gutters on both sides.

I also used scoops to cover exposed, rocky and barren spots. It would require four boys and four one-horse scoops and one man to cover one acre in three days. I covered one-half acre six inches deep in two and one-half days. It is a lot of work, viewed from the beginning, but the completed field is well worth the effort, and is necessary only once in a lifetime.

JOHN M. WISE.

Crib-Dried Corn

FROM time to time the agricultural press contains reports of enormous yields of corn, particularly in the South and West. So far as the writer has been able to ascertain, no account was made of the condition of the crop when harvested and no attempt was made to ascertain its true feeding value. In prize contests, a crop whose exceptional weight was due to the excessive moisture that it contained might, and probably often did, win the prize over another crop that contained fully as much dry matter but less water. It has remained for the Bowker Fertilizer Company (a New England concern) to put all contestants in a prize contest on an equal basis by computing the actual amount of shelled corn produced on an acre, figured to a uniform water content of 12 per cent. As a matter of fact, crib-dried corn, up to at least January 1st, contains rather more than 12 per cent. water, judging from figures obtained at the Massachusetts Experiment Station, so that the yields obtained in these New England contests do not form an accurate basis for comparing the corn yield of New England with that of other sections of the country.

Briefly, the method of carrying out the contest was as follows: The corn was grown under rules laid down by the company. The corn was grown on a carefully measured acre. The only restriction in regard to the manner of preparing the soil and caring for the crop up to the time of harvesting was that the only fertilizer used be purchased of the company. At the time of harvesting, the corn was picked and husked and weighed from standing butts under the direct supervision of a representative of the company. At this time an average sample of just 50

pounds was taken and sent immediately, by express, to the company's headquarters in Boston, where it was partially dried, shelled, weighed and a liberal sample sent to the writer, whose duty it was to determine the amount of water-free corn present in each sample. The amount of water-free corn in the 50-pound sample, figured to a 12 per cent. water content, was used as a basis for figuring the yield of the entire acre.

The corn grown was, with a few exceptions, of the flint varieties. While the number of dent corns grown was so small that they need not be considered separately, the evidence was entirely in favor of flint corn for New England. So far as the writer is aware, there is no data available which will contrast satisfactorily the yield of flint corn in this contest as compared with dent corn of other sections.

The contest also showed what might be expected in normal shrinkage of flint corn due to the loss of water and cob. Just how much shrinkage there may be between the crop as harvested and the crib-dried corn is illustrated by the average figures for 1910-11:

	Bushels harvested	Crib-dried corn	Bushels shrinkage	Per cent. shrinkage
Average 1910 crop...	101	72	29	43
Average 1911 crop...	86	64	22	40

Seventy pounds was the weight used as standard for bushels harvested, fifty-six pounds for the crib-dried corn on a twelve per cent. water basis.

In 1910 the shrinkage varied from 28 to 69 per cent., with an average of 43 per cent. In 1911 the shrinkage varied from 31 to 52 per cent., with an average of 40 per cent. While the average shrinkage for the two years is about the same, the extreme variations show that it would not be practical to use average figures for general application.

In 1910 the crop awarded the first prize stood third in yield as harvested, while the crop giving the largest harvest yield stood tenth when figured to a 12 per cent. water basis. In 1911 the two highest yields as harvested were also the highest on the 12 per cent. water basis.

As a matter of fact, corn sold in December will contain over 12 per cent. water. The average moisture content of samples of corn-meal found for sale in the Massachusetts markets in January and February, 1911, was about 20 per cent. It is certainly safe to assume that the corn from which it was ground contained as much. This would bring the average shrinkage for corn sold in the late fall and early winter down to about 30 per cent., but for corn sold the spring following the harvest the average shrinkage would be about as stated.

The cost of raising the corn was not considered in this contest. This would have been interesting, although so much depends upon how the soil has been treated in previous years that it is difficult to make accurate comparisons. New England would like to know what other sections can do when contests are so conducted as to form a uniform and satisfactory basis for comparison.

PHILIP H. SMITH.

Irrigation and Dry Farming

THE large amount of space in newspapers and periodicals being devoted to farming shows that many of our strongest farm enthusiasts are not farmers. Now that public opinion has been focused on the subject, the public should get some sound information along definite lines, because this flowery tommyrot about farming that some editors are handing out will do but little good and tends to disgust those who do know something on the subject.

Last year there were some 14,000,000 acres under irrigation in our country, and there was water enough for 6,000,000 acres more. The government and private companies have already projects under way that will bring our irrigated acreage over the 30,000,000-acre mark within ten years. Already the projects are being opened up faster than the land can be taken care of. Our irrigated area will far exceed even the above figures, because many minor projects, that are not yet planned, will be planned and executed within the ten years.

Opening up irrigated land is even a more difficult problem than opening up a dry farm. The land must be cleared, broken and leveled, and it is a hard task for a regular farmer to accomplish, to say nothing of a city man. I had personal experience along that line last summer. The land on the farm where I worked lay in about as fine a condition as a piece of raw land ever did, yet to get this land broken and get the ground ready for a crop and for irrigation cost about seven dollars per acre. The first season's crop is not a full crop, because the water cannot be evenly distributed; the cost of irrigating the first season is heavy, because the water must be watched constantly, dikes must be shoveled up here and there and a raise shoveled through in other places.

The first settlers in irrigated communities undergo many hardships, and the weeding out of the discouraged, the incompetent and

poor is even severer than in any dry-farming community. The first few years on a new irrigated farm is the time that taxes a man's patience, endurance, ingenuity and bank-account.

Considering that the area of irrigated farms, per farm, is decreasing (which means that more farmers are needed on the land already under irrigation and that the opening up of new irrigated land will demand a half-million more farmers), it becomes at once apparent that it is no small matter to get the man to the land after the water gets there.

The "land shows" and real-estate companies do much toward getting people to the land, but their methods result in innumerable failures.

It seems to me to be an insult to modern science to say that the present methods of securing settlers for irrigated land is good enough.

Considering the fact that irrigation in its modern aspect is a science and that the opening up of new irrigated farms is in itself an engineering feat, it seems wise (to me at least) to draw the attention of young men to the subject, especially students in agricultural colleges. The increase of population in the irrigated districts cannot swing the job, because there are not enough of them. It takes all the best men to fill positions at the intermountain agricultural colleges, and not a few of the irrigation engineers go away to engineer vast projects in Mexico, South America, India and elsewhere.

It would be to the interest of each one of the intermountain and Pacific Coast States to provide their agricultural colleges with funds enough to offer free scholarships to graduates of agricultural high schools in all the States, excepting the intermountain and Pacific Coast States. That is (take Colorado, for example), next year she would offer a free scholarship to the best high-school (agricultural) graduate of every State, with the exception of the States (except Colorado) containing irrigated land. Supposing that each one of the eleven Western States would do the same, that would mean 374 new students annually enrolled in irrigation territory. If advisable, the number could be increased to two or three or more men from each State. The requirement for candidates should be somewhat on the order of the Rhodes scholarship for college graduates. This would be a good way of getting leaders for the new irrigated district. These leaders, coming from the East, would be very influential in attracting desirable settlers from their home communities.

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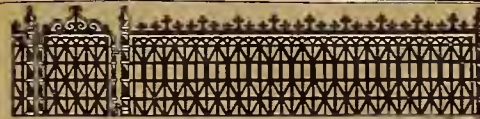
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The Market Outlook

California's Prospects

THE unsatisfactory condition of the condensed-milk industry throughout the country has been strongly felt on the Pacific Coast during the past few months. This has been in the face of the fact that other branches of the dairy industry have been more than prospering.

Western condenseries have never supplied the coast markets with more than a part of the condensed milk used, but on account of favorable dairying conditions have been steadily increasing their output until recently they came into severe competition with eastern condenseries which have a well-established trade on the coast.

The latter refused to relinquish their hold, especially when the market was rather dull in the rest of the country, and to prevent the local condenseries from taking their trade advertised heavily and met any cut in prices of the local producers, so that for a considerable length of time the wholesale prices were close to, or less, than the cost of production.

This war has occurred at a time when market milk trade was in a flourishing condition. Nearly every city on the coast has dairy inspectors out, and consumers are getting a product that is almost above reproach, while the facilities for distribution have developed so as to make the use of condensed milk unnecessary in most places.

Altogether the combination of a dull market and severe competition has been very hard on the condensers, most of whom are skimming a large part of the milk purchased and hardly getting enough to pay the cost of manufacture for the rest.

Since last writing, things have improved wonderfully in California, as spring rains have been as noticeable for their abundance as winter rains were for their scarcity. The total precipitation is still much below normal in practically all sections, and grain and pasture are mostly in very bad shape with no chance for improvement, although along the coast and in a few favored districts the grass is better than usual.

The numerous late, though not heavy, rains have changed probable disaster to the fruit men to an almost certain bumper crop, though where no irrigation is practiced the crop will be short. Of dried fruits, prunes will probably be less than a normal crop. Almonds and apricots have been somewhat hurt by frosts, but will probably average up well, especially the latter. Cherries do not seem to be quite a full crop, but are quite plentiful. Peaches will probably make a bumper crop, as most of them are in irrigated sections, can have plenty of water, and the frost has done them little injury. Pears, apples and grapes also look extremely promising, although there is still chance for a change in prospects of these.

Snow on the mountains is light and is expected to run off quickly, making a shortage of irrigation-water and alfalfa-hay later on in the season. Other hay promises to be extremely short and prices very high. The pasture has been plentiful enough to fatten stock, though flocks and herds will be sold very close. **D. J. WHITNEY, California.**

Beef Prices Fluctuate

WITH each week, until recently, has come a new and higher price for good, fat cattle, and it seems that they are now high enough, or were, at least, until the recent slump sent them downward to what may be a rather long-continued depression. The first arrivals of grass cattle also sold very high, so high that it is hard to see where cattle-feeders are going to get supplies, as it is evident the packers will be forced to buy everything carrying flesh, at prices that will make the feeder sit up and think: The government reports show prospects for a great quantity of roughage.

So far there are no signs of weak spots in cattle, and even sheep for feeding purposes will be much higher than they were last year.

December corn is quoted now on the Chicago board at over sixty cents, which means fifty-cent corn all over the corn belt, and in all this talk about the high cost of beef it is hard to figure cheaper beef with corn at this price and feeders at six cents. Many of our agricultural papers are talking of raising beef on high-priced land. The time will come for this, but it is not here yet. We are only in the betwixt-and-between stage. At present it is hard to figure a profit on raising a calf on two hundred dollars per acre land if the cow is kept for the calf only. One of the simplest ways to help the situation would be for the "dear public" to boycott veal, but unfortunately the higher a thing gets, the better it tastes.

The demand for silos is very great, and there will be more of them put up in western Iowa this year than in any previous year, and this will eventually help solve, at least, part of the beef problem. I am quite satisfied that we cannot now afford to pasture cattle on high-priced land when the same land will keep at least three times as many cattle if the crop from it is put into a silo. It will also increase in fertility if properly managed. I will handle about forty per cent. more cattle this year by having a good silo. Jumping from three hundred and fifty head to five hundred head.

The cattle from the range country will be good beef this fall, as they have had no surplus of rain, and the grass is dry and good, and this makes hard beef.

W. S. A. SMITH, Iowa.

The Midsummer Hog-Market

THE usual changes which occur in the hog-market in midsummer have arrived. The heavy corn-fed finished barrows are fast disappearing. Coming in to fill this vacancy are large numbers of sows that have been sent to market as soon as possible after pig-weaning, most of them thin and shrinky, being right off the grass. The market has gone to a fresh-meat basis, so the 180 and 220 pound finished hog commands a premium, and a one-dollar difference between light shippers and heavy packers can be expected before long. Stags have lost their



Do not sell them too soon

premium, as "grass widows" furnish the same kind of meat at a lower figure. These sows have increased the average weight, but have lowered quality.

Daily supply has direct control of quotations, and at every run prices drop, and at every day of short receipts prices promptly advance. The large packers are heavy buyers, but do not support any advances. Order-buyers give the market but little support, as the East continues to send its crop to market as light-weights. With the exception of Omaha and Sioux City, there has been a falling-off of receipts. As soon as this decrease reaches these two markets also, prices are expected to advance in proportion to the decrease. General high prices tempt the growers of all kinds of live stock to liquidate as fast as possible. While this method insures them their profits, it does not lessen the meat shortage, and present conditions will continue for some time.

There is a bright outlook in the foreign demand for the winter season in lard, as Europe is short in that provision. Current trade in the provisions-pit is dull, and current demand for hog products other than fresh meat shows a curtailment. The time is approaching when the corn-crop prospects will begin to influence the prices. At present the outlook is for a crop up to the average on an increased acreage over last year. This will soon make growers hold their stock to eat some of the crop. **L. K. BROWN.**

Price Well Established

THE prices of sheep and lambs are pretty well established at the rates quoted in our market letter of July 20th; and seeing that the number of sheep in the country, of all classes, and specially of breeding ewes, is far less than usual, it is probable that no lowering of those prices need be looked for this year. Had it not been that the excessive cost of feed during the past season caused an immense quantity of unfinished stuff to be forced on the market, tending greatly to lower its general tone, the average prices would have been higher, and since crops of all kinds that are used for the feeding of live stock are generally quite bountiful this season, there will be no excuse for shipping unripe stock, or for scrimping the rations necessary to obtain perfect fitness.

It is unnecessary to follow the daily fluctuations of the market caused merely by the greater or lesser supply; and it would seem more useful to employ our time in considering how best to take advantage of the trade next spring and summer, when prices are bound to be at least fairly remunerative, if not very high.

From June, 1910, up to the end of that year FARM AND FIRESIDE went very fully into

the consideration of how best the farmer of from fifty to one hundred and eighty acres could avail himself of the great advantages offered by sheep culture. For the use of those who make the mistake of not filing their farm journals, the following estimate of the probable cost and profit of a small flock of breeding ewes, condensed from the issues of the paper during the period mentioned is here given.

The raising of the lambs up to the yearling stage is the best paying and safest line of sheep culture for the small farmer, since that is the period of the greatest development: they grow and fatten with amazing rapidity, and are subject to fewest diseases at that age.

Good grade ewes of any of the Down breeds or of Rambouillets from two to three years old are best for this purpose. They can be bought now at from four dollars to four dollars and fifty cents in good flesh, but not fat. For this business a cross with a thoroughbred Shropshire ram produces the best results. A pure-bred native, two to three years old, of really high class can now be bought at from thirty dollars to forty dollars. This, with twenty-five ewes, which are quite enough to start with, will, with interest at six per cent., make the capital invested about one hundred and sixty dollars. Let us see what will be the probable cost of maintaining this outfit in the highest state of efficiency.

During the months of July and August and up to the early part of September the ewes should make a good living on the stubbles, cleaning up, killing weeds and fertilizing the soil, at no cost to the farmer.

From the middle of September, during October, while the ram is with them, and on till yarded, and especially if the pastures have dried up, they should be fed as much green forage and hay as they will clean up, and a daily ration of one pound of oats or cracked wheat, linseed-meal and bran, one third of each. Cost, about one dollar.

When in the yards—probably early in December and up to lambing in February or March—one and one-half pounds of hay, a few sliced turnips and a little alfalfa, corn or other silage, with the same grain ration reduced to one-half pound. Cost, one dollar.

While supporting their lambs, until leaving the yards for pasturing, from one and one-half to two pounds of the same or similar balanced grain ration, with all the roots, or silage, and hay that they will clean up. Cost, one dollar and fifty cents.

When on pasture or forage crops, up to weaning their lambs, a ration of about one pound of grain should be given. Cost, seventy-five cents. Total cost of feed, four dollars and twenty-five cents.

Against this cost they should shear at least seven pounds of wool, worth sixteen cents per pound, or one dollar and twelve cents. The value of their manure is worth one fifth of the cost of their feed, or, according to the best authorities, eighty-five cents, making a total of one dollar and ninety-seven cents. This leaves the cost of keeping each ewe, for one year, two dollars and twenty-eight cents, or, for twenty-five ewes, fifty-seven dollars.

The cost of grain, oil-meal and bran is estimated on the average prices for the last ten years. Forage crops are estimated at, at least, fifteen dollars per acre and hay at fifteen dollars per ton.

In our next letter it is to be hoped that so good a showing of the probable profits of this little investment can be made as will induce a few of the readers of FARM AND FIRESIDE to make at least a trial of sheep culture. **JOHN PICKERING ROSS, Illinois.**

Honesty

The story is several centuries old that Diogenes, the philosopher, used to go about the streets of Athens in the daytime with a lighted lantern looking for an honest man. It must have been a joke, for surely there were many such men in that famous old city.

If Diogenes were alive now, we could furnish him a long list of honest, reliable people—the advertisers in FARM AND FIRESIDE. We have carefully investigated them, and guarantee that they will give you a square deal in all business transactions. In writing to them, please mention FARM AND FIRESIDE.

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The FARMERS' LOBBY.

The Government's Irrigated Farms

By Judson C. Welliver

OF COURSE, your memory—if it runs far enough back—recalls the good old prairie-schooners that used to trundle past the farm or through the village, bearing the "Kansas or Bust" legend? And, equally of course, you remember that most of the pioneers of those days, the early eighties, went bust and came back in that state of mind and finance?

Yes? Well, the reclamation business, is in exactly the same stage that prairie farming was then. Uncle Sam is not worrying so much about it as he would if he hadn't seen so much of the disconcerting experiences of his nephews and nieces in other fields of enterprise; but, none the less, he is having his own troubles with his irrigation projects.

The old boy has about \$70,000,000 invested in some twenty-five irrigation projects. They contemplate making first-class farming area of about 3,000,000 acres, scattered throughout all the States from the Dakotas, Kansas and Nebraska, west to the Pacific. This region that Uncle Sam is putting under water is expected to care for a family of five on every forty acres; that is, for a total of 375,000 people. But this does not consider the number who will be kept busy merchandising for these farmers; hauling things by rail to them; raising live stock for the irrigation farmers to "finish"; mining low-grade ores that couldn't be worked unless civilization were brought closer to them than it was before the irrigation projects brought it.

On the whole, it is fair to say that these government irrigation projects represent the potentiality of a million of population, housed and made independent producers.

What We Have Been Seeing

FOR nearly ten years we have been seeing pictures of Edens in the desert, of wonderful farms made possible by reason of the application of water and brain to sections of the desert. We have studied the works of the government irrigation press-agent, and have come to believe that anybody who farms anywhere outside the irrigation region must be a crass, crude, unimaginative person incapable of appreciating the really best things of earth. Wherefore, it comes with something of a shock to us to learn that the farmers are not sticking to the irrigation farms; that after a season or two they are leaving in hordes; that the money our Uncle Samuel invested in his enterprises is not coming back as it was calculated to do, and that the whole irrigation business is more or less stalled because folks who try it don't get rich so fast as they expected.

The irrigation-farming business has passed beyond the rainbow stage. The pot of gold isn't there. Even the rainbow doesn't disclose itself to casual observers who thrust their hands in their pockets and wait for it to appear.

It is almost exactly ten years since, in June, 1902, the Newlands Reclamation Act became law. It provided a unique scheme of irrigating sections of the desert. The government was to do the work, build dams, conduits, and the like, and put the water on the lands. The lands were to be patented to homesteaders who would contract to pay a certain amount per acre for the use of the water. This amount averaged about four dollars per acre per year; the settler who paid this water rental for five years got a patent to his lands, and at the end of a second five years the irrigation plant was turned over to the community dependent on it. Thereafter, the government passed out of consideration. The settlers must take over, manage, maintain and be responsible for their dams, conduits, tunnels and all the rest. No more paternalism, no more Uncle Sam to pay the bills if there was a break or a drought or a flood.

What is to Be Done With the Money?

THESE payments were calculated with a view to making the payments return the entire sum the government had invested in the works. This amount, being returned, was then to be used in carrying forward more irrigation works, which in turn would reclaim more land that should be sold to settlers on like terms; and so on. Same old story of raising more corn to fatten more hogs to sell for more money to buy more land on which to raise more corn to fatten more hogs to sell for more money to buy more land to raise more corn to— you know that old story of the development of everything from Ohio to the coast. The irrigation scheme was just the same. The government didn't want any interest

on its money, asked no profits, worked no graft. All it wanted was to utilize the waste waters and the desert lands, and to get a lot of people to live out there. It was an endless-chain scheme, by which the government proposed to reclaim a young empire by the simple loan of its credit for a term of years. The money must all come back to the treasury in time.

It will, too. I don't think there is any grave doubt about that. But meanwhile there is going to be more or less grief for people who get the Garden of Eden notion in their heads and expect to make irrigation fortunes overnight without working.

"You've Got to Work Like Sin"

IN ORDER to farm in an irrigation country, you need to know a lot about farming in an irrigation country. You can't step off the front end of a street-car that you have been running half your lifetime, invest your savings in a forty-acre water right and a corresponding area of Great American Desert, and expect to become president of a first national bank in forty minutes. You've got to work like sin making a farm out of your patch of sand. You must expect that it will get monotonous, living in a region where it never rains; still more monotonous, if you've been used to farming in a humid country, learning that there's no excuse for grumbling about the long dry spells or the endless rainy seasons. You'll get tired of the dust and the never-ceasing sunshine; until you get some trees and shrubs started, you'll pray unavailingly for some shade.

These are among the troubles that have made the pioneer settlers on the irrigated lands discontented. There's no use denying that they HAVE been discontented. A large proportion of them were what might be called professional pioneers; people looking for a new experience, a new sensation, a new chance to make some easy money. They read the stories about fortunes in the irrigation country, and didn't look at the other side. These are adventurous folks, many of whom started in a business they knew nothing about, with the firm conviction that they would at least make a good speculation out of the increase in the value of their lands. They didn't know how to farm, much less to farm in an arid country. The rule was, that they didn't have capital enough to see them through the period of getting experience. They remained as long as possible, hoped for something to turn up, but didn't turn it up with enough energy and confidence. When at last they had reached the end of their resources, they gave up the struggle, allowed their claims to be canceled and drifted back home or into some other new region: just exactly what the "Kansas or Bust" pioneer of thirty years ago did in a large proportion of cases.

Those That Make Good

BUT this stage must be observed in the development of every new country. The pioneers of this class are followed by another class who put in some more money, and if they have enough tenacity and capital, stick and win; if they haven't, they remain a while, and give way to the third group, who commonly can be relied on to make good.

Some of our irrigation projects are now in the hands of this third class of settlers; and they are all making a fine showing. Take the Salt River project, in Arizona, one of the very largest of the government undertakings. About 155,000 acres of its lands are now under cultivation, and this will be increased to 200,000. The government spent about \$10,000,000 in the works, and last year the products of these lands were worth about \$6,000,000; this year they will go much higher. This project succeeded to various private enterprises, none of which had succeeded, because there was need for expensive works. The government stepped in, took over various private water rights, and the like, and built the immense Roosevelt dam. That dam created a storage lake that became the foundation of the whole region's prosperity.

But the real reason why the Salt River proposition got on its feet so soon and had been a success almost from the start is that it had the right kind of settlers. They knew just what to do with irrigation lands, they did it, and they succeeded. Director Newell, of the

Reclamation Service, who is a philosopher as well as a bully engineer, tells me that those people are making money, stacking it up in their banks, buying out the amateurs who don't understand the game and making this region an illustration of the best possibilities of irrigation farming

More or less of land under all the projects is now getting water, and people are in demand. The best advice to give, in every case, to people who have thought of trying the new system of farming, is to investigate with the utmost care before jumping in. Don't believe all the fairyland stories you read in agricultural papers that are made for folks in brownstone city rows to read, and, on the other hand, don't get discouraged if you hear a frightful tale of woe from somebody who has tried it and failed. Don't go out to an irrigation farm unless you are sure you have enough capital to take care of it right. You can't do better than to write to Frederick H. Newell, Director, Bureau of Reclamation, at Washington, tell him your exact situation and ask his advice. He'll tell you the truth, which is more than a lot of real-estate venders could be relied upon to do.

Mr. Newell is just now trying to put a human soul into the government management of irrigation. It isn't an easy task. "We are making an effort to help everybody who is entitled to help," he explained to me. "When a man falls behind on his payments, we have his case examined carefully. If it develops that he has been loafing around the village, finding fault with the government, grumbling about the weather and forgetting to attend to the business in hand, we don't try to save him; if he can't make his payments, we let his claim be canceled. It would be useless to extend special consideration to people of that kind. On the other hand, when we find a hard-working man who has had hard luck for want of capital, or on account of sickness, we don't push him; we give him time, advice, instruction and encouragement.

Take Just What You Can Handle

IHAVE in mind the case of one Dutchman, a hard-working little chap who had worked desperately, but was not able to keep up his payments. He had a family that promised to be useful in his efforts, but they had had a good deal of sickness. He was behind in his payments. The solution in his case was simple. He had taken forty acres, which is the limit a single settler is permitted to homestead. Our investigators decided that there was nothing wrong in his case, except that the task was too big: he was utterly without executive capacity. He could do, and do very well, the things he could turn his own hands to, but he couldn't manage anybody else, not even his wife and children, and get results out of their work. So we induced him to relinquish half of his claim and confine himself to a twenty-acre tract. He is now making a success of it, and there is every reason to believe that he will get bigger crops from it than he ever would have got from forty acres."

Taking a general survey of present conditions on the irrigation projects, it may be said that there is no occasion for alarmist stories about the failure of the great enterprise. Ten years hence, these lands will be worth vastly more than now. They represent opportunity for people to live on farms, and yet to have the general advantages, in a social way, of more dense populations. Schools will be better, and will be secured sooner, than was possible in the new prairie States, or will be possible, say, in Canada. Social conditions generally will be preferable, simply because it will be possible for people to have neighbors within such distance as to make them available.

Go With a Fixed Purpose

MR. NEWELL advises that in going to an irrigation settlement it will be well, after making sure of your own resources and disposition to stick through the pioneer stage, to look, next, into the character of your neighbors.

Don't go into the irrigation country for a speculation. Go, rather, with the purpose of staying and making a farm. With that as a basis, there will be opportunities for speculation, incident to the comings and goings of less persistent settlers than yourself. But the first requisite is to have a fixed purpose of your own to stick to it and win without any speculation about it.



"It's a shame Mother has to have such a shabby, ugly room"

How Olive Discovered the Antiques

By Sophie Kerr Underwood

Illustrated by G. H. Mitchell

OLIVE lay in the hammock and tried to get things straight in her head. "Somehow," she thought, "I didn't remember that everything was so old—and so shabby. The furniture looks so heavy and queer—" Then she heard voices in the sitting-room.

"Where's Olive?" asked Aunt Isabel briskly. "I haven't seen her yet. How's she seem, Mary? So many girls nowadays come home from boarding-school with such finicky notions in their heads I always think it's kind of a risky business to send 'em. No, don't call her yet. I'll see her before I go. She won a prize, you said?"

Then mother's gentle voice answered hesitatingly. "Why, Olive's—well, Isabel. She's grown, too—she's taller than I am. All her clothes have got to be lengthened, and some of them she'll never be able to wear any more. However, they'll do for Virginia. Yes, she got a prize, twenty-five dollars for the best essay. Her father was so pleased. I think Olive's a little tired. I guess all the excitement at commencement was a little too much for her—she's growing, too, you know."

"Hmp," sniffed Aunt Isabel. "Where's that sleeve-pattern you said you'd lend me?"

"Here 'tis," said Mrs. Dana; "I'd allow a little more fulness, I think. It's a little scant. Olive's asked one of the teachers to visit her, a Miss Marcy. She is assistant in literature, and Olive took the greatest fancy to her. She's coming next Saturday week."

"Is that so?" said Aunt Isabel. "Would you mind if we went into the dining-room where I could lay this out on the table. I want to see just how it goes on the goods."

The voices died away, and Olive came back to her thoughts. Of course, it was lovely to be home, but she did wish things looked a little better, a little more up-to-date. If Miss Marcy wasn't coming, it wouldn't make so much difference. Then the front door opened, and Mrs. Dana came out. "Oh, here you are, Olive," she said. "Aunt Isabel's here and wants you to come in and see her. She'll be going in a minute." She spoke a little deprecatingly. She knew there was but little love between Olive and Aunt Isabel, for sixteen and a half is apt to be very intolerant of the wisdom of forty, unless there is tact to soften it, and Aunt Isabel had no tact. But Olive rose obediently and put her arm through her mother's very tenderly. Everyone in Ridgeton said that Mrs. Dana's children just worshiped her, and it was true.

After Aunt Isabel had gone and dinner was over, Mrs. Dana picked up the work-basket and went out on the shady side porch. You could get a glimpse of the river from there, and a climbing rose covered the porch trellis and showered down fragrant pink petals. It was a family saying that mending and darning were always to be done on the side porch, because it was so cool and attractive there it sweetened the disagreeable task. As Mrs. Dana's needle flew in and out of the stockings, she was wondering, mother fashion, about Olive and the change that the year at school had made in her. She had gone away a little girl and come back a young lady, yet was not old enough to comprehend the transition, and it made things hard for her. But her mother was wise enough not to try to help her, except indirectly. Presently Olive came out, too.

"My, but your mother's glad to have you home again," smiled Mrs. Dana at the tall girl. "Sit down, dearie, and we'll have a good talk."

"Mother," began Olive, "you know what I've been thinking about? Well, it's the house. I do wish we could fix it up a little before Miss Marcy comes. She had such a pretty room at school, all mission furniture and stenciled hangings and covers, so artistic and odd. She had copper jugs, too, and a lovely green pottery bowl. It looked so pretty."

"I know it was pretty if it was fixed up like that," said Mrs. Dana diplomatically, "for I saw just such things in all the nice furniture-stores when I was in the city last spring."

"Everything's so old here it looks as though it came out of the ark," went on Olive. "Even the vases are those queer, old-fashioned flowered china things, and those old Chinese jars in the parlor are regular monstrosities. But I suppose Father would never hear to our putting them away and getting something new."

"No," said Mrs. Dana, "I don't believe he would. His grandfather's youngest brother brought them home. He was a sea-captain. I've read that people like the old things nowadays, Olive. One of the magazines had a picture of an old table that they said was worth over a hundred dollars, and it was exactly like that one in the parlor."

"Oh, mother, it couldn't have been the same," declared Olive, with the assurance of ignorance. "My, if it was, I wish we could sell the table and buy new things."

"I'd let you buy some new things," mused Mrs. Dana, "but money's so scarce, and your year at school cost a good bit, and there's next year to think of."

"Yes," broke in Olive, "and Father doctors every pauper in the neighborhood for nothing. Why, Mother, I don't believe half of his patients pay him a cent."

"But you wouldn't have him any different," said Mrs. Dana, and then her eyes and Olive's met, and they laughed a little.

"No, of course I wouldn't," said Olive, "Father is just—Father, and if he went around worrying poor people for money, I'd hate it."

"That's it," said her mother. "But now about the house. I don't see why we shouldn't fix up your room a little. I believe I could afford a brass bed if you want it." She hastily put away the thought of the foulard silk she had intended to get for herself.

"Oh, could you, Mother," cried Olive, "and I could use my prize money to get a little white dressing-table, perhaps, and some pictures, and some cretonne for cushions and curtains."

"Sh-h— isn't that the door-bell? We'll talk some more about this to-night."

Alas for all their plans. That ring of the bell brought Mrs. Dana a telegram summoning her to the bedside of her sister, who lived in a town some fifty miles away. As there was only one afternoon train, she packed and departed in haste, but remembered, on leaving, to thrust into Olive's hand a little roll of bills with a hurried, "There's the money, dear. You fix up your room as you like it," and was gone.

The flurry of the departure being over, Olive went up-stairs to lay her plans for the great changes. At the first landing, she glanced into her mother's room and paused. The door had been left open, and everything was in disorder and confusion. Olive went in and began to hang up and put away the clothes and straighten the bed and set things generally to rights. And as she worked, she thought, "It's a shame Mother has to have such a shabby, ugly room," she said to herself indignantly. "I wish I could fix it up as well as mine while she's gone. But I know there won't be money enough for that. Miss Marcy will be here in ten days, too, and I do want my room to look nice, even if the rest of the house is queer. I wish Mother hadn't had to go to Aunt Sarah's. It's just one of her spells, and anybody'd be able to attend to her, only she thinks nobody can do it but Mother. Those curtains are almost in rags—and so's the rug—and those awful dingy old pictures and things. I wonder—" she caught her breath and stood stock still as the great thought came to her. Why shouldn't she fix up Mother's room instead of her own! The more she thought of it, the more the delight of it took hold of her. She dropped her dust-cloth and ran to the head of the kitchen stairs.

"Anne," she called to the cook, "come up-stairs a minute and help me move some things, will you?"

And that was the beginning. Together she and Anne laboriously tugged at the big four-post bed until it came to pieces and was safely stowed in the attic. They carried off the old-fashioned dresser, too, and all the old pictures. They took down the curtains and took up the rug and scrubbed like mad. Anne, fired by Olive's zeal, worked like a Trojan, and in two days they were ready for new furniture. Then Olive went forth to spend her little fortune.

The paper was green, so she bought first a green-and-white matting rug and scrim curtains of white figured with little green clovers and with white ruffles. The brass bed she found she could not afford, so she reluctantly bought an iron one painted white with brass trimmings and of simple design. She set the couch across the foot of the bed, in emulation of Miss Marcy, and made a cover for it of green denim and recovered the worn pillows with fresh rose-flowered cretonne. Then she found a little white-enameled dresser and a green wicker stand "marked down" and bought them,

but they brought her perilously near the end of her money. A cretonne cushion for her mother's rocker, two photographs of pictures her mother loved, in simple brown frames, and a green pottery vase, as near like Miss Marcy's as she could find, completed it, and when Olive had filled the vase with pink roses and looked at her finished work, she felt that she could never wait until her mother got home to show it to her. Luckily, she did not have to wait long, for Aunt Sarah had recovered from her "spell" as suddenly as she had been seized, and Mrs. Dana returned that very evening.

"I'll just go up-stairs and take my things off and put my bag away," she said when the first greetings were over, "and then I'll come down and see about supper. Did you get your room fixed as you wanted it, Olive?" she called as she started up-stairs. "I've been thinking about it so much and wishing I was here to help you." Olive danced after her, "Yes'm, it's fixed," she said, trying to make her voice sound natural. "I'll help you unpack, Mother."

Mrs. Dana threw open her door and stopped transfixed. "What in the world!" she cried. "Why—Olive—Olive, child, what have you been doing!"

"It was such a shame your room looked so," explained Olive, mixing things up in a happy confusion; "and I could only afford to get a matting rug and an iron bed, Mother; but you won't mind, will you, Mother—and you do like it, don't you?"

"Like it!" said Mrs. Dana, "like it! And you've been and spent all that money on my room instead of your own, and your prize money, too?" She sat down in the nearest chair, and Olive flung herself upon her and wrapped her with strong young arms.

"I liked to, Mother," she said. "I wanted to. And you do like it, don't you?"

"It's beautiful," said Mrs. Dana. "It's just beautiful! And I'd lots rather have a white bed than a brass one. And new pictures! And a new dresser!" She stopped. The moment was too tense. There were tears in her eyes and in Olive's. She held out her arms. "But the best of all is my dear child!" she cried passionately.

Three days later when Miss Marcy came and Olive took her over the house, her first word was, "Oh, my dear, what ravishing furniture! That wonderful high-boy! And a pie-crust table! And, oh, what magnificent Chinese jars—why didn't you tell me about them? Didn't you know that I'm just crazy over antiques? Why, these things are priceless!"

"I didn't know it," said Olive, meekly. "They are all such old things and they've always been in the family. The whole house is full of just such old stuff. Just wait till you see my bedroom."

Mrs. Dana had heard it all. "Show her my bedroom, Olive," she said. "That's the nicest in the house." And mother and daughter looked into each other's eyes and smiled.

The Old Woman

By E. M. Rodebaugh

LONG, lean, skinny, cadaverous, for half a century she had cooked and washed and patched for a large family; now she's gone. And the sign on her tombstone says, "At Rest," and I hope it's so.

"Why?" do you ask? Well, for one thing, she got but mighty little rest or recreation here, and it's time she was resting somewhere.

Couldn't they afford to take time off to rest? Oh, yes; it was one of the richest farms in the community, the work was always "forward," the crops were always in first, the ambition of the entire force seemed to be to beat the other fellow, beat him on time, skin him on a deal, get the best of him any old way.

The words "At Rest" signify a want of rest, signify a lot of labor, signify want and privation, a hungering for the better things of life, the things which make life worth living, the little pleasures, and for courtesies and kindness which mark the line between "the Old Woman" and "Mother."

And do you know, I half believe she was glad to get away from a place where the money which might have gone for some of the conveniences and latter-day necessities was spent for more land, to raise more corn to feed more hogs to buy more land: the money which might have bought the little inexpensive household necessities, the kitchen-sink, the bath, the heating and lighting systems, instead was put into land to increase the prestige of "the Old Man." *Requiescat in pace.*



SUNDAY READING



The Truer Progress

By Aubrey Fullerton

A NEWSPAPER artist who wished to draw a picture illustrative of the enterprise and progress of his city, chose as its setting a large motor-car being driven down-hill at a furious speed. In front of the car was a sign bearing the magic word, "Progress."

That is not a true picture of progress. Not speed and recklessness, not size and noise, are the marks of real progress, and down-hill running is but poorly symbolic of getting ahead. Progress is rightly represented by no such idea as this. It would better be illustrated by the picture of a youth afoot, climbing slowly but steadily toward the top of a hill. It is in the quiet, persistent, long-continued effort—the effort upward—that progress really consists, and not in the loud and sensational dash that cannot long endure.

It makes much difference what one's idea of progress is. If we may judge from the lessons of history and the lives of men, it is a thing of definite aim and painstaking work thereto, not a wild and showy dash. Many have tried the method of the artist and have thought they were making progress, but time has shown that they were wrong. The temptation put before our Savior was to use the quick method, but it was his choice to advance by the way of the cross.

Blows Struck by Folded Hands

By Edgar L. Vincent

Blows dealt by hands that are folded? How can that be? Listen! You have seen it yourself.

On one side of the fence a field of corn waves its hands, beckoning you to come and see what a fine prospect there is for a good harvest. The rows are as clean as a hound's tooth. Not a weed to be seen anywhere. How green the stalks and the leaves are as they flash in the warm summer sunshine! Well you know that in a few weeks more, when the green shall have been changed by the mysterious workmanship of nature to the golden yellow of harvest, the ears will hang heavy all over that field. The granary of the man who planted and cared for that field, will be filled to overflowing.

Just over the fence another field of corn stretches, but what a sight! Weeds knee-high. The corn-shoots struggle hard to keep up with those which grow so near, but the leaves hang limp and weak in the hot sunlight. Where is the man who should be out putting the fire of life into those corn-plants? Ah! There he is, standing with folded hands, or taking that little more of slumber which marks the line between success and failure, between a full crib and an empty granary. Down through the years comes to you a good description of what is happening here:

"I went by the field of the slothful, and by the vineyard of the man void of understanding; and, lo, it was all grown over with thorns, and nettles had covered the face thereof, and the stone wall thereof was broken down."

Nature does many things for you and me, things we never could do for ourselves. You see her stately steppings every time you set foot out of doors. In field, in forest, in flood, she shows her power and her willingness to be everything she can for man; but there are some things she will not do. She sets her foot down at the boundary-line and says, "Thus far I will go, and no farther! Now you must take up the work and go on with it!"

Nature never runs a plow; you and I must do that. If ever a cultivator goes up and down through the rows of corn, we must do it. Sometimes it seems as if Nature loves to give us the hardest tasks. She sows the weed-seeds right in among the corn and the wheat, and laughs at us when we protest and say, "Don't do that, please! It makes us so much work!" Listening, can we not hear her answer, "But I love to see you work! That gives strength to your arms and puts fire into your eye! 'In the sweat of thy brow' was spoken for you just as surely as it was for the first man back in the garden." And there is no appeal from this decision. If the field of corn is kept clean, we must do it. If the earth is kept soft and mellow between the rows, you and I will be the ones to do it. Nature would pelt the soil down as hard as the road; she would send

the rays of the sun down to bake it like an oven. It is for you and me to stand guard over our crops and battle with weeds, bugs and worms till the harvest is ready for the reaping. And if we do not do this, nothing is more sure than that "Poverty will come as one that travelth, and want as an armed man."

But after Nature has seen the shine of our metal, she gives exceeding precious rewards. How she does delight to honor the man who goes out bravely and does his part without whimpering! Full corn in the ear, great fields of grain waving white for the reaper, barns bursting with hay and fruits, cellars rich with the best the fields can yield! It seems as if Nature cannot do enough for him who gives his best to the task assigned to him. Listen: "Prepare thy work without, and make it fit for thyself in the field, and afterward build thine house!"

Afterward! To-day the toil, the planning, the striving, for the best there is to be had. Afterward the better home, the surplus, the little nestegg stored away for the day when it is cold and stormy. This is what gives life its real joy. It is what counts and helps us to ward off the blows struck by folded hands!

The Highest Joy

By A. M. Gordon

RUSKIN tells us that whenever the medieval artists painted a cloud they always placed an angel in it, also. This is a beautiful symbol of God's remembrance of His children in adversity. It is often difficult for us to realize that He stands within the shadow, but devout Moslems believe that personal afflictions and illnesses are tokens of heavenly care. I have read of an old dragoon in Cairo who had not been ill for years, and who began to feel that God had forgotten him. But one day his arm was in a sling and his face wreathed with smiles. "All right now; been broke me the arm. God 'member me." This is doubtless an extreme view, but it cannot be more erroneous than the belief that God forgets His children when they are in trouble.

We know that death cannot be an evil, for it is universal. And so sickness and sorrow are universal. If we do all we can to preserve the health of our families and our own health, and then sickness comes to us in spite of our efforts, we shall find that the love and sympathy of both God and men are ours in trial and sorrow.

A young mother who lost her first-born, her only child, was so unreconciled to her loss that she would not allow it to be buried, but carried the little body around in her arms, hoping to find someone who could tell her how to restore it to life.

A seer who listened to her entreaties said:

"My daughter, you have only to go out among the people and ask for a grain of mustard-seed. Anyone can give you a seed, for it is the commonest herb that grows. But this seed must come from a family that has never known sorrow."

The young woman joyfully laid her dead baby down before the seer and said:

"I will come for it soon, and bring the means by which it shall live again."

But she did not come for many hours. At last, just at nightfall, she appeared. There was no hope in her face, but there was resignation. Taking up the body of her child, she said:

"Though I have searched all day, I could find no one to give me the mustard-seed. I know now that my sorrow is the sorrow of all humanity. I will bury my little one and take what life has for me."

And the seer said, "Daughter, go in peace."

Yes, there is a wonderful kinship which results from bearing common sorrows and trials together. We become members of a great family—brothers and sisters who can help and comfort each other.

"But what a sad world, nevertheless!" someone exclaims. On the contrary, out of the sorrow there is born a joy which far exceeds the joy of unclouded sunlight. Olive Schreiner, in her "Dreams," gives us a beautiful allegory illustrating this.

When Love had wedded Life, Joy—First-Joy, they called it—was born. It was a beautiful thing, and they thought it would be theirs forever. But one day when they awoke from sleep, First-Joy was gone. Near them, in its place, sat a little sad-eyed stranger.

At first they did not notice it, but walked apart, weeping for their lost Joy.

Then the little stranger slipped a hand into one of each and drew them closer, and Life and Love walked on with it between them. And when the way grew harder, and they bruised their feet on the rough rocks, or fainted with the heat, or almost perished with the cold, he healed their wounds, sucking out the poison with his lips, and even in the desert found water in the holes in the rocks with which to refresh them, or warmed their hands against his own little heart.

So they went through the dark and through the light, always with that little, brave, smiling one between them. And at last they came to the place where that strange old woman, Reflection, sits. She steals light out of the past to shed it on the future. They asked her why they had lost their First-Joy.

Asked the wise old woman: "To have it back will you give up that which walks beside you now?"

And they both cried, "No!"

And the wise old woman answered, "What you once had is what you have now! You have not understood that you could not carry that radiant thing unchanged into the desert and the frost and the snow. What walks beside you is the Joy grown older. The grave, sweet, tender thing—warm in the coldest snows, brave in the dreariest deserts—its name is Sympathy; it is the Perfect Love."

HOW MANY OF US

Fail to Select Food Nature Demands to Ward Off Ailments?

A Ky. lady, speaking about food, says: "I was accustomed to eating all kinds of ordinary food until, for some reason, indigestion and nervous prostration set in.

"After I had run down seriously my attention was called to the necessity of some change in my diet, and I discontinued my ordinary breakfast and began using Grape-Nuts with a good quantity of rich cream.

"In a few days my condition changed in a remarkable way, and I began to have a strength that I had never been possessed of before, a vigor of body and a poise of mind that amazed me. It was entirely new in my experience.

"My former attacks of indigestion had been accompanied by heat flashes, and many times my condition was distressing with blind spells of dizziness, rush of blood to the head and neuralgic pains in the chest.

"Since using Grape-Nuts alone for breakfast I have been free from these troubles, except at times when I have indulged in rich, greasy foods in quantity, then I would be warned by a pain under the left shoulder blade, and unless I heeded the warning the old trouble would come back, but when I finally got to know where these troubles originated I returned to my Grape-Nuts and cream, and the pain and disturbance left very quickly.

"I am now in prime health as a result of my use of Grape-Nuts." Name given by Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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

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



Message Bearers Ancient and Modern

Pheidippides, the most noted runner of ancient Greece, made a record and an everlasting reputation by speeding 140 miles from Athens to Sparta in less than two days.

Runners trained to perfection composed the courier service for the transmission of messages in olden times. But the service was so costly it could be used only in the interest of rulers on occasions of utmost importance.

The Royal messenger of ancient times has given way to the democratic telephone of to-day. Cities, one hundred or even two thousand miles apart, are connected in a few seconds, so that message and answer follow one another as if two persons were talking in the same room.

This instantaneous telephone service not only meets the needs of the State in great emergencies, but it meets the daily needs of millions of the plain people. There can be no quicker service than that which is everywhere at the command of the humblest day laborer.

Inventors have made possible communication by telephone service. The Bell System, by connecting seven million people together, has made telephone service so inexpensive that it is used twenty-five million times a day.

Captains of war and industry might, at great expense, establish their own exclusive telephone lines, but in order that any person having a telephone may talk with any other person having a telephone, there must be One System, One Policy and Universal Service.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES**

Every Bell Telephone is the Center of the System

For Comfort and Utility Try This Garment

A Lesson on How to Make It, by Miss Gould

THERE are a great many women—busy women—who prefer wrappers to house-dresses for general home wear. They find that dresses, no matter how loose and comfortable they may be, always have belts that draw them in closely at the waist. Then, when the busy house-cleaning days come around or even the ordinary work has to be done, these neat-looking dresses have a great strain put upon them. They are apt to tear every time the arm is raised to dust in high places and so do not prove practical.

In the evolution of dress, the wrapper has not been forgotten, and nowadays it is even more comfortable and attractive looking than in the past. What was called, years ago, a comfortable wrapper always meant a hideous-to-look-at one. The old mother Hubbard, with its square, unbecoming yoke and full body hanging straight, looking like a sack, was by no means an attractive garment. Then, too, there was so much material in it and so many gathers that they were in the way.

The model pictured on this page is a semi-fitted *princesse*, just sufficiently form-fitting to be graceful and yet loose enough to make it possible to stretch one's arms without pulling any part out of shape. It is an ideal garment for the busy woman to use in the house for general wear. Then the fact that it buttons straight up the front is another good feature.

This wrapper may be made in two entirely different ways. If you want a comfortable neck arrangement, you can have the wrapper cut out V-shape at the neck and wear the square sailor collar with it. There are two styles of sleeves provided in the pattern. The one to use with a low neck and sailor collar is a short, loose cap reaching just to the elbow and permitting of absolute freedom in moving the arms.

Perhaps you prefer a wrapper for cool days. If so, you may use the same pattern and have it high neck with a small turn-down collar. There are long sleeves for this wrapper, sleeves that fit the arms well but are by no means tight.

The pattern, number 2079, Wrapper in Two Styles, is cut in eight sizes, for 32, 34, 36, 38, 40, 42, 44 and 46 inch bust measures. You see we have not forgotten the large woman who wants to look neat in the house and yet finds it almost impossible to buy ready-made wrappers that will fit her. The long, graceful lines in this pattern should be especially becoming to that type of woman.

The pattern envelope contains nine pieces, which are lettered as follows: The front, V; the side front, W; the side back, Y; the back, T; the cap sleeve, A; the upper of plain sleeve, K; the under of plain sleeve, F; the sailor collar, L, and the rolling collar, N. These letters are perforated through the different parts of the pattern to identify them. Our method of lettering the pattern-pieces makes it impossible for anyone to confuse the parts, mistaking one for another. It is particularly good in a pattern of this sort, where the pieces look very much alike, and you might have a little difficulty in selecting them correctly if they were not lettered.

Decide which style of collar and sleeve you intend to use, and put the other collar and sleeve back in the envelope. You may need them for another wrapper. In cutting, lay the edges of the back and of both collars marked by triple crosses (XXX) on a lengthwise fold of the material. Place the other parts of the pattern with the line of large round perforations in each lengthwise of the goods. Cut out all the notches, and mark the perforations carefully before removing the pattern-pieces from the material. Be sure to mark the square perforations, which indicate the waist-line.

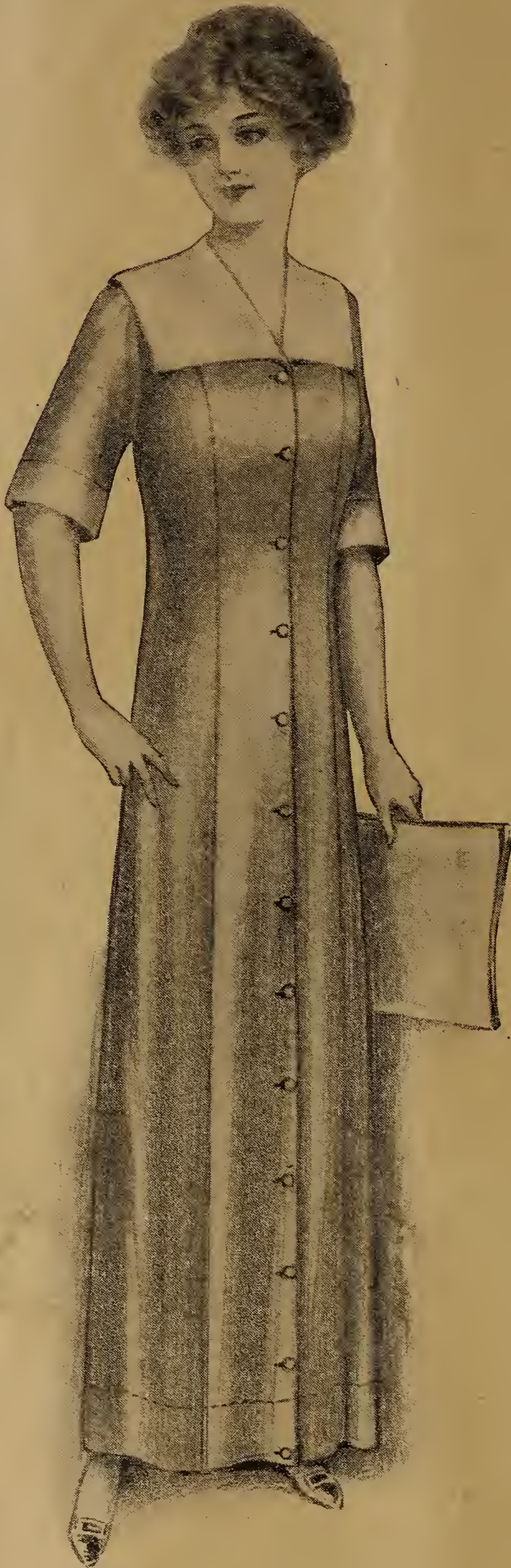
To Make the Low-Neck Wrapper

Join the pieces by corresponding notches. Pin first at the notches, then match the extreme upper and lower edges, also bring waist-lines together. Pin at these points. Then pin in between, placing the pins quite close together.

Pin only one seam at a time, and baste that seam before pinning another, because the seams are long, and the pins are apt to fall out. Place the wrapper on a table while you are doing this part of the work. The garment is long, and the curved edges of the long, narrow sections may pull out of shape while you are handling them.

Turn a three-inch hem at the lower edge of wrapper by lines of large round perforations. Baste as near the lower edge of the hem as possible. Turn in the upper edge of the hem three eighths of an inch. Be careful not to stretch this edge.

Place the wrapper flat on the table wrong side up, and pin up the hem. Pin about half a yard at a time, and baste that half-yard before pinning any more. Small darts will form at irregular intervals. These should be basted flat and well pressed. If you find that the press-



No. 2079—Wrapper in Two Styles

Pattern cut for 32, 34, 36, 38, 40, 42, 44 and 46 inch bust measures. Quantity of material required for medium size, or 36-inch bust, seven and one-eighth yards of twenty-seven-inch material, or five and one-fourth yards of thirty-six-inch material, with three fourths of a yard of contrasting material for sailor collar and sleeve-facing. When the cap sleeve is used, one-half yard additional of thirty-six-inch material is required.

Order from the nearest of the three following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1538 California Street, Denver, Colorado.

Miss Gould will be glad to answer questions pertaining to home dressmaking which may perplex readers of the Farm and Fireside. She will send a personal letter to the writer if a stamped and self-addressed envelope is enclosed.

Direct all letters to Miss Gould's Dressmaking Department, care of Farm and Fireside, 381 Fourth Avenue, New York City.



ing does not hold them in place, hem the darts finely. Use very small stitches, and be sure that they do not go through to the outside of the hem.

Turn hem on the right front of wrapper by notches, and stitch along the edge. Work button-holes in the right front, bringing the front edge of each buttonhole to the center line of large round perforations.

Baste a tape on the under side of the left front along the line of large round perforations. Sew buttons on the outside along this line of perforations, stitching them securely through the tape. Instead of having a hem on the left side, use the material for a lap.

Cut out the fronts at the neck on the lines of small round perforations. Join the sailor collar to neck. Lap the fronts of the wrapper, matching the center lines of large round perforations, and button in front.

It is easy to face the sleeve if you place it flat on the table and attach the facing to it before joining the sleeve. The facing should be applied from the lower edge to the line of small round perforations. Use the pattern of the lower part of the sleeve to cut out the facing.

Turn up the lower edge of sleeve three eighths of an inch, on the outside of the sleeve. Turn in the edges of the facing three eighths of an inch, then baste to the sleeve before stitching. This gives a neat finish and is by far the easiest way to do the work. Gather the sleeve at upper edge between double crosses.

Always hold the sleeve toward you when arranging it in the arm's-eye. With the sleeve in this position, pin it in the arm's-eye, placing the seam in the sleeve at the notch in the front of the wrapper, and bring the notch in the top of the sleeve to the shoulder seam. Pin first at these two corners. Pin the plain part of the sleeve smoothly in the arm's-eye. Draw up the gathers to fit the remaining space, distribute the fulness evenly, and pin well before basting. The adjusting of the sleeve in the arm's-eye is one of the most difficult parts in making a garment. Be especially careful to do it correctly at first. If it is necessary to readjust the sleeve, do not draw out long basting-threads. Cut each stitch and remove the short thread separately. This completes the low-neck wrapper.

To Make the High-Neck Wrapper

Do not cut out the fronts of this wrapper; use the normal neck-line, and join the rolling collar to it as notched. The collar, when finished, reaches just to the center front. The fronts lap three fourths of an inch. At the neck they extend three fourths of an inch beyond the edges of the collar. These lapped edges should be neatly bound. When the wrapper is made of heavy fabrics (either wash-materials or cloth), it is a good idea to hook up this point under the collar, otherwise it may drop down in an untidy way, unless you wear a tie or ribbon to hold it in place.

Join the upper and under of long sleeve. Ease the upper sleeve at elbow between notches. Gather the sleeve at upper edge between double crosses, and sew in the arm's-eye as directed for the cap sleeve.

Three eighths of an inch seam is allowed on all edges of this pattern, except at the shoulder and under arm, where one-inch seam is allowed, designated by lines of small round perforations. This allowance is for a safety outlet at the points where most of the fitting should be done. After the wrapper has been properly fitted and all the seams stitched, this additional seam should be cut off, leaving the regulation three eighths of an inch seam.

If it is necessary to fit the wrapper, do not take in or let out all at one point. The pieces are gracefully curved and perfectly proportioned, so if you change them a great deal, you are apt to lose the good lines. Try fitting a little at each seam if possible.

No doubt your house wrappers are made of wash fabrics. If so, you can use a plain material for the body of the wrapper and a strip or a plaid for the trimming. Some attractive wrappers are made of figured outing flannel, which comes in so many different designs, and have collars and cuffs of plain, heavy linen to match the figure in the flannel.

If you want a comfortable wrapper for afternoon wear, this pattern would develop well in cashmere, soft serge, albatross or cotton voile with a turn-down collar of taffeta and perhaps silk bands on the sleeves to relieve the very plain effect at the hand. Just now lace frills are worn at the edges of long, close-fitting sleeves. If you do not feel that they would be in the way, these frills would add a dainty touch to the wrapper.

However, to my mind this wrapper serves its best purpose when it is made of some washable fabric and worn when a hard day's work is the program.

OUR YOUNG FOLKS' DEPARTMENT

Conducted by Cousin Sally



Autobiography of an Apron

IT WAS a day in March, while in a wholesale grocery store, when a man came and purchased me with a number of other cotton-seed. He carried me home, and in the early spring I was put in a box-shaped plow with a roller at the end and planted. In two weeks I was peeping up, and in three weeks ready to be chopped.

One day, while I was thinking what would become of me, I heard a crowd. I knew they were the choppers and that it is hard to tell which plant is to be chopped. But by luck I was saved. Two weeks later the same crowd came again, I was also saved again. But about a week later a little weed peeped out of the ground near me. I knew I would die with this weed, but a little fellow came along and saved me by pulling the weed up.

In July I was a large plant, being decorated with blossoms, and a month later I was decorated with white cotton ready to be picked. One day as I was lying in the hot sun helpless, I heard the same crowd that kept grass and weeds from me coming into the field. As I was thinking about what this crowd was for, a little girl came running up the row and stopped beside me. She had a flour-sack over her shoulders, and by this time I knew what was up. This little girl picked me out of the bolls and put me in her sack. After about five minutes I found myself lying on a large sheet in the field.

Just a little before dark I was carried to a large barn and stored away. Three weeks later I was carried to a gin, where my seeds were separated. Next, I was baled up in a bale weighing five hundred pounds. Three months later, I was in London, England. I was manufactured and dyed into a beautiful piece of cloth and then shipped to Robin Roe Company, at Philadelphia. In two weeks I found myself in Wilson, North Carolina, lying in J. & D. Oetlinger's store. I was not a very large piece of cloth, so I was put up for sale as soon as I was received at Wilson. One day a lady came in and bought me. She carried me home, and after two days' sewing she had me completed into an apron.

I stayed an apron for one year and eight months, and then I was as smutty, greasy and ragged as anything. I was then packed in a sack waiting for the ragman.

After staying with the ragman for a week, I was sent with a number of the rags to a paper-mill. There I was made into white paper. Then in less than a week I was in a book-store at Columbus, Ohio. Next morning I found myself in a schoolboy's tablet going to school. He drew on me and gave me to his teacher. It was a good drawing, so she kept me a very long time until some mean boys tore me up into millions of pieces to make a pulp map of Australia. I played an important part of its mountains, being one of its highest peaks.

I remained a peak until I was broken off by a little girl who did not care enough to pick me up. I laid there about two hours, when the janitor swept me away with a pile of dirt and threw me in a red-hot stove. When I came out, I was ashes. The janitor carried me and emptied me on a pile of ashes.

The next week I was carried to a garden and put in a deep furrow. It reminded me of the time when I was planted. But to my surprise cotton-seeds were planted on me.

I never was able to get up again, but molded away into dirt.

DANIEL FREEMAN, Age 15,
Eighth Grade, Wilson, North Carolina.

An Excellent Game

IF IT had not been holiday-time, perhaps Bertha would not have found it so hard to do without her playmates. But school was out for the summer, and all the other girls of her age in the neighborhood were away in the country.

"What is the use of having holidays?" she grumbled, her pretty forehead, above the bright blue eyes, wrinkled in discontent. "What can I do, Mother?"

"I have just thought of a splendid game," answered Mother brightly. Mother was never at a loss for bright ideas. "Play you are the housekeeper. All through the vacation you will be 'Mother,' and I will be Bertha. Won't it be fun?"

"But I don't know how to keep house, or how to cook, or—or—anything," objected Bertha, bewildered.

"We will change back again when you want help, long enough for me to teach you," said Mother gaily. "You will think it the best game you ever played. It's time now to see about dinner. Father will be as hungry as a bear after his day's work."

"Oh, yes, Mother. I will be Bertha while you teach me how to get dinner," cried the little housekeeper eagerly. "I want to do it all myself; every bit. Don't touch a thing; only show me how."

So Bertha peeled the potatoes and put them on to boil, and cooked the string-beans, after preparing them exactly as Mother did, and fried the chops, and prepared the salad. She beat the eggs with the wire beater, and made the pudding and the coffee, and laid the table carefully. A bunch of flowers from the little garden in the back yard made a pretty centerpiece. Dinner was ready the very minute Father came home. Mother always was punctual with the meals, which is an un-failing sign of a good housekeeper.

"I'll be Bertha now," Mother said, taking her place at the side of the table.

"All through vacation," cried Bertha with a radiant face. "And now, Mother, I'll be Bertha again, and wash the dishes while you lie down in the hammock and take a nap. This is the finest game I ever played. And I just love to cook."

"There is a great deal besides cooking to learn," said Mother, as she turned to leave the room. "But we have made a capital beginning." ANNE H. WOODRUFF.

News From the Cousins

SO MANY, many letters come to me daily that it would be impossible to publish all of them, but I am going to print parts of some of them on this page. The cousins write me such interesting letters about the work they are doing, about their schools, their pets and, oh, lots of things.

Answers to Puzzles

HERE are the answers to the puzzles printed on Cousin Sally's page in the issue of July 20, 1912. Perhaps you may not need these answers, and have guessed them all. In case you have not, they are here for your benefit:

The Straying Turkeys: Forty turkeys. Enigmatical Trees: 1, willow; 2, cedar; 3, poplar; 4, palm; 5, fir; 6, yew; 7, box-elder; 8, spruce.

New Puzzles

HERE is a new list of puzzles to occupy your spare moments during these hot vacation days:

UNITED STATES HISTORY QUESTIONS

1. Who, than President, would rather be right?
2. Who crossed the Delaware Christmas night?
3. Which first, of Columbus's ships, found land?
4. Who of the Chesapeake had command?
5. Who was it ran at Quebec's fall?
6. Where first was Jackson called "Stonewall"?
7. Who won the battle of Brandywine?
8. With whom did Massasoit dine?
9. Who said, "I'll try, sir," at Lundy's Lane?
10. Who told us to "Remember the Maine?"

BOTANICAL PUNS

Example: A tree: part of the hand.
Answer: Palm.

1. A tree: to bark at.
2. A flower: a collar.
3. A vegetable: to purloin.
4. An herb: a wise man.
5. A flower: got up.
6. A vine: a leap.
7. A shrub: a receptacle.
8. A flower: a certain hour.
9. A tree: to languish.

WRITERS THAT HELP FARMERS

1. Furnishes an area where he may sow grain.
2. Shelters his grain.
3. Carries it to mill.
4. Makes it into flour.
5. Makes it into bread.
6. Furnishes meat for breakfast.
7. Furnishes a fine roast for dinner.
8. Feeds his horses.
9. Lifts heavy weights.
10. Makes a warm head-covering for his wife.

A QUEER VEGETABLE

There is a vegetable which has the power of metamorphosing those who take it.

If Ann takes it, she becomes a useful utensil.

Alice becomes a fine house.
Roxy becomes a substitute.
Rose becomes unromantic.
Her lover becomes a bird.
Ike becomes a fish.
Jim becomes neat and handsome.
Sam becomes an Indian food.

ANAGRAMS

Find an anagram of a State's name in every stanza.

1
In a State where woman suffrage
Is the mode,
We gaily tramped together
A long, cool road.

2
It stretched for many and many a mile,
Nor showed a single rut;
And by its side, perched on a hill,
We both espied a hut.

3
And as we passed, we thought we heard
A sound come from its shade.
A voice it was in sore distress,
A voice that cried, "Oh, aid!"

4
We hastened then and looked within,
And there upon the floor
Our eyes beheld a ghastly sight,
A corpse that lay on gore.

5
Our blood turned cold within our veins,
As through the rafters ran
A ghostly whisper murmuring:
"Beware, for I stone man."

6
Now in a house where spirits dwell
Let those abide who can;
But from that horrid haunted place
We, I and my lad, ran.

The Lyre-Bird

By H. H. Leonard

TEN thousand years ago to-day
The sun was shining brightly.
A gentle breeze
Disturbed the trees,
If I remember rightly.



Now, shoguns popping off like that
Are awful sights to see.
The sight it scared
The lyre-bird
Completely off the key.



The cutest little lyre-bird
That ever ate a snail
Indulged in song
The whole day long,
Accompanied by his tail.

And when a shogun came along
That very selfsame road,
What must he do,
'Twixt me and you,
But, like a gun, explode.



And when he got the key again,
Which wasn't very soon,
Oh! grief profound!
He quickly found
His tail was out of tune.

That's what a little bird told me
As I sat by the fire.
It may be so,
But I don't know.
The bird, it was a lyre.

"Why, how's this?" Father said, as he sat down before the platter of smoking chops. He looked puzzled and not altogether pleased.

"I'm the housekeeper, Father," Bertha informed him importantly. "I cooked the dinner all by myself. Isn't it a fine dinner, Father?"

"It looks fine, certainly," said Father doubtfully, but he looked pleased too, for he believed in girls knowing how to cook.

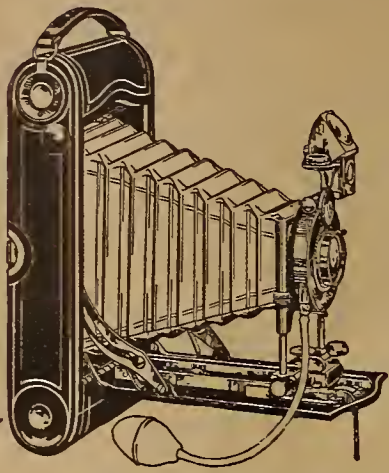
Bertha watched him anxiously as he ate a chop and helped himself to the other eatables, after giving mother and daughter their portions. Father was always deliberate. He was never in a hurry, and he ate his dinner—a hearty one, too—in silence. As the last mouthful disappeared, he handed over his cup for more coffee.

"That's a fine dinner—fine!" he said. "Most as good as your mother ever cooked, and that is saying a lot. How long are you going to be housekeeper?"

Cousin Gladys Stipp of Oregon sent me a letter in April telling me that up to that time she had neither been tardy nor absent from her school. Her school began in September, and she wrote me the fourteenth of April. In 1910 she received a book from her teacher for not being tardy or absent during the term.

I think that almost all of the cousins have a pet of some kind. Cousin Dorothy Spence of Ohio says she has a little black, white and tan rat-terrier dog that will sit up for his food. He can walk on his back feet, but he has not yet learned to shake hands. It's lots of fun to teach a dog tricks. Try it. Cousin Vera Stevens of Maryland has a cat, a colt and a dozen chickens and some ducks for her pets. Cousin Mary Sommerville of Virginia tells me that she and her sister have three black cats named Nigger, Fuzzy and Wuzzy. Fuzzy and Wuzzy are twins, and are as cunning as they can be.

If it isn't an Eastman, it isn't a Kodak.



KODAK

means photography with the bother left out—means that the once difficult processes have been so simplified that you can readily take good pictures by following the perfectly simple directions that accompany each camera.

The Kodak Advantage

Kodaks load in daylight; plate cameras require plate holders which must be loaded in a dark-room. Kodak films are light; glass plates are heavy; Kodak films are non-breakable; glass plates are fragile. Kodak films may be developed in a dark-room but are preferably developed in the Kodak Film Tank in broad daylight. Glass plates must either be developed in a dark-room or loaded into a tank in the dark-room—the film cartridge system is the only practical means of entirely eliminating the dark-room. You may easily develop your own films or may send them by mail for development. Sending glass plates by mail is risky.

With a Kodak there are no extra attachments to buy; it is complete, ready for use. With a plate camera you must buy extra plate-holders or it is of no use you—remember this in counting the cost.

Kodak films give better results for the amateur than glass plates because they have the orthochromatic and non-halation qualities that help overcome the harsh lighting conditions that he encounters.

Plate camera manufacturers advertise the fact that professional photographers use glass plates and that therefore you should. It's true that professional photographers use plates in their studios for their regular work because their dark-room is only a few feet from the spot where their camera stands. For their vacation trips they use Kodaks mostly, just the same as other folks.

Kodak photography means less trouble, better pictures.

Ask your dealer or write us for the illustrated Kodak catalogue. Kodaks \$5.00 and up, Brownie cameras, they work like Kodaks, \$1.00 to \$12.00.

EASTMAN KODAK CO.,
382 State Street, ROCHESTER, N. Y.

Dress-Ornaments in Irish Crochet

By Evaline Holbrook



Ornamental rosette with balls and loops

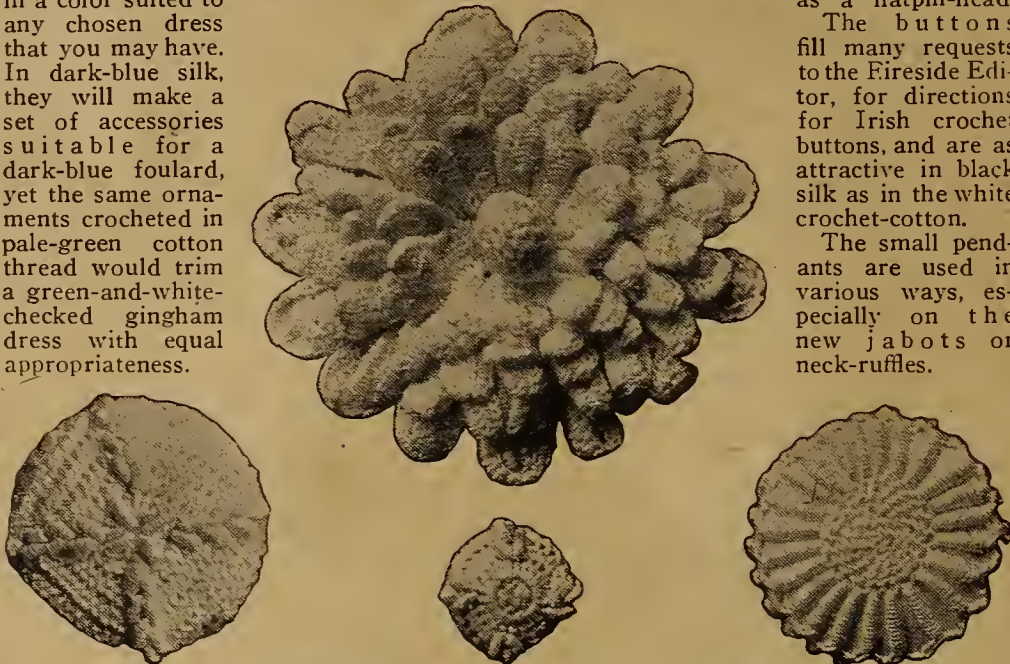
Modifications of the ornamental rosette

ON THIS page you will find a number of the very latest ideas in dress trimmings and ornaments. All of them are made in the popular Irish crochet stitches. Although the photographs are taken from articles made of white cotton thread, they may be made up in black silk thread, or in a color suited to any chosen dress that you may have. In dark-blue silk, they will make a set of accessories suitable for a dark-blue foulard, yet the same ornaments crocheted in pale-green cotton thread would trim a green-and-white-checked gingham dress with equal appropriateness.

THESE ornaments are adaptable to many uses. The rosettes, with their strings of balls and loops, may finish the front closing of a fancy collar, may confine a skirt drapery or adorn a sleeve. Made primarily for a dress-ornament, the many-petaled daisy, or marguerite, has been used as a hatpin-head.

The buttons fill many requests to the Fireside Editor, for directions for Irish crochet buttons, and are as attractive in black silk as in the white crochet-cotton.

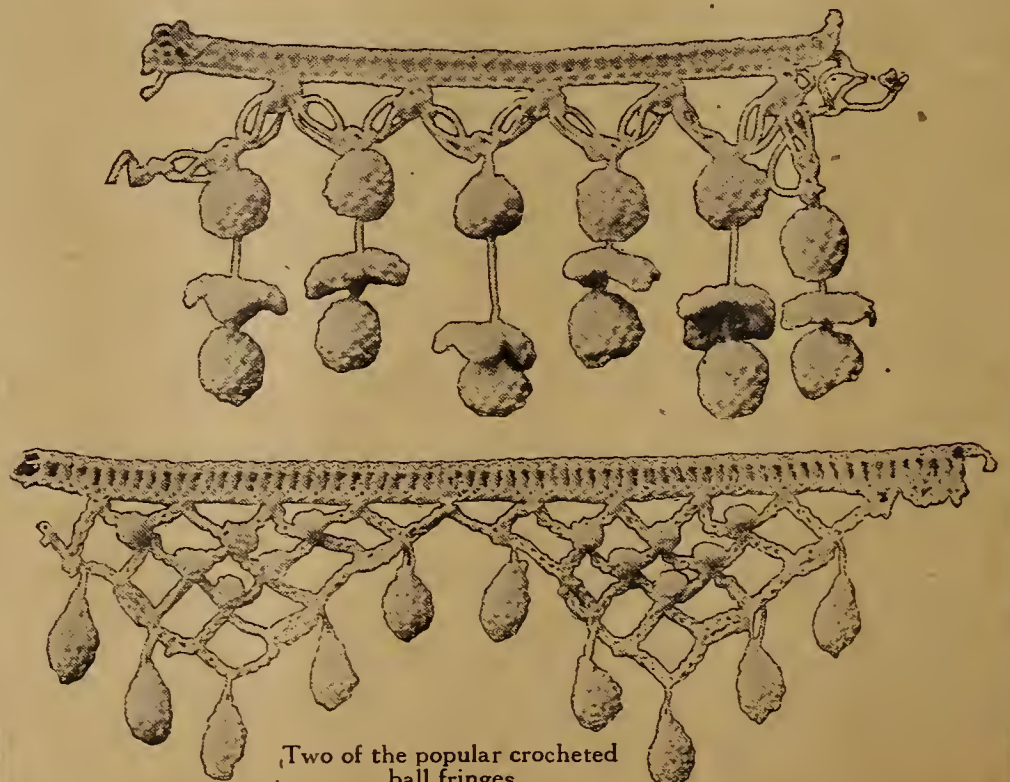
The small pendants are used in various ways, especially on the new jabots or neck-ruffles.



The many-petaled daisy, or marguerite. Button designs in crochet

THE ball-ornament trimmings, shown below, are two of the season's most attractive novelties. So many dresses have been trimmed with these ball fringes that our readers will be glad to know how to make them at home. These fringes are as pretty and useful when made of silk thread as when made of the crochet-cotton.

Directions for making all the dress-ornaments, buttons and ball trimmings on this page will be sent on receipt of ten cents in stamps and a stamped and self-addressed envelope. Address all requests for directions for making these ornaments to Evaline Holbrook, care of FARM AND FIRESIDE, Springfield, Ohio.



Two of the popular crocheted ball fringes

FAMILY RUNT

Kansas Man Says Coffee Made Him That

"Coffee has been used in our family of eleven—father, mother, five sons and four daughters—for thirty years: I am the eldest of the boys and have always been considered the runt of the family and a coffee toper.

"I continued to drink it for years until I grew to be a man, and then I found I had stomach trouble, nervous headaches, poor circulation, was unable to do a full day's work, took medicine for this, that, and the other thing, without the least benefit. In fact I only weighed 116 when I was 28.

"Then I changed from coffee to Postum, being the first one in our family to do so. I noticed, as did the rest of the family, that I was surely gaining strength and flesh. Shortly after I was visiting my cousin who said, 'You look so much better—you're getting fat.'

"At breakfast his wife passed me a cup of coffee, as she knew I was always such a coffee drinker, but I said, 'No, thank you.'

"'What!' said my cousin, 'you quit coffee? What do you drink?'

"'Postum,' I said, 'or water, and I am well.' They did not know what Postum was, but my cousin had stomach trouble and could not sleep at night from drinking coffee three times a day. He was glad to learn about Postum but said he never knew coffee hurt anyone." (Tea is just as injurious as coffee because it contains caffeine, the same drug found in coffee.)

"After understanding my condition and how I got well he knew what to do for himself. He discovered that coffee was the cause of his trouble as he never used tobacco or anything else of the kind. You should see the change in him now. We both believe that if persons who suffer from coffee drinking would stop and use Postum they could build back to health and happiness." Name given by Postum Co., Battle Creek, Mich.

"There's a reason." Read the little book, "The Road to Wellville," in pkgs.

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

BOYS!

GET THIS

Air-Rifle

For Doing a Favor

The King Air-Rifle is a repeater. It shoots 150 times without reloading. It is strong, durable and shoots accurately. It cultivates trueness of sight and evenness of nerve.

These fine air-rifles are provided with pistol-grip, true sights, and are so strongly made that it is almost impossible for them to get out of order.

This rifle is harmless. It uses no powder—just air.

There is no smoke, no noise. Air is plentiful and shot costs but 10c for 1,000.

Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle. Get your subscriptions at once and send your order in early.

BOYS

Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.

Write to-day. Address FARM AND FIRESIDE, Springfield, Ohio

SALESMEN WANTED

Do you want a good position where you can earn from \$1,000 to \$5,000 a year and expenses? There are hundreds of such positions now open. No former experience as a Salesman required to get one of them. If you want to enter the world's best paying profession our Free Employment Bureau will assist you to secure a position where you can earn good wages while you are learning Practical Salesmanship. Write today for full particulars; list of good openings and testimonial letters from hundreds of our students for whom we have recently secured good positions paying from \$100.00 to \$500.00 a month and expenses. Address nearest office, Dept. 187. National Salesmen's Training Association Chicago New York Kansas City Seattle New Orleans Toronto

PARKER'S HAIR BALSAM
Cleanses and beautifies the hair. Promotes a luxuriant growth. Never Falls to Restore Gray Hair to its Youthful Color. Prevents hair falling. 50c and \$1.00 at Drug Stores.

WE SHIP ON APPROVAL
without a cent deposit, prepay the freight and allow 10 DAYS' FREE TRIAL. IT ONLY COSTS one cent to learn our unheard of prices and marvelous offers on highest grade 1913 model bicycles. **FACTORY PRICES** Do not buy a bicycle or a pair of tires from anyone at any price until you write for our large Art Catalog and learn our wonderful proposition on first sample bicycle going to your town. **RIDER AGENTS** everywhere are making big money exhibiting and selling our bicycles. We sell cheaper than any other factory. **TIRES, Coaster-Brake rear wheels, lamps, repairs and all sundries at half usual prices. Do Not Wait; write today for our special offer. MEAD CYCLE CO., Dept. L-83, CHICAGO**

LEARN TO WRITE ADVERTISEMENTS EARN \$25 to \$100 A WEEK
We can positively show you by mail HOW TO INCREASE YOUR SALARY. Book mailed free. Page-Davis, Dept. 25, Chicago, Ill.

PATENTS Send sketch or model for FREE SEARCH. Books, Advice, Searches and Big List of Inventions Wanted FREE
Watson E. Coleman, Patent Lawyer, Washington, D. C.

DAISY FLY KILLER placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 sent prepaid for \$1.
HAROLD SOMERS
150 DeKalb Ave.
Brooklyn N. Y.

Have You Thought of This?

Suggestions That are Sure to Help

Keep Them Out

By E. A. Wendt

IS YOUR merchant intelligent, up-to-date and careful? If he is not, you owe it to your family and neighbors either to give him a push in the right direction or to quit dealing with him and to warn them of their danger.

"The candy may be as dangerous as though it contained pyrogallic acid"

The customer or loafer that is a victim of tuberculosis may spread the deadly disease through an entire neighborhood if the grocer fails to keep bread, cakes, candies, cheese, etc., carefully protected from all dust.

The person having the disease may leave some of the bacilli in the store, and the stir of trade or of sweeping may cause it to find lodgment on some of the exposed stock and so into the neighborhood kitchens to inoculate the families. The candy that your children consume with evident enjoyment may be as dangerous as though it contained pyrogallic acid. Your favorite chewing-tobacco may have been exposed to the dust until it has collected enough of the micro-organisms to add you to the list of White Plague victims. Think of it!

Any food you buy that is ready to use may spread the disease through your family if it is not carefully protected from the flying particles that are invisible to the unaided eye.

If you employ help in the kitchen, make sure that you are not employing a victim of the scourge.

In Baltimore and some other cities, all food that is ready for use must be protected from dust, and the use of cracked china in hotels and restaurants is prohibited. A waiter whose appearance suggests the victim of the disease, is sufficient to turn customers away. People cannot afford to take the risk.

But the duty of chief guardian against the disease appears to fall to the housewife. Her husband and children are reasonably safe if she can keep it out of the kitchen; unless they patronize a careless merchant for their candies, tobacco, etc.

To keep it out of the kitchen means a lot. The stores and the domestic animals are two of the most important points to be guarded. But, at any cost, keep it out of the kitchen.

The Fly-Pest

By Alice M. Ashton

IDEAL conditions do not come in a moment. How can we, without radical changes, reduce our danger from the pest of flies? Try this plan.

First, screen the windows and doors. Cotton netting answers every requirement. It is inexpensive and very effective.

Keep the house clean. Flies do not love cleanliness. Early in the day put the sleeping-rooms in order, and remove all dirty water. When the rooms have been aired and sunned, darken the windows slightly, and the house will be less attractive to flies.

As soon as possible after each meal, put away every bit of food, brush the cloth and floor free from bits of food and crumbs, and if the dishes cannot be immediately washed, throw

a cloth over them after being scraped and stacked neatly. This method removes a very attractive invitation to flies.

Too many wood-houses and back porches present a row of garbage-pails and dishes of food for the domestic animals, and all of these utensils swarming with flies. A most simple and easily applied remedy is a light, wooden cover for each receptacle.

Open closets are still common. Practically the greater part of the danger and offensiveness of these is removed by a liberal use of lime and road-dust, but it must receive daily attention.

Keep the drains clean. Kerosene is excellent to pour into the drains through the sink. If the drain is open also, use lime daily.



"Your favorite tobacco may have collected the micro-organisms"

The Candy Conundrum

By E. Young Wead

How much sugar do you suppose there is in the candy you buy? Uncle Sam's Bureau of Chemistry has been trying to find out and has reached the conclusion that in many of the bonbons

sold in stores no sugar at all is used—just glucose and saccharin, both of which contain poison in minute quantities.

On the highest floor of his chemistry building in the Department of Agriculture, Uncle Sam has established a candy-factory, where all day long a professional candy-maker tries experiments to learn how cheaply he can make good candy out of sugar.

The "professor" began with stick candy, for the "figure man" asserts that more than half the candy sold in the United States is in that form. He tried the common red-and-white variety first, using pure cane-sugar and coloring with a vegetable stain made from cactus. Even warm little fingers do not make the sticks "sticky." They are hard and firm. They cost about six cents a pound, almost twice as much as it costs to make commercial candy, yet not very much if you prepare it at home.

The "professor" has experimented with most of the simple varieties of candy and has produced four kinds of lemon (?) drops, some with a flavoring of tartaric acid, some with citric acid and some with other acids, in order to choose the best. His horehound is something worth tasting and his gum-drops "melt in your mouth." Other soft varieties he has

that must be wrapped in oiled paper. Gradually he is producing caramels, chocolate drops, marshmallows and many others.

There is a yellow-striped candy made wholly of sugar, attractive enough to beguile the pennies from a miser. It is colored with "caramel" or burned sugar, and runs through all shades from cream to saffron. There will be a recipe book giving the best and most economical methods of preparing all the simple candies, and Uncle Sam hopes that every girl will own a copy, which may be had for the asking.



"When the goods are not protected from dust"

How to Make a Fly-Trap

By Jessie Field

THE people of Clarinda and the surrounding country territory in Page County became interested in the nationwide campaign, which has as its slogan the motto, "Swat the Fly." This was early last summer. The Commercial Club held a banquet and discussed ways and means and had a set of slides sent down and gave a stereopticon lecture, showing the people the dangers coming from flies in carrying filth and disease.

This inaugurated the reign of the fly-trap. Many were to be seen all around the business square and around country homes.

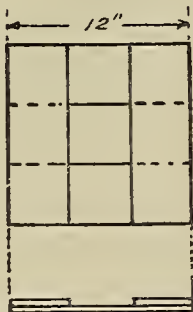
They were always at work too, and the number of dead flies found in them perceptibly lessened the trouble from flies.

Because I know that these fly-traps are really practical and useful from our experience with them here, I am submitting with this the plans and methods of constructing them, as given to us by the extension department of our state college of agriculture. It would pay every home to have one of these and to use it.

Directions for Making a Fly-Trap

The materials necessary for making a fly-trap as shown in the plans are as follows:

Top—4 pcs., 1/2x4x12 inches.
Bottom—2 pcs., 1x4x12 inches.



Top (c)



Bottom (d)

the four braces on the sides, allowing them to project one inch at the bottom for legs. Cover the opening at the top, and place the bait on a plate under the trap, and you will be surprised at the number of flies captured each day.

By bait is meant anything that will attract flies, such as fruit-skins, fish-heads, sour milk, a bit of tainted meat, stale tomatoes, or any refuse.

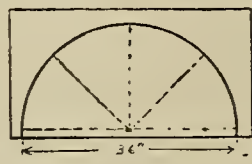
Get fly-traps and fly-poison early in the season, and do not let the pests get the upper hand of you.

Bottom—2 pcs., 1x4x10 inches.

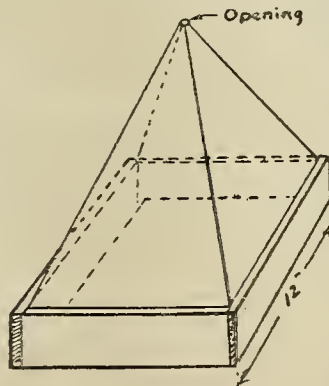
Braces—4 pcs., 1/2x2x27 inches.

Screen—7 ft. of 26-inch wire screen.

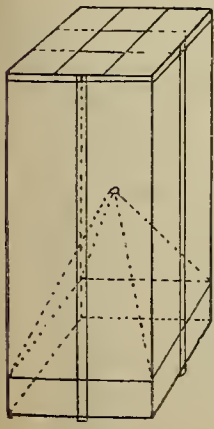
Nail the top pieces together, as shown at c for the top of the trap. Then nail the bottom pieces together for the bottom of the trap. Make the pattern for the cone of paper, as shown at b, and fold on the dotted lines. Cut off the pointed end for an opening about one inch in diameter. Lay the paper pattern on the screen, cut out, and tack around the inside of the bottom, as shown at e. Now wrap the wire screen around the top and bottom, as shown at a, and tack well. Finish the trap by nailing



Pattern for Cone (b)



Screen Cone (e)



Side View (a)

Girl's Watch

Do you want to have one for yourself?

No. 1591



This handsome watch is dainty and attractive and a fine timekeeper. It can be worn with a chatelaine pin. It is guaranteed for one year. You can get it for doing us a favor.

We will send this watch for only six yearly subscriptions to Farm and Fireside at 50 cents each. Each subscriber will receive twenty-six numbers of Farm and Fireside. You can easily earn the watch in an afternoon.

Send the subscriptions to Farm and Fireside, Springfield, Ohio

Fountain-Pen

FOR A FAVOR

Everyone needs this Fountain-Pen. Farm and Fireside has obtained for its readers a wonderful Fountain-Pen. You can get one by doing a small favor.

THE Handy Fountain-Pen is one of the best pens made for usefulness and wearing qualities. It has a fine, well-made gold-tipped pen. It is made of vulcanite, which is like hard rubber. There is a close-fitting dust-cap to protect the pen-point. For steady use this pen is hard to beat. It is easily filled and a filler is furnished with each pen. The special feature of the Handy Pen is its free-flowing ink, requiring no shaking.

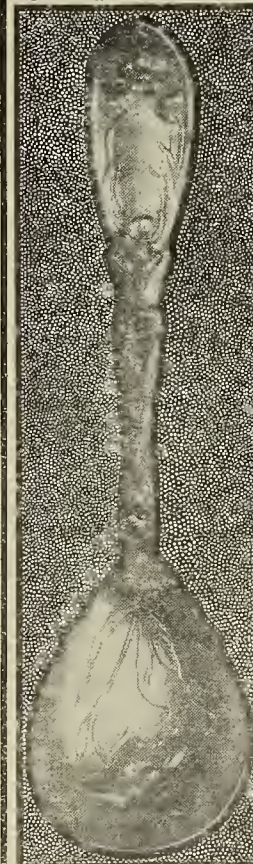
You will be delighted to have so fine a fountain-pen. You will have use for it many times a day. It is the most convenient pen that anyone could have. This one is guaranteed to write well.

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

Farm and Fireside, Springfield, Ohio

This Beautiful Sugar-Shell Your Reward

WE WANT to send you this beautiful Oxford Silver Sugar-Shell, made by Rogers Company. It is made of



heavy plate silver. Entire spoon is six inches long, handle is four inches long, beautifully carved and embossed in the Narcissus pattern and finished in the popular gray French style. The bowl is two inches long and one-and-one-half inches wide, with a beautifully carved and deeply embossed Narcissus in the bottom. It is finished in highly polished silver plate. We guarantee this spoon to be genuine Oxford Silver Plate. If you are not perfectly satisfied, you can return the spoon and we will refund your money. We want to send it to you just to show you how you can earn a set of six Oxford Silver Teaspoons just like it without a cent of outlay, for a slight favor on your part.

SEND ONLY TEN CENTS

and one three-month subscription to FARM AND FIRESIDE, and we will mail you, in addition, a genuine Oxford Sugar-Shell, as described above. The Sugar-Shell will be yours to keep, all we ask is that you agree to show it to two of your friends.

Address all orders to

Farm and Fireside
Springfield, Ohio

The Gift Club



Jean West
Secretary

From Our Mail-Bag

IF SOME fairy godmother should come to me and say that I could have anything I wished, do you know what I'd wish? That she would give me the power to make myself very, very tiny, so that I might slip into the envelope every time I send a letter to the members of our Gift Club and see how surprised they are when they read all about our jolly secrets! I do think that would be the greatest lot of fun!

All morning long I've been answering letters from FARM AND FIRESIDE girls, who eagerly asked how they could earn for themselves all the splendid gifts that I've described from time to time in the pages of FARM AND FIRESIDE. And some of the letters were so funny and skeptical that I couldn't help smiling! It seems so hard for these dear girls to believe what I tell them! If they could only see the stack of mail on my desk from girls who have received these gifts, they would doubt no longer!

Here are a few of the enthusiastic letters in to-day's mail-bag:

DEAR MISS WEST:

I am delighted with all my gifts from the Club. Am so glad I joined! I have earned the embroidery outfit, the novelty outfit and locket and chain. I'm proud of my "extras" too, the pictures and the box of fine stationery! Next I hope to call the bracelet mine. G., Missouri.

And here is a letter from a little Virginian, who has been a member of the Club for several months:

I received the table-cloth O. K., and to say it was lovely does not half express it. Our Club is perfectly lovely, and I'm glad I joined, although I did not have much confidence in it when I first heard about it. I always had a great desire to earn things for myself, and now that I've learned how, I am quite sure I shall always be a member of the Club. The surprise you sent me was just dandy! META M., Virginia.

Now do read this little note!

You can't guess how pleased I was when I got all the presents! Why, I was so pleased that I didn't know which to look at the most. This paper that you sent me is just grand. I don't know how I am going to thank you for all!
EDITH F. S., Vermont.

I received the forks and certainly think they are grand.
E. M. C., New York.

The beautiful gilt clock came, and I am very much pleased with it. I must say I was greatly surprised with the present you sent me, for I was not looking for such a nice present at all, and I wish to thank you for all you have done for me.
Mrs. P. W., Oregon.

You always seem to have the very things we need and long for! The set of knives, forks and spoons arrived, and I am delighted with them. This month I want the toilet-set and box of stationery, and next month hope to get the manicure-set. D. K., North Carolina.

You "girls" who are busy housekeepers will be interested in the following letter:

The vacuum cleaner arrived all O. K. I have tested it thoroughly and find it to be all and more than you claim it to be. My house-cleaning will not be a drudgery any more. I would advise every member of The Gift Club who has not already earned a vacuum cleaner, to set about to do so at once! The lace curtains are elegant, the prettiest I have ever had since keeping house, and the brooch is simply grand. I am more enthusiastic over The Gift Club than ever before!
Mrs. C. M., Ohio.

Now that you have seen how the Club has helped other girls, I hope you will not delay any longer, but will write me at once to find out how you, too, may claim a place in the Club. There are absolutely no dues—nothing but plenty of presents for you and a jolly time earning them! Write to me to-day—at once—for our dainty little booklet! You will enjoy reading it, and I'll send it absolutely free!

Jean West
Secretary, Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.

The Beginning of Self-Control

By W. S. Chandler

EVERY act of reproof or punishment toward a child should have a bearing in the direction of ultimate self-control. Hackneyed, trite, worn out, but true; it is the man or woman of the future you are training. The work of the world requires strong, clear-headed people to carry it on. It is not the uncertain, go-all-to-pieces person that will dominate the situation to-morrow. Self-reliance is a buliding that stands most firmly on a broad basis of good physical health. In this day, when such an enormously large number of people are breaking down on account of overwrought nerves, it is the imperative duty of every mother to take every precaution against it. No detail is unimportant that will help to bring about this end.

It has been said to us many times that a baby is a small animal, so probably we are safe in starting from that point. A young animal wants, in addition to those things nature says he must have, food and sleep, just those things to which he has been accustomed. These things the human baby will have if there is any power in noise. Obviously, then, we must look to it that he forms good habits in the beginning. From the first time the little soft lips touch the mother's breast, the baby's meals must be regular. Do not think because it is a baby, with nothing to do but eat and sleep, that its meals or naps can be either delayed or hurried to suit your convenience. Try such a régime upon yourself if you are not convinced. When the time comes for his nap, put Master Baby down in his bed, darken the room a little, then, being sure he is warm and dry, and his position comfortable, leave him. If he wants to sleep, let him; if he wants to lie still, let him; if he wants to cry, let him. Do not rock him, walk with him, or do any of those foolish things for which he is to be called a nuisance later on.

If mothers would only realize how much of their petting is pure selfishness, they would surely resist the too easily followed impulses. It is such a comfort after all one has undergone to cuddle the little warm body, hold the wee hands, kiss the tiny face. A moderate amount of this is good and right; a young baby must have love to thrive. This is not sentimental twaddle; note the large number of new-born waifs that die in institutions as compared to those adopted into homes. But let it be the exception rather than the rule. Let him learn to recognize fondling as an especial treat. Do not think you will be neglecting him. Denying oneself for another's good is not selfishness. Remember with Jim Fenton that "This child was not got up for my accommodation."

Notice how zealously the breeder of thoroughbred stock of any kind steers his visitors away from the pens of the very young, how he forbids the handling or



Baby must have love to thrive

even the disturbing of the new arrivals. Certainly our babies deserve as much care as puppies or kittens.

Never catch a child up quickly when it is not aware of your presence or your intention. No games of the "Boo" kind, that depend upon startling the child for their fun, should ever be indulged in. It is not pleasure that causes a child to laugh in this case, it is the overstrained nerves that relieve themselves in this way. Do not punish a child in a way that reacts upon his nerves instead of his intellect. You will have your work to do over, as well as a doctor's bill to pay. Even when a child is hurt, do not snatch it up hastily. This is more important than is usually considered.

Children always receive many hurts during the day that call for a mother's sympathy, but are forgotten within a few moments. The fright they get when you cry out and catch them up as if from some great danger will last much longer.



Here's

The Road to Comfort

A vanished thirst—a cool body and a refreshed one; the sure way—the *only* way is via a glass or bottle of

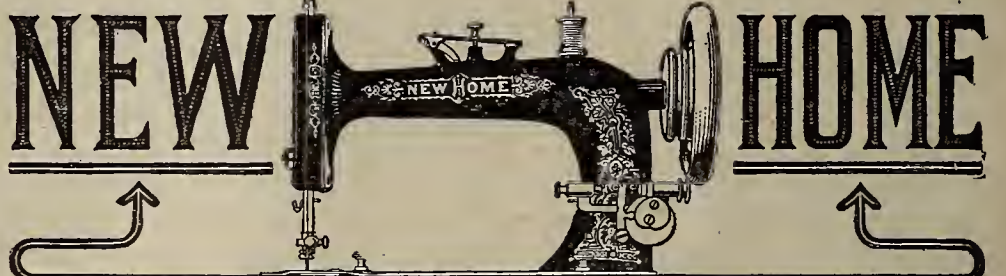
Coca-Cola

Ideally delicious—pure as purity—crisp and sparkling as frost.

Free Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine
as made by
THE COCA-COLA CO.
ATLANTA, GA.

Whenever
you see an
Arrow think
of Coca-Cola.



THE SEWING MACHINE OF KNOWN VALUE

Known the world over for its Serving Qualities.

The only Sewing Machine which is a life asset at the price you pay. Purchase the NEW HOME and you will not have an endless chain of repairs. It is better made, does nicer sewing, easier to operate, and more silent than any other. Guaranteed for all time. Write THE NEW HOME SEWING MACHINE CO., Orange, Mass. for booklet H

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Scores of men and women are making a comfortable living all the year round, and thousands of others are substantially increasing their regular incomes by devoting their spare time to our interests. There is a fine opening right now on our Subscription Staff for a few more ambitious men. Why not join the ranks of those who are numbered among the successful men of their localities? A postal card will bring all particulars. Send it to

Circulation Department, FARM AND FIRESIDE, Springfield, Ohio

\$29.50 Buys This Elegant
Top Buggy.

WARRANTED
FOR
**Five
Years.**

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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, AUGUST 17, 1912



Who will control the Panama Canal—a problem, by Judson C. Welliver, on page 13

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With the Editor

I SEE that a wise New York newspaper has accounted for the high cost of living again. And again the aforesaid h. c. of l. is laid at the door of high-priced farm-lands. The thought of the editor is about like this: Land is worth something like twice as much now as ten years ago. The farmer who uses five dollars' worth of land to make a bushel of wheat, or two hundred dollars' worth of land to grow a steer, must have more for the wheat and the beef than he had to have when the one was grown on a dollar's worth of land and the other on somebody else's domain—probably Uncle Sam's. Sounds reasonable, too.

I fell into that error once. I wrote a wise piece for a magazine, and a Dartmouth College professor who was pitching for the other team saw me off my base and deftly threw me out. Said the professor: "Lands are worth more now than formerly because more can be made from them. If it were true that high-priced lands make high-priced products, the department-stores, which pay more rent per square foot than the farmer pays per acre, would have to ask higher prices for their merchandise than the small stores in the village. As a matter of fact, the department-stores pay high rent because they are so situated in the hearts of cities that they can at the same time pay these enormous charges for land on which to do business, and sell lower than can the village store that pays almost nothing for rent. High prices for lands on either purchase or lease arise from the fact that production can be done on them economically. They follow economic conditions. They do not cause them."

Well, I knew that theoretically the professor was right, and still I had a lingering feeling that he was only half right and that I was only half wrong. Somehow, I felt, there is a relation between the high cost of living and high prices for land. So when I saw in a stock-broker's letter to the customers of a brokerage firm an allusion to the relations between these two things—high-priced lands and high-priced foods and clothes—knowing that the letter was written by a well-known economist, I wrote him, saying: "See here! You ought to take up this matter of the relation of the high cost of living and high-priced lands, and explain it!"

"I can't do it for two reasons," he replied. "First, I haven't the time, and, second, I haven't made up my mind about it. Frankly, I don't know."

I wasn't so ashamed after that at being caught off my base by the pitcher for the Dartmouth team. There were others who didn't know, either.

To farmers, the prices of farm products—and I am talking about them only here—do not seem exorbitantly high. As Mr. Welliver said the other day, few farmers are putridly rich. Yet the cost of living in the cities is fearfully high, and going up all the time. There are dozens of things that cause this in addition to the high prices on the farm. There is the series of profits that are paid between the farm and the flat, to middlemen, railways, express companies and all that brood. There is the horribly expensive waste in distribution—six milkmen delivering milk to the six families in the same apartment-building! and plenty of things, besides. But it is true that farm prices for most of the things we produce are higher than they used to be. They seem to be permanently higher.

But that doesn't explain. What we want to know is why there are not more people on the farms. I have just read in a magazine the explanation—they are all stirred up about it—that "all the available land is taken up." That is true if fencing, and owning, and cut-and-covering is "taking up." But any farmer knows that there is room for twice, three times, as many people on the farms as are there now. I heard Mr. John W. Bookwalter of Springfield and the rest of the world read a paper on this subject last winter. He called the attention of his hearers to the rush of people to the cities as a great danger to the world—to civilization.

He seemed to miss the effect he himself has had on this matter of the rush of people to the cities. Mr. Bookwalter possesses from 60,000 to 70,000 acres of farm-land. On this immense domain there live probably from a thousand to fifteen hundred people. This is in Nebraska. In Nebraska, too, lives Arnold Martin, who on twenty-one acres makes money, besides supporting his family. If the land owned by Mr. Bookwalter were owned by the men who work it, there would be living on it three thousand ordinary Nebraska farm folk, instead of fifteen hundred people. If it were owned by men like Arnold Martin, there would be room for three thousand five hundred families, or say a population of fifteen thousand people on this same estate, which now supports perhaps fifteen hundred people on one half the crops—and Mr. Bookwalter on the other half!

What would be the effect on the cost of living if every tenant-farmer in these United States were all at once changed into an owner of his farm? Would it not change most of them into better farmers? It surely would. They would manure more heavily, establish better rotations, buy fertilizers, cease skinning the land, begin trying to make the place adequate to the support not only of the old folks, but of the children.

And now we are getting close to the relation between high prices of land and high cost of living. We as a nation are land monopolists as a regular thing, and farmers on the side. We make our money on the increase in our farm values instead of by raising things for the world to eat, drink and wear. Every man gets as much land as he can spread over and relies on the lapse of time rather than the growth of crops to make him rich. He gets hold of as much as possible of a thing which everybody must use—land,—and while not more than half using it himself, he refuses to let anyone else use it on terms which stimulate good farming.

We shall not have a generation of Arnold Martins, making money on twenty-acre farms, so long as we allow land to be made merchandise of, and cornered, engrossed, kept out of use, half farmed, managed by dogs-in-mangers. But if the whole, beautiful, rich nation were inhabited by Arnold Martins, if there were fifteen of such little farms for every half-section tenant-farm dividing with a landlord, do you think there would be any food question in this country? Why, there would have to be built five billion dollars' worth of railway tracks to carry the surplus to market! The backs of all the railways in the country would be broken trying to handle the enormous crops. Prices would adjust themselves to other prices and to wages, and the cost of living would no longer be high in the sense of being unjust and oppressive.

I do not think there is any real scarcity of land in this country. There is an artificial scarcity, caused by land being only half used. And the high prices of farm-lands—the constantly advancing prices of farm-lands—cause the high cost of living, by making it profitable for our farms to be held out of their full use, by stimulating half farming instead of full farming, by creating Bookwalters instead of Arnold Martins. Not that I blame Mr. Bookwalter. He is merely a symptom. He did not cause the trouble. That was old in the world before he was born.

Herbert Quick

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FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.00 per agate line for both editions; \$1.00 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/2 inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.

FARM AND FIRESIDE



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Subscriptions and all editorial letters should be sent to the offices at Springfield, Ohio, and letters for the Editor should be marked "Editor."

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Springfield, Ohio, August 17, 1912

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BI-WEEKLY

As the Pot Boils

THE Presidency of the United States is an important thing. The President has a good deal of power. He is commander-in-chief of the army and admiral of the navy. He could throw us into a foreign war at almost any time if he chose. He won't do it, but for all that we should carefully think it over before deciding the matter of voting for President.

But, after all, the men who represent us in the Senate and the House of Representatives are much more important to us. They decide on the matter of parcels post, for instance. Tariff? Well, the farmer may well afford to vote without reference to the tariff if the man voted for is all right on parcels post. We have lived under an exorbitant protective tariff, and can continue to do so if we must. We can live under free trade. The enactment of a real parcels post will do us more good as farmers than any tariff bill likely to pass can do.

The Page Bill for federal aid to the rural and other elementary schools in teaching practical vocational education is a vastly more important thing to the farmers than the question of Roosevelt, Taft or Wilson. For the Page Bill will affect us personally, and our children after us for generations. It will usher in a better day for the country children, if passed.

And as we come closer home, the issues become more important still. Good roads from the farm to the town depend on the county and township officers. They are more important as a matter of fact than president, senator or representative. The local school director, the county superintendent of schools, the choice of a teacher for the next year, the question of consolidating the one-room schools into township high schools—these are vastly more important than what happens in Washington. The Nation will not go to the dogs, whatever way the elections go; but the roads and schools may go to the dogs. And each of us is near to the roads and schools and able to do something worth while for their benefit. A short hitch gives the best pull.

There is money in gardening. So think one Italian and one negro who discovered, as they were at work on the farm of United States Senator Martine near Plainfield, New Jersey, a tin can containing one thousand dollars in soiled bills. No one claiming the money, it became their property.

Supply Your Soil's Needs

How to tell the needs of the soil is a hard question. By observation of the growing crop something may be told. Lack of nitrogen tends to stunt the leaf organs, and excess of it to cause profuse leafage. Lack of potash causes deficiency in the stem organs. Plenty of potash in the case of flax, for instance, promotes the growth of an increased amount of fiber. Phosphorus is needed for the seeds. Of course, these elements are not distributed within strict limits, but these are the general lines of distribution. Where the crop or tree is short in any respect, or in any way excessive, it is well for the observing farmer to look into the case closely. An experiment plot will furnish real knowledge.

A large deposit of potash rock has been discovered near Marysville, Utah. It is in a form from which commercial potash may be cheaply derived by treatment.

We speak of a rich soil as "warm." This is more than a figure of speech. A Michigan investigator has found that ten tons of stable manure worked into the top six inches of soil actually makes the ground about a sixth of a degree warmer. In sunshiny weather this same manured soil is two degrees warmer than soil without manure. This warming of the earth comes not from the fermentation of the manure, but apparently from greater absorption of the sun's heat.

Constitution-Making in 1912

IN SEPTEMBER the people of Ohio will vote on the adoption of over forty amendments to their old and out-of-date state constitution. This election is to the people of Ohio vastly more important than the presidential election in the fall, and should bring out a larger vote.

In Ohio, as in Illinois and many other States, the constitution, owing to the difficulty of amendment, has remained in frozen inflexibility for generations. In a time when the owner of an automobile is ashamed to drive a car of the model of 1909, we have to get along with constitutions of the model of 1787, 1822, 1846 and 1850. And yet developments in governmental needs have been almost as rapid as in the field of mechanics.

The Constitutional Convention of Ohio had the right to submit an entirely new constitution, but did not do so. Instead, it recommends amendments sufficient in number and sweeping enough in scope to make the old constitution a really progressive, up-to-date document.

Ohio has a chance to adopt direct legislation by the initiative and the referendum as an aid to representative government. It has a chance to adopt an amendment making future amendments possible, so that the constitution will not again grow antiquated. Women may be given the right to vote. A new liquor law may be adopted. The convention which submitted these amendments has commanded the respect and the confidence of the people, and it is safe to predict that all the really progressive proposals will be adopted by large majorities. It seems incredible that such an opportunity for improvement in the laws of the State will be allowed to slip by unutilized.

Wisconsin will this fall adopt a series of amendments which, while not so numerous, are quite as important as the Ohio proposals. They include woman suffrage and direct legislation.

Missouri and Oregon, too, are in the midst of state campaigns of nation-wide interest. In both States the fight is being waged for the exemption of improvements and personal property from taxation, and the concentration of taxes on land values. Farmers are supposed to be opposed to this, though it is safe to say that they possess less land of

value in proportion to their total property than do most business men. And it is rather worthy of note that in western Canada, where the farmers have studied the matter longest, most of them are in favor of exactly the policy advocated in Missouri and Oregon—the taxing of land values only.

Hail insurance is the subject of a bulletin of the International Institute of Agriculture at Rome. It is suggested that the best way to prevent losses from hail is by insurance, but that there is need of a great deal of work on the subject in the way of determining the rates, and that the matter should be made the subject of international investigation and agreement. In other words, hail insurance of the right sort is a good thing. Most American hail-insurance companies have done extremely well—in years when it didn't hail.

The Agricultural Press

HERE is, perhaps, the most important worldly subject we can discuss—and no man who is on the regular pay-roll of any newspaper or magazine is qualified to discuss it. Since I am not, here goes.

There be those who say that the press misrepresents the truth—but they be properly what we know as the Big Interests and Jackal Politicians, and so decidedly in the minority, serving the world so futilely, that we shall dismiss them without further word.

For us the agricultural press must in truth be the fourth estate. 'Tis a paper like Farm and Fireside, for instance, to which we must turn for information about pests like pear-thrips. Here, between these covers, can we find information and philosophy regarding skilled effort and skillless farm effort. There be men who expect to learn to farm out of text-books!—and a magazine like Farm and Fireside is good medicine for them. It is here that a man learns that to become acquainted with Mother Earth he must associate intimately with her. John Pickering Ross had an article in this magazine recently which, read by American farmers, must show them how much better off they are than farmers in some other countries, and perhaps suggest to them that they can be still better off right here IF THEY WILL VOTE RIGHT.

Is your farm near a city? Isn't there much for you to learn about truck-farming? Where will you find this class of information? How many farmers appreciate manure, its conservation and proper use? Perhaps small plants on your place are being sucked dry by the aphid. What do you know of the aphid? Do you really, truly understand the whims and foibles, the politics and peculiarities, of her majesty the hen? Do you feed and pamper a bulldog, when a collie is the sort of dog which would pay his way on your farm?

How well informed are you about hay-balers and the character of the men who go about the country baling hay, either by the ton or by the day, or who buy your hay in bulk, estimating it in the mow? Are you a correct estimator, or do you let Bill Lutz, master hay-baler, skin you out of a ton or two in each mow? Are you still digging potatoes old style, or have you invested in a mechanical potato-digger, and is it a good one?

Judson C. Welliver—now there's a man who writes some good advice for us farmers. On a day to come I am going to journey to Washington to try to talk him out of his Rooseveltitis delusion, as he writes it in several magazines. But he has thousands of brothers in distress, so perhaps we shall have to forgive him.

Then there's Editor Quick—who shall dare criticize the editor? I, since I am out of his reach and not on his pay-roll. Editor Quick is surely interesting and kind—and sarcastic—though a bit sentimental. But it has been said that to be sentimental is to demonstrate good intention, and you may be one of those who believe in this saying, as I do.

We read a page or two for the ladies of the house: latest styles in clinging skirts and fruit-canning, and pages of amusement for the little folks.

The agricultural press is our press. Farmers are hard-headed and "sot" in their ways, so they need an infallible press, which creates a necessity for exacting editors who will naturally issue authoritative pages. The farmer cannot be well informed without the press. He cannot prosper unless he be well informed. THE COUNTRY CANNOT EXIST WITHOUT THE FARMER.

Hence the imperative necessity of the agricultural press. May it thrive and live, clean, filled with healthful sentimentality and hard reasoning, carrying inspiring verses and instructive articles, little essays (by G. Henry) and entertaining stories, and truthful advertisements.

For 'tis our comfort and mentor.

G. HENRY.

An Antique Mistake

A RUSSIAN experimenter, after many years of observation, has found that the wheat crop is generally not as good after a very cold winter as after a mild one. Rye, on the contrary, is better after severe cold. Winters of deep snow are followed by poorer crops of both wheat and rye, the wheat being injured more than the rye. Every winter with little snow was followed by good crops of both wheat and rye. Severe cold and bare ground in the early winter did no harm, but a very cold March was followed by poor crops. The contrast between sheltered fields and open fields is still more opposed to popular beliefs. This observer found that the average wheat yields were less than two thirds as good on sheltered fields as on open and unprotected ones. The old adage of our forefathers, "Snow is manure," seems to be an antique mistake.

How to Get a Start in Pure-Bred Live Stock

By Richard H. Wood



THE interest in pure-bred live stock is increasing. To-day comes a request to tell an eighty-acre farmer in Ohio how to start in pure-bred live stock. He tells me about his farm, how it lies, how it is fenced, what buildings he has and the soils of the fields. He also tells what live stock he now keeps and about how much, or, as he says, "how little," money he has at his disposal. It is easy to answer such a letter, and I have written a good long reply upon the subject and sent it forward. But some other letters that I am receiving are not so definite, and cannot be answered with the confidence that I felt in advising my friend in Ohio.

I look upon the small farmer as the salvation of this country. The farms of the future will be small ones owned and conducted by men of intelligence and occupied by contented and prosperous families. It is for such farmers that I write. The man of wealth and many acres is as a rule already well informed upon farm matters, or, if he is not, he has the means with which to employ skilled professionals to help him. But the common farmer must be helped through the agricultural papers. So I will assume that there is a need of better live stock upon the small farms of the country and will direct my advice to the men who own and live upon these small farms.

As to the question: "Does it pay the small farmer to dabble in pure-bred stock?" I say that in many cases it does. Some of the best specialist breeders live upon small farms. It does not take a large farm to raise a few premium cattle, premium swine, premium sheep or other live stock. But it takes a man of some intelligence, energy and enthusiasm to make a success of pure-bred live stock. He must have certain qualifications, or he will not succeed. The man who does not like live stock and who does not like to be with his animals and care for them himself will never succeed as a breeder. The man who takes a lively interest in every animal in his herd or flock and who finds in the study of his favorite breed a sort of fascination is already half equipped to start a small breeding farm.

A Knowledge of Breeds is Essential

Next comes the selection of the breed. This, of course, calls for a knowledge of adaptability. A knowledge of breeds is more or less essential. The near-by markets for culls and surplus stock must be considered. A breeder's own taste and fancy generally leads to the selection of the breed that he can and will do best with. Whatever breed is selected must be kept for a period of years. Changing from one breed to another means loss of money. Take one breed, and stick to it until you learn all about it and until your name has become identified with it. No matter what your friends or neighbors say, once you start in with a breed that you like, do not change for some other breed. Any breed can be improved, and as the breed is improved, the breeder improves in his methods of breeding and management. All breeds have their friends, all breeds have their ups and downs. I have seen a whole herd of Morgan horses offered at forty dollars a head. To-day a fine-bred Morgan is worth a thousand dollars. I have seen five Berkshire swine sold at pork prices. To-day Berkshires of certain breedings are held in the thousands. Every farmer of my age remembers the time when Jersey calves were considered even too small to knock on the head. To-day it costs big money to buy some Jerseys.

Any of the standard breeds will pay if properly bred, properly managed and kept upon the farm a reasonable period of years. Another point to remember: You will have some "bad luck" at first with any breed. Profits will not begin to roll in as soon as you get your animals out of the crate. It takes time to get your stock settled and acclimated. But eventually and surely it will pay to have some pure-bred stock of some kind upon the farm.

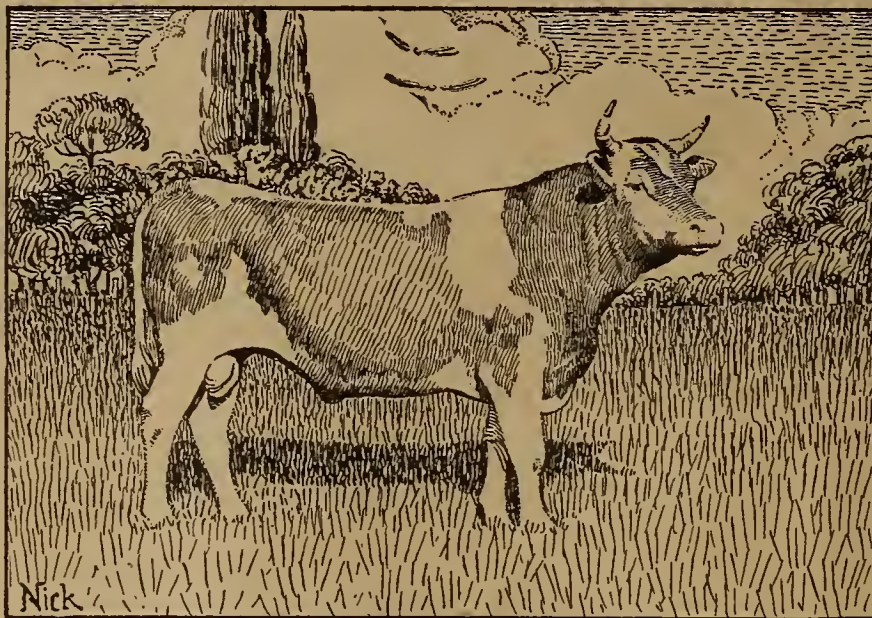
Now, how should the owner of the eighty-acre farm begin? Suppose that his means are limited. Suppose that he has a dozen head of common cows, and he likes Guernsey cattle, and is so located that he can sell cream or butter, and feed calves or pigs. My advice is for him to inspect his herd, sort them over and select those he likes, those of good form, those that are easy milkers and those that are well mannered and have good dispositions. From those let him cull out all that will not give over five thousand pounds of milk a year. Or cull out all that will not make close to two hundred pounds of butter from calf to calf. Let him retain the good ones. The balance, all that do not suit him, all that are not easy to milk and pleasant to handle, and all that do not fill the pail or furnish a reasonable amount of cream should be sold at once. The sooner he gets them off the place the better. That is the first step. Unless a man has the sense and judgment to cull and sort, he will do well to keep out of the pure-bred live-stock business.

The proceeds from the sale of culls should be invested in a good bull calf. Such a calf of that breed and with good working pedigree behind him will cost from forty to one hundred and forty dollars. Of course, calves from some families cost much more, but a very good straight-backed bull calf from a cow that gives over six thousand pounds of better than four-per-cent. milk can be bought for somewhere around one hundred dollars. Be sure and get one that is healthy and vigorous,

and out of a cow that has a good udder and well-placed teats. Do not ask for the largest calf. Do not be too particular about the color. You can select for size and color in years to come. It is *what is in that calf that counts*. Get constitution and quality. This bull calf will do to use soon upon your selected herd of cows. He will get you some good dairy cattle. His get may be nearly as good for milk and butter as some pure-bloods.

Buy a Pure-Bred Heifer Calf

Now you have already improved your herd and it has not cost you one cent. So far all is practical. You have his expense, and if you take proper care of your cows, you will make more money from your herd this year than you made last year, and with less work. If you can afford it, buy a pure-bred heifer calf. She will cost you about one hundred dollars. If you have enough money left from the sale of your culls after buying the bull calf, buy the heifer calf at once. If not, wait until later. See that she is from a good producing cow and that she has good teats and udder. Do not mind size or color. Get a heifer of quality, one having marked evidences of heavy producing qualities, and do not pay fancy prices for color alone. You are ready now to raise Guernseys. Do not be in a hurry. Take the farm papers. Be sure to get in touch with other Guernsey breeders. Do not change the breed. Some old crony will come along and lean over your fence and tell you your breed is of no account. He will tell you he likes something else better. Pay no attention to such advisers. They know nothing about *your* business. Keep right on with your plans. Every year sort, cull and sell. Keep only the good ones, and in five years you will have a choice herd of money-making high-grade heifers and a nice little foundation herd of pure-breeds. Keep at this ten years. Read, study and manage properly, and you will be well off. It never fails if one gets at it right and stays by it intently. If you like some other breed best, start in the same



"When selecting the bull, get constitution and quality"

way, but whatever breed you select, stay with it. Do not think of switching from one breed to another. So much for cattle. Now for swine. Select your breed. Send away for a pair of pigs. Get good healthy animals, from a good reliable breeder and out of good, strong, prolific ancestry. Get size, but do not ask for the largest. Such a pair of pigs will cost you from twenty-five to seventy-five dollars. Just about the price of one scrub cow. Keep these pigs well, see that they have range exercise and a balanced ration. Stick to that one breed. Read all you can about them. In five years you will have some good hogs upon your farm. If you kill or sell all the poor ones, and if you sort and cull and keep none but good ones, you cannot help but have a herd that will please you and make you sure money.

Sheep Are Profitable Farm Animals

At the present time you can buy a pair of good sheep—lambs perhaps—for from twenty to thirty dollars. The buck will improve your common flock. By selection, sorting, culling and selling you will soon have a good grade flock and a flock of pure-breeds on the side. It will not be long until your sheep, too, will become a source of pride to you and to your family. Stick to your favorite breed. Wool will go up, it will go down, mutton prices will vary, you will have your trials, of them the most aggravating will be the chronic adviser, but stick to your plans. Do not let yourself be sidetracked. Do not try to do too much. Keep only the good ones. Attend the fairs, and learn how to judge live stock. Take several farm papers, and read them. Learn all you can about your favorite breed. Be master of your subject. Presently you will have good herds and flocks. People will get to know what you are doing, and you will have been making a little money all the while. You will have "gone crazy" over nothing, but will find yourself stronger and more intelligent than the neighbors who have continued breeding scrub stock. In this way you will build up good herds and flocks, your regular business going on in the meantime. As you progress, you will from time to time buy new blood, and you will be constantly improving your stock. When you are satisfied that you have really good stock, you can begin to exhibit at the fairs, and if you like, you can advertise in the farm papers and thus find a better market for your good specimens.

A trio of pure-blooded fowls will cost about ten dollars. A couple of settings of eggs will cost about five dollars. Select the breed you like best. One breed is as good as another. Consult your family, and have the breed in which they too will be most interested. Save all good pullets. Dispose of all poor ones. Occasionally buy a good cockerel. Cull, sort and sell. Provide good quarters and plenty of good feed. You will, in a year or two, be deriving more profit and satisfaction from your flock than you ever did from a flock of mongrels.

None of this advice is needed by the man of wealth. He can take an expert with him and visit the herds of the "way up" breeders and buy fancy animals at fancy prices. It is well that he can do so. Some day if you learn all the details of the business and make it successful, rich men may visit your farm and pay you fancy prices for fancy animals. But this will not happen for years and never then unless you have energy, patience, judgment and enthusiasm. Some of the best breeders have started in a very modest way and established superior herds in the manner that I have outlined.

It would be well for those contemplating these things to begin corresponding with some of the breeders who are constantly advertising. Much can be learned by such correspondence.

Bear in mind that pure-bred live stock require care, feed and shelter. Fencing, sheds, pasture and forage are all necessary. The breed, the feed and the intelligence of the breeders all count in the live-stock business.

The Real Value of Your Dairy Herd

By D. S. Burch

YOU can easily find out what a cow is worth to anyone else by offering her for sale. But what she is worth to you is not so easy to learn; that is, to learn with any degree of exactness. A cow is a long way from being legal tender. She may not be worth over ten dollars, and that chiefly for glue, or her value may run in the hundreds.

Let's take your "Bess" for example and go about finding her value systematically. First put down forty dollars, as a starting-point; that's about the average value for each dairy cow in the United States. Now figure her real worth from the following rules:

What to Add

- Add five dollars for every thousand pounds of milk she gives annually over five thousand pounds.
- Add ten dollars for every per cent. of butter-fat in her milk over 3.5 per cent.
- Add twenty dollars if she has been tested for tuberculosis and found healthy.
- Add ten dollars if her sire was a pure-bred Jersey, Holstein, Guernsey or Ayrshire.
- Add ten dollars if her dam was an animal of the same breed as her sire.
- Add ten dollars more if her dam was a pure-bred animal of the same breed as her sire.
- Add five dollars for every healthy calf she has dropped.

What to Deduct

- Deduct ten dollars for every thousand pounds of milk she gives annually less than five thousand pounds.
- Deduct ten dollars if her average milk tests less than 3.5 per cent.
- Deduct ten dollars if she is over seven years old, and five dollars a year more for every year over ten years old.
- Deduct forty dollars if she has tuberculosis or any other incurable disease.

This Method Points Out the Difference in Cows

Bessie is eight years old, sire was a Jersey bull, dam was a nondescript, her milk tests 5.5 per cent., she has never been tested for tuberculosis, she has had five calves and gave last year four thousand pounds of milk. The directions above show that Bessie is worth seventy-five dollars at the present time, but her value will rapidly decrease in the next few years.

Now, take three-year-old Brindle, who gives only four thousand pounds of three-per-cent. milk, who has had only one calf, which died the day it was born, and who is of mixed shorthorn pedigree. Her value is found to be only twenty dollars as a dairy animal. It would be more profitable to fatten her and sell her for beef.

News of Interest to Dairymen

An Ohio Holstein breeders' association reports an increase in membership of two hundred per cent. in the past three years. It now has one hundred and fifty members. There ought to be more such flourishing agricultural clubs.

Not very long ago fifteen tons of cold-storage butter from Chicago was seized by the federal authorities at Jersey City, New York. It was on its way to the restaurants of New York, and its rankness was noticeable even to people alongside the train. The railroad employees objected to handling it, and the butter was sent to the dump.

How about an alfalfa dinner for yourself? Have you tried it? Dr. W. X. Sudduth, of Billings, Montana, gives all-alfalfa dinners from the soup at the beginning to the drinks at the end. He recently won a prize of one thousand dollars for the largest number of ways of working up alfalfa for human diet.

Pasteurizing Milk in the Bottle

By Charles E. North, M. D.

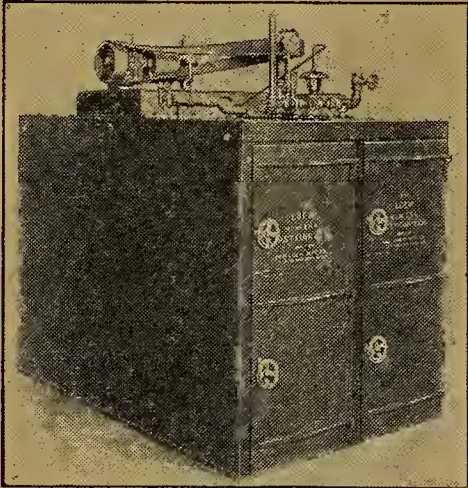
THE battle which has been waged for twenty years over the Pasteurization of milk is now at an end. There are still a few mutterings heard here and there from the defeated forces, but the victory lies overwhelmingly with those who advise the Pasteurization of milk. The battle has been won not so much by direct conflict as by wholesale desertions from the opposition. The more men have studied the milk question, the more they have come to understand that no amount of veterinary inspection of cattle or medical supervision of dairy employees can prevent at times an unexpected outbreak of disease from milk. This is particularly true of typhoid fever.

It is not necessary because of this for the milk-producer, milk-dealer or milk-consumer to be alarmed or to regard milk as an article of food to be avoided. The result should be quite the opposite, for when one knows in just what form danger is likely to come, it is possible to proceed in an intelligent manner and to take steps which will positively prevent any such accidents.

Pasteurization has had the misfortune to receive a bad name in the minds of some, only because the process has been abused. The mere fact that the mild degree of heat used in the process kills the bacteria of disease no matter how numerous they may be or how filthy may be the fluid containing them has led some unscrupulous persons to use Pasteurization as a substitute for cleanliness. The attempt has been made to transform bad milk into good milk by this Pasteurizing method.

Pasteurization is not a substitute for cleanliness. It is impossible to transform bad milk into good milk by heating it, or to change dirty milk into clean milk by heating it. All milk offered for drinking purposes must be clean for the sake of decency if for no other reason. Pasteurization simply makes good milk better. It has as its only purpose the giving of an absolute guaranty against any accidental infections of milk with the bacteria of disease. Milk may be clean and may be produced with the utmost care and yet may suddenly be the cause of an outbreak of typhoid fever or may contain the discharge from a sore udder and cause inflammation in the throat of an adult or in the intestine of an infant. Such things as this cannot happen if the clean milk is scientifically heated before it is sold.

The term Pasteurization is not a definite one, because there has been so much uncertainty as to the degree of heat and the duration of heat to be used. There are also a large number of types of apparatus and processes which go under this name. The starting-point of the process was the work of Louis Pasteur, the great French scientist, who found that a mild degree of heat would kill yeasts in beer and wine and bacteria in milk.



This Pasteurizer does the work in an hour

But he himself defined no definite temperatures or processes regarding it. Among the many methods there are various degrees of excellence. In the milk industry the commonest method consists in dumping milk into receiving-tanks, from which, through pipes, it is led into a heater, where the milk is raised to the desired temperature, and from which it either passes directly through a cooler or into a retaining-tank, where the heated milk can be held for from twenty minutes to half an hour, after which it is cooled.

This is the way the greater part of the milk supplied to large cities is now treated. The point particularly to be noted is that the bottling is done after the Pasteurization is completed. This makes it necessary to conduct the Pasteurized milk through additional pipes into bottle-filling machines and finally into the bottles, which are then capped, usually, with a pasteboard cap. All of the processes which occur after Pasteurization is complete expose the milk to chances of contamination, which in many cases add bacteria to the Pasteurized milk, so that it is considerably changed for the worse before it reaches the consumer.

Realizing the folly of such reinfection and recontamination of beer, the brewers long ago decided to bottle their beer first and Pasteurize it afterward. This means the Pasteurization of the bottle itself. In all large breweries where bottling is done, one may now see the beer placed in bottles, which are then covered with water-tight caps, after which, in the larger plants many thousands at a time, the bottles, caps and beer which they contain are immersed in hot water or receive a shower-bath of hot water, so that the entire package and its contents are thoroughly heated. These are next cooled and made ready for delivery.

It is clear that Pasteurization in the bottle itself entirely removes any further chance of damage to beer. I have taken up this suggestion and urged its adoption by the milk industry.

The three main types of Pasteurization are called: (1) the flash method, which means heating followed by immediate cooling and later on bottling; (2) the holding method, which means heating, then holding in a holding tank, followed by cooling and later on by bottling, and (3) Pasteurization in the bottle.

The first method has now been largely abandoned and is one against which legislation is being directed so that its use will disappear in favor of the other two methods. As an illustration of the comparative merits of the holding method and Pasteurization in the bottle, the table shows the results of actual tests made on the same milk, using the same times and temperatures, in one of the large milk-plants in New York City.

The number of bacteria remaining in milk after heating depends chiefly on the number of bacteria in their species in the raw product. A clean milk containing small numbers of bacteria, after Pasteurization often contains none whatever, so that laboratory examinations give zero as the result. A milk full of hay-dust

and which contains bacteria - forming spores, or hard shells, may still contain a large number of bacteria after heating. The test for the number of bacteria per cubic centimeter referred to in a previous paragraph resulted in favor of bottle Pasteurization, thus:

Raw Milk	Holding Method	In Bottle
950,000	72,000	4,100
900,000	66,000	6,200
600,000	60,000	2,800
200,000	51,000	3,100
300,000	51,000	2,000
1,400,000	42,000	2,600
1,200,000	16,000	8,000
550,000	12,000	7,000
410,000	17,000	4,500

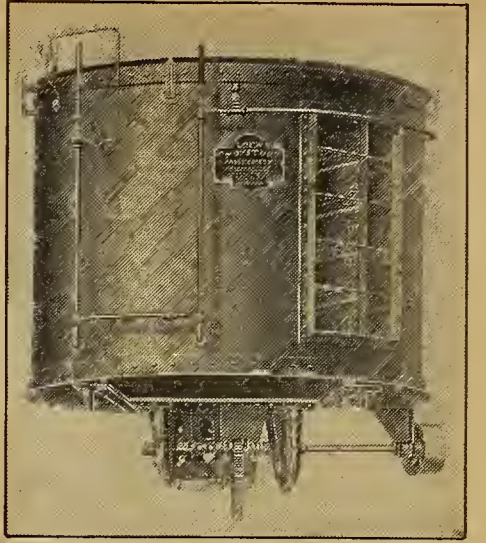
The apparatus for Pasteurizing milk in the bottle is now manufactured on a large scale by the manufacturers of brewers' machinery. Small outfits have been made for the Pasteurization of babies' milk in the home, and there are some special kinds of machines made of a larger type for Pasteurizing babies' milk in the milk-depots after the methods of Nathan Straus.

Large milk-dealers who intend to put on the market several thousand quarts of milk can afford the beer Pasteurizers. Four milk-dealers in this country at my suggestion have already adopted these and are meeting with the greatest success in so far as the quality of the product is concerned. The public has not been aroused to the advantages of this grade of milk, and consequently the market is still small. Any small dealer can Pasteurize milk in the bottle by the use of hot water and tanks or vats to hold his bottled milk.

It is necessary to allow from fifteen to twenty minutes for a quart of milk to heat up to the same temperature as the water which surrounds it; by placing a thermometer in the quart bottle in the center of the milk one can easily determine just how long it takes the milk to reach the water temperature. The best temperature for Pasteurization in my opinion is 145° F., and the time should be for a period of not less than twenty-five minutes. This means that, after the milk in the bottle has reached the temperature of 145° F., it must be kept there for twenty-five minutes before cooling.

I would advise dealers who are selling a considerable quantity of milk to buy some of the smaller types of brewers' Pasteurizers. One of the best of these gives a continuous shower of hot water, followed by cold water, so that the bottles are not submerged in the tank, but simply pushed into a closet, through the ceiling of which the continuous shower-bath comes.

The use of Pasteurized milk is merely a matter of education, for the Pasteurization in the bottle gives to milk character a guaranty which it can have in no other way.



Large milk-dealers need Pasteurizers

Western Hay-Making Conditions Demand the Stacker

By Warren F. Wilcox

WITH but one crop of hay a season and no irrigation work on hand, the eastern farmer can take his time in putting up his timothy, clover or orchard-grass, bucking it on to a high wagon with main strength and heaving it off again into the capacious mows of the barn with the aforesaid main strength. But for the western hay-maker who has a large acreage of alfalfa to secure not less than three times a year and the field to irrigate as soon as possible after a crop is off, hay-making must be expedited as much as possible, that the work may not be delayed.

A great many kinds of machinery are used in the arid region in stacking hay. All hay is stacked, there being no barns for the accommodation of hay, inasmuch as even the animals remain out-of-doors the year around.

In various sections various methods of stacking are used. In some sections you will find each hay-maker equipped with overthrow stackers and bull rakes. With such an outfit, there is little actual heaving of hay by hand. The man who makes the stack uses a fork, and that is about all. The others use the bull, or push, rakes run with two horses, going out into the field and pushing the long teeth of the machine under as much hay as it will accommodate, driving to the stacker and pushing the load onto the teeth of the stacker and backing away, leaving it to be thrown up on to the stack.

In other sections the Mormon derrick stacker is used. This is a tremendous home-made affair, being thirty or forty feet to the top. The crane swings around, and with its aid a load of hay may be raised and dropped on the stack wherever needed. The stack is built in sections. As fast as one section is completed, the stacker is moved up for another. This kind of outfit, used in connection with slips and slings, is, in my estimation, the most efficient kind to be found.

Slips are light sleds of most any style of manufacture desired. On these are

laid slings of the usual type. The slip is driven out into a field of cocked alfalfa, and the driver and a spike pitcher, one on either side, lift the cocks onto the slip and sling. It is easy work. There is no high pitching, as the slip is right on the ground. When the load has attained a size as large as the sling can accommodate, the slip is driven to the stack, and the spike pitcher goes to the next slip which has just

unloaded. The driver of the first goes to the stack, attaches the ends of the sling to the pulley on the cable of the stacker. The boy with a horse or team hitched to the other end of the cable raises the load to the stack, where it is dumped for the stacker. Three slips with men and an extra field, or spike, pitcher can make things interesting for a stacker. The driver keeps them on the move so continually that they can't even get a drink without stopping the whole works.

Other kinds of stackers are also used. Last summer among my neighbors, here in Colorado, there were four kinds of stackers used, not including the overthrow, which was not represented, but the Mormon stacker proved to be the best of all.

Alfalfa is the natural forage crop of the arid region. It will grow anywhere here, making from three to seven tons per acre a season. Colorado alone has an annual output of alfalfa exceeding \$15,000,000. The hay is cut just as the plant comes into bloom. The rancher puts as many mowers into a field as possible and cuts it all down. The rakes are started soon after the mowers, as the alfalfa is not allowed to cure in the swath. If the mowers start in the morning, rakes are started at noon. As soon as it is raked, it is put into cocks or so. If the alfalfa is allowed to dry in the sun, the leaves come off, leaving the bare stems, which is poor hay. The leaves are the essential part, and by curing in the cock they remain intact.

As soon as the crop is harvested, the water is turned on the field and another crop is soon under way. We get three crops and pasture here in Colorado, while in the low, hot portions of Arizona and California five to eight crops are harvested.

Alfalfa, the king of forage-plants, is not a transient grass, for its tap-roots penetrate the hardest hardpan in search of moisture and food. Roots twelve to fifteen feet long are found, and in one place in Colorado a root was found at the depth of one hundred and twenty-nine feet.



The Mormon stacker does the work in less time

THE WAY OUT

Change of Food Brought Success and Happiness

An ambitious but delicate girl, after failing to go through school on account of nervousness and hysteria, found in Grape-Nuts the only thing that seemed to build her up and furnish her the peace of health.

"From infancy," she says, "I have not been strong. Being ambitious to learn at any cost I finally got to the High School, but soon had to abandon my studies on account of nervous prostration and hysteria.

"My food did not agree with me, I grew thin and despondent. I could not enjoy the simplest social affair for I suffered constantly from nervousness in spite of all sorts of medicines.

"This wretched condition continued until I was twenty-five, when I became interested in the letters of those who had cases like mine and who were getting well by eating Grape-Nuts.

"I had little faith but procured a box and after the first dish I experienced a peculiar satisfied feeling that I had never gained from any ordinary food. I slept and rested better that night and in a few days began to grow stronger.

"I had a new feeling of peace and restfulness. In a few weeks, to my great joy, the headaches and nervousness left me and life became bright and hopeful. I resumed my studies and later taught ten months with ease—of course using Grape-Nuts every day. It is now four years since I began to use Grape-Nuts, I am the mistress of a happy home, and the old weakness has never returned." Name given by the Postum Co., Battle Creek, Mich.

"There's a reason." Read the little book, "The Road to Wellville," in pkgs.

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

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The Market Outlook

Sheep on Strong Basis

"MEAT is King," and the sheepman will make no mistake producing the best and plenty of it. So says "Buffalo" Jones in the *American Sheep Breeder*, and he knows.

Speaking of the scarcity of feeding lambs, the *Breeders' Gazette* remarks that "Packers promise to grab all but the poorest western lambs, and feeders are confronted with a prospect of poor picking. The whole trade appears to be on a strong basis. The wool trade has not been as promising for many years."

Encouraged by these opinions of undoubtedly practical men, let us see what profit may be looked for from twenty-five ewes, which were suggested in the last issue of FARM AND FIRESIDE as an experiment to be tried on farms of fifty acres and upward. The cost of these, with a thoroughbred ram, was put at about one hundred and sixty dollars, and their feed for a year at fifty-seven dollars, in both respects a liberal estimate.

With the services of a robust and healthy pure-bred Shropshire ram, twenty-five good grade ewes of any of the Down breeds, or of Rambouillets, or of hornless Dorsets, will, if in proper condition when mated and during pregnancy, produce and rear at least thirty-five lambs. It is too late this year to raise lambs specially for the early spring markets, since the ewes for that purpose should be mated in June, but among these thirty-five lambs there are sure to be some which naturally put on fat and ripen more quickly than the rest. They depend mostly on their dam's milk, but should have an extra ration of one-fourth pound of oats and bran with a little linseed-meal daily. They will pick hay and roughage with the ewes. This, for ninety days, will cost not more than fifty cents per lamb. Probably fifteen such lambs will be found in that time weighing from fifty-five to sixty pounds—the most desirable weights for spring lambs. They will be almost certain to command eight dollars the hundredweight—say four dollars and eighty cents per lamb, which, after deducting seven dollars and fifty cents for extra feed, amounts to sixty-four dollars. After leaving the yards, these lambs, with their dams, should be put in a small pasture by themselves to avoid being robbed of their rations. They should be ripe for the market by the end of May or beginning of June.

The remaining twenty lambs will remain with their mothers till weaning in June. They also should have a small ration of grain and meal to overcome the danger of scouring from the young grass. The cost of this, for the twenty lambs, will not exceed ten dollars.

After weaning, care must be taken to keep them advancing. If on pasture, they should have a daily ration of one-fourth pound of oats, or cracked wheat or corn, with bran and linseed-meal, one-half grain and one fourth bran and meal, fed morning and evening. This should be gradually increased to one and one-half pounds per day. An hour's run on rape, rye or clover after the morning ration is very desirable. This, up to November, when they should weigh from eighty to ninety pounds, will cost \$2.25 a lamb, or, for the twenty, \$45; making the total cost for feed \$55.

The account with the twenty-five ewes for one year will stand thus:

Dr. To cash paid for twenty-five ewes and one ram	\$160.00
Cost of feed for ewes, less value of wool and manure	55.00
Cost of feed for ram	5.00
Total	\$220.00

Cr. By sale of fifteen spring lambs..	\$64.00
By sale of twenty fall lambs, at \$7 per 100 pounds—\$6 per lamb, less \$55 cost of feed..	\$65.00
Value of their manure (1/5 the cost of feed)..	11.00
	\$76.00
Deduct 10 per cent. for possible losses	14.00
Total receipts from 25 ewes, one year	\$126.00

Each man can estimate the cost of labor expended on the sheep, but their talents as destroyers of weeds should be taken into account. JOHN PICKERING ROSS, Illinois.

Feeders Will be High

GRASS cattle have now begun to make a difference on the market, and the day of the half-fat cattle is now on the wane as far as prices are concerned. Good fat cattle are scarce and will without a doubt sell high all summer. The great topic now at the stock-yards is, "What are we going to pay for feeders?" As a rule, cattle bought in the fall and fed three or four months make money one year out of four, the other three years they merely pay for their feed and

sometimes do not do that. Packers figure on this and take full advantage of it by filling the cellars when there is plenty and selling their products when receipts let up. Cattle are more plentiful in the fall when the pastures are emptied, and we have thousands of men who buy them and, after eating up their corn crop, dump them on the market in January, February and March at a loss. Now there is no question but that feeders will be high, so high that I have not yet been able to see daylight, and yet the higher they go, the keener will be the demand. This is something we cannot help, but we can partly meet it by using cheaper feeds. It stands to reason that if steers bought this fall can be fed four months at a profit, beef will be high. It will be so high that it will be out of proportion to mutton and pork. Those who fed sheep last year and marketed before March made little money, and like all speculators, instead of staying by the sheep, are now ready this fall to try cattle-feeding. It does seem that sheep this fall would be a much surer speculation to feed than cattle. It is certainly speculation to put light steers, from eight hundred to nine hundred pounds (and that is all we are going to be able to buy), into the feed-lot and figure on selling them after a four months' feed, when the same weight of cattle, if carried through the winter on roughage, might make good money in the spring.

How are you fixed for roughage? What have you done, or what are you going to do to get it? I sowed rape in fifty acres of oats. The oats are now being cut and will yield fifty bushels to the acre, and the rape in three weeks will be a sight to see. I figure it will take one thousand lambs from October 1st to Christmas to clean up the rape, the fourth crop of alfalfa, the stubble, the corn-fields and the farm. Unless the ground is covered with heavy snow, it is going to be a hard proposition to lose money on this deal. If I put these same one thousand lambs into the feed-lot October 1st, and feed them three months, and sell with the crowd when receipts are heavy, the chances are a big loss. Again, take the cattle end and figure this a little. The ordinary way of feeding a steer in the fall is to give him all the corn he can eat four or five months, and then sell. Now, if this same steer, instead of being fed twenty pounds of corn per day, were fed eight pounds, he would keep on gaining and could, with no more cost, be carried over the period of plenty and sold at a time when the market shows a profit. This can be done on any corn-belt farm if the farmer will take care of his roughness. One acre of corn in the shock or silo is worth ten acres of stalks. If you don't have cattle enough on the farm, remember that hay is high-priced and will keep for years. See that what cattle you have utilize the corn-fodder. It is not a complete feed in itself, but with one and one-half pounds of cottonseed-meal per head added it is wonderful how much roughage you can save if you try, and how much you can increase your profits, for the cheaper the feed; the less margin you need to feed on. That is our only salvation from now on in the cattle business. The average farm is not for many years going to produce more, but what has heretofore been wasted is going to be utilized at a profit.

Years ago I spent a week on a farm in Scotland and noticed many things. The steers on feed were fed oat-straw for roughness. I asked why they did not feed their clover-hay and was told they could not afford to, that the hay was all sold to the cities and that they fed cattle on straw for roughage, adding oil-meal to it. The rent of this farm was fifteen dollars per acre per year on a twenty-one-year lease, and then, as now, the cattle being fed were sold in competition with American beef. We have reached the stage in this country now where we must look for our profits from what we are now wasting. W. S. A. SMITH, Iowa.

Improved Hog-Market

WHEN the receipts in hogs began to decline at the Missouri River markets, there was an improvement in prices, as had been expected. This territory furnished the bulk of the hogs going to the market, and consequently controlled the supply. Along with this lessening of receipts came heavy rains over much of the country, insuring a good yield of small grain and greatly benefiting pastures and corn-fields. With the improvement of the pastures, there is always a tendency to hold stock a bit longer, and with a good prospect for cheap corn this winter, farmers are reticent about selling hogs unless the price is very attractive. Under these



On his last legs

conditions top quotations again reached the eight-dollar mark. While this price may draw a supply marketward, it is generally believed that the old crop is pretty well marketed, and that light receipts will continue until the 1912 crop makes its appearance.

Cattle-feeding will be conducted on a small scale this winter because of the scarcity and high price of feeders, and hog-feeding will probably be done on a large scale in its stead. This will make a steady market of finished hogs.

However, if adverse weather seriously injures the corn yield, hogs may go to market at a lighter weight and at an earlier date.

Due to the great fresh-meat demand at this season, there is a strong market for prime light and medium weights. The supply of this class has decreased and sharp advances have been registered. Heavy sows not much in demand have increased in proportion, and consequently quotations on this class have declined, causing a widening in the range of prices. The average weight has increased until it is the heaviest of the year, and it is heavier than that of the corresponding time last year. Supply has dwindled till it only equals the urgent demand. The market is on a firm, healthy basis. LLOYD K. BROWN, South Dakota.

The farmer who reads his farm paper as it should be read will have something to think about while he goes about his farm.

How to Feed Alfalfa

THE best use I have found for a small plot of alfalfa is for soiling cattle and for feeding horses and poultry. Alfalfa is the best soiling crop known, and those who have an acre or more well established will do well to feed it with ensilage, or green corn-fodder if they have it, to supplement pastures. It is very valuable as hay, but if I had only a small acreage, I would first use it for soiling, wilted under hay-caps. There is danger in feeding green alfalfa without wilting, especially if it is wet. It may then cause bloat. If one has plenty of pasture in early summer, it may be well to cure the first cutting for hay and use the other two or three for soiling, but however good the pasture, if alfalfa is fed to the cows when on it, the flow of milk will be considerably increased. In my experience the maximum yield is obtained only with alfalfa. The cow will leave all other food for green alfalfa, and the alfalfa will increase the flow of milk after all is obtained that is possible with other foods. This fact has been learned by breeders of pure-bred cattle, and they try to grow some alfalfa to feed when making official tests. When pastures are supplemented with alfalfa, there are generally enough of the more carbonaceous pasture-grasses, as timothy, etc., to well balance the high-protein content of the alfalfa. When pastures begin to dry up or are short in late summer, there should be a reserve of corn-ensilage or green corn-stalks to feed with the alfalfa. In this way, with no cash outlay for grain, the cows can be kept up to the maximum flow of milk. This means that more milk can be obtained than with the average pasture which is supplemented with grain.

I wish my readers could all see the value of alfalfa for all farm animals. It is as good for sheep and poultry as for cattle and horses. For poultry yarded in summer, alfalfa is the best green food, if cut in short lengths and put in slatted boxes. It is far better than any commercial mixture, and it costs only the knowledge needed to grow it and a little work. Better than anything else, alfalfa will help the farmer solve his feeding problems and will enlarge his margins of profits. Besides its feeding value, it will build up his soil by filling it with humus, so that he can grow large crops of corn, etc.

The best food for farm-horses in summer is alfalfa, wilted under hay-caps, with only a little grain. The heavier draft-horses with larger stomach capacity, if kept on the farm, will do the ordinary work with a liberal feeding of alfalfa and a few pounds of grain. When wilted under hay-caps, it contains just the right succulence for the farm-horse, if used moderately, but too much for the driving-horse. For the road-horse I prefer wilted alfalfa to ordinary hay, only I would give less of it and more grain. I should have mentioned one difficulty in soiling animals with alfalfa alone, and that is that it cannot be cut continuously without injury. There is an interval of about two weeks with each crop when the alfalfa should be let alone to grow, but this can be bridged over by feeding a fine quality of alfalfa-hay. The main trouble I have found in thus feeding the cattle and horses has been that after they have become accustomed to eating the alfalfa, they don't want any other roughage and will not eat it as long as they expect the alfalfa.

Besides knowing the right way to feed alfalfa when used in summer for a soiling crop, farmers should understand they will get better results from feeding alfalfa-hay in winter if it is fed with a carbonaceous succulent roughage, such as a good quality of corn-ensilage. Without ensilage or other green or succulent food, it would be a good thing to do to grow some root crop to feed with the alfalfa-hay. W. H. JENKINS.

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Growing Strawberries for a Village Market

I HAVE had a long experience in growing strawberries for a near-by village market. I am close to a village of less than one thousand people and have seldom been able to grow on my little place sufficient berries to supply the demand. Several hundred dollars' worth could be sold each year, but I cannot grow them all and attend to my other farm and garden work. I have seldom sold berries for less than thirteen cents per quart, or two quarts for twenty-five cents, and have sold nearly the whole crop for fifteen cents per quart. I do not often peddle or deliver berries. The people come to the house for them, even when there are plenty of berries in the stores that are offered for a lower price.

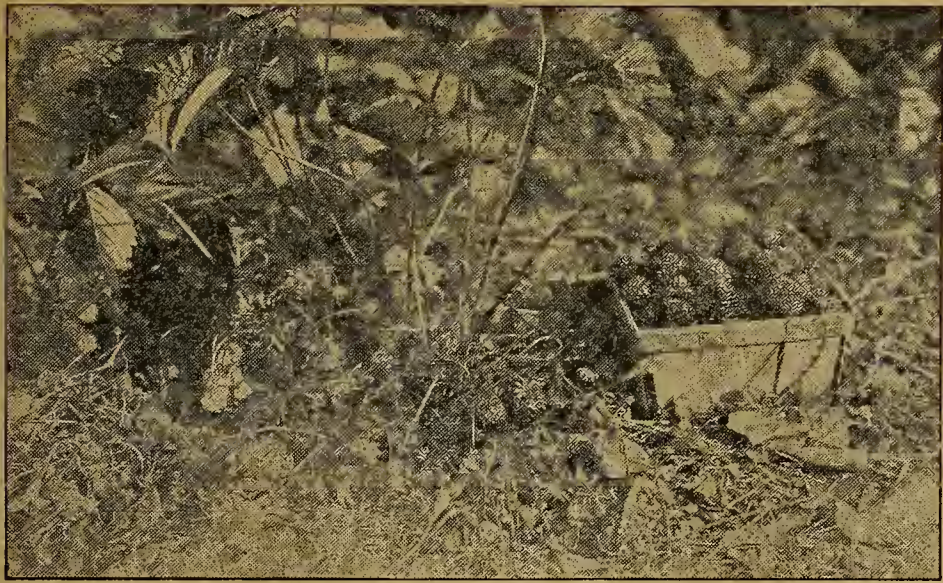
The main essential in success at this business is growing the berries, for there will be no trouble about the marketing when you can offer baskets heaping full, in which every berry is of good size, sound and has been left on the plant until fully ripened. Such berries are so sweet they require but little sugar and have the true, luscious strawberry flavor. Very few people who eat ordinary commercial berries know the real strawberry flavor. When they eat a basket of our home-grown berries, they want another. I don't grow the sour kinds of the Crescent type, but mostly Marshall, Wm. Belt, Brandywine, President and Gandy.

I have at this time a field of Marshall, Wm. Belt and Brandywine strawberries that have been grown strictly by the hill system. They were planted early in the spring in check-rows about two feet apart each way, were given perfectly clean cultivation last summer and all of the fruit stems and runners were cut off as fast as they grew. At this writing the berries on the plants are nearly ready for picking. I counted on many plants 250 to 300 berries and blossoms.

waiting on customers who come after berries. Very seldom has there been a berry surplus. Occasionally meat or grocery peddlers have sold for us a few crates, but not often. Farmers and people out of town drive in for berries and pay our price, even for canning purposes. All the people in the vicinity have learned that we sell fine dessert or table berries that are good to eat. In some markets it may be best to put up some of the fancy berries in pint baskets for small families who want a very few for one meal and who are willing to pay about one cent more than the quart-basket price.

My readers will want to know how much it pays to grow fancy strawberries by the hill system and give them the highest culture. I have now (June 10th) a block of two thousand plants nearly ready to begin picking. The plant shown in the photograph carries about thirty fruit-stems (because every blossom and runner was removed last year), which will average ten berries to the stem, or a total of three hundred berries. If these berries were all picked green, they would more than fill a quart basket. This plant is but little larger than the average, so it will be safe to figure on two thousand quarts from the block, and with a net price of ten cents per quart, are worth two hundred dollars. This block of berries occupies about one fifth of an acre, so my readers can figure out the receipts per acre when all conditions are favorable. There is less loss from disease and drought when berries are grown by hill culture, as the plants are all the time kept growing vigorously. It is a good insurance to spray the plants early in the spring with Bordeaux mixture, but I do not always think it necessary with high culture. A frost has never destroyed my whole crop and sometimes has been beneficial by thinning the plants so that the remaining ones grew larger.

The cost of growing strawberries by the hill system, if the plants are kept for fruit-



One plant should yield a quart of berries

There is no reason why all should not develop into good-sized, marketable berries.

Right here is the secret of success in growing strawberries for a local market: grow the large, sweet varieties by the hill or narrow-row system, and give them high cultivation; namely, heavy feeding and perfectly clean culture. My strawberry-plantation is kept clean of weeds all the time. Any time the weeds appear either in the old or new plants we take them out. Sometimes the fruiting bed is cultivated both ways of the field with horse and cultivator and hoes.

If the growth is not satisfactory, nitrate of soda can be applied before the cultivation. If the plants are heavily mulched during the winter with strawy manure and are clean, then spring cultivation may not be best. If cultivated in the spring, a mulch of green grass is placed between the rows before picking.

When some berries have turned red all over so there are no green tips, we begin to pick. Women are the best pickers. The best and most careful pickers are easy to get when the berries are so large that one can pick rapidly. Each plant stands out alone, and there being no weeds all the berries are quickly seen and none are wasted by leaving overripe ones on the plants to decay. Pickers can earn more picking such berries for one cent per quart than for picking ordinary berries at two cents per quart. This is one of the compensations for the hill culture of strawberries.

I always instruct the pickers not to put in the baskets a berry they would not want to buy and eat themselves, and to heap the baskets up just as full as they would like to buy them. The pickers have carriers holding four baskets, and when these are filled, they carry them to the packer and get tickets for them. The packer carefully inspects each basket before placing it in the crate. The packing is usually done in an outbuilding. When a crate is full, we carry it to a very cool cellar, and if not disposed of at once, the baskets are unpacked and placed on the cellar-bottom.

Sometimes my man has driven around the village with the first picking of berries to let the people know that berries are ripe, but this is not always necessary. Some member of the family usually makes a business of

ing two or three years, as they usually are, is really less than by the wide-row system. I follow alfalfa with strawberries, and the alfalfa-roots partly feed the plants.

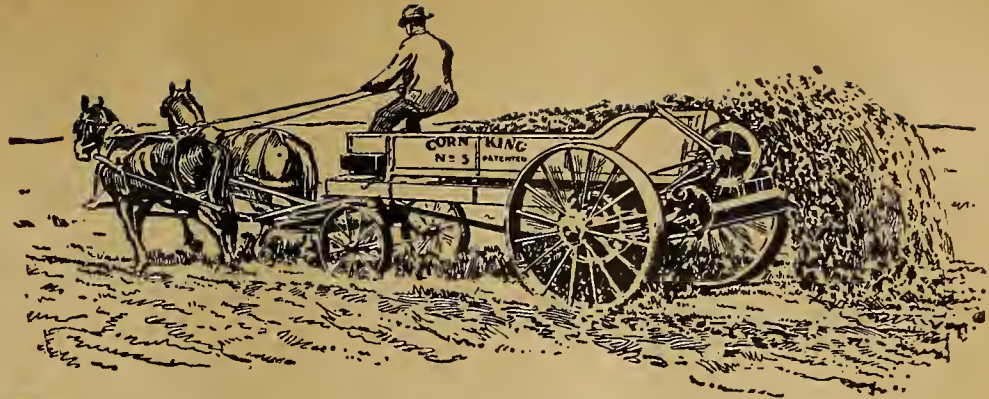
Clover and alfalfa make the conditions right for growing all plants. The right way for me is to plow an old alfalfa-field in the fall. The lime applied to feed the plant will make conditions unfavorable for the white grubs, which are the greatest obstacles to the hill culture of strawberries. Fall plowing should likewise lessen the number of grubs.

During the winter I draw some manure on the ground, which may be a mixture of cow, horse and hen manure, until I am satisfied the soil is sufficiently rich. As early in the spring as the ground can be worked, it is plowed, finely harrowed and marked two feet apart with a horse marker one way. The garden-line is stretched the other way, so the plants come in check-rows two feet apart. When the leaves are just starting to grow, plants are dug from a propagating-bed and rapidly set. One man pushes down a spade, a boy inserts the plant, then the spade is drawn out.

When a row is set, the plants are pressed down with the feet.

We begin cultivation at once with a fine-tooth cultivator narrowed to one foot. The hoeing is very light, when there is no bad perennial weed to eradicate. I find the strong, active boys from the village are the best help I can hire in setting plants and hoeing. The plants are cultivated until October. All the runners are removed, except on the portion used for a propagating-bed. The mulch for the plants will cost but little if oats are sown over the field and cultivated in. A fair estimate of the cost of growing one acre of strawberries on my alfalfa-field is twenty-five dollars for fertilizer, twenty-five dollars for setting plants and fifty dollars for cultivation.

There is no other large item. The cost of baskets I included in the net price I received for the berries. The above are about the results I get when I do all the work on time and do it thoroughly. I will say to the amateur that unless he is capable of doing thorough and painstaking work, he need not expect such returns from the hill culture of strawberries. W. H. JENKINS.



What Is Soil Fertility? How Does It Interest You?

WHAT is soil fertility? Why is its lack considered so serious a matter? Why is it that authorities on better farming agree in considering it one of the most important questions requiring solution by farmers today?

The answer is found in the small average yield of farms in this country as compared with those of other countries where correct fertilizing is practiced, and in the rapidly decreasing quantity of available new land. There are two things that every farmer can do, both of which will make his farm more productive. One is to practice a proper rotation of crops; the other to buy and use an

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Every farm can be benefited by the use of an I H C manure spreader. It will distribute the manure in an even coat, light or heavy, as may be required. Manure spread in this manner does the most good to the soil at about half the expense and much less than half the work of hand spreading.

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cockle, wild oats, tame oats, smut, etc., from seed wheat; any mixture from flax. Sorts corn for drop planter. Rids clover of buckhorn.

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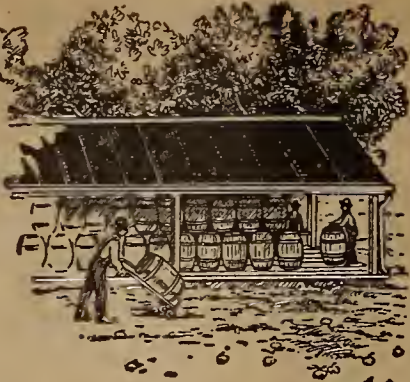
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Farm Notes

Higher Wages—Better Help

EVERY year the question of getting competent farm help seems to become more and more complex. From all over the land comes the cry that it is impossible to get workers to put in the crops and harvest them. Many middle-aged men are giving up the struggle and retiring from the country. They say they can not afford to kill themselves working, and neither can they endure the sight of crops perishing for want of attention, so they move to town and peacefully hurry to their graves through inactivity. The average farmer wants to do his full share of the farm work, but he doesn't care to put in fifteen or sixteen hours the year around when he can afford to hire a man to help.

There is one phase of the question that the farmers rarely touch on in speaking of farm-labor difficulties, and that is the wage problem. Back as far as 1870 farmers were paying about as much for hired men as they are now, yet nobody ever seems to take into consideration the fact that if better wages were paid young men might be attracted to the farms.

In my childhood a neighbor of ours who needed a man the year around, paid a young, capable farmer one dollar per day, furnished him house-rent, fuel, chickens, cow, pig and garden, and considered himself fortunate to have him. That is about as much as the married laborer can get now, and often farmers deduct for holidays and stormy periods when there is only the feeding on hand. Personally, I know of graduates of agricultural schools being offered only twenty-five dollars and board per month, the same wages paid to untrained and untaught workers. On our own farm a young college student (not an agricultural student) worked last summer for twenty dollars per month and board, and was well pleased to get it. To be sure, he was only a boy, and a boy with several fingers off one hand, which rather handicapped him, but he was faithful, honest and intelligent. He set his own price and said he never earned that much before. In my childhood my father paid a man twenty dollars per month and kept a horse for him, putting up with various tribulations in the way of much running to town and staying out nights. Careful inquiry among our neighbors revealed the fact that twenty dollars per month is considered a fair price for a young and inexperienced farm-hand, with one dollar per day on working days for a grown man.

\$240 per Year Isn't Much

Now two hundred and forty dollars per year doesn't look very attractive to the average youth, even if living is thrown in. Why, a good horse costs nearly that much, and what is a young man in the country without a horse and buggy? The farmer objects to having his horse taken out on Sunday or he wants to use it himself, so the hired man must have one of his own or walk. Clothes are higher in price than formerly and cannot be worn as long, and everything else is up in proportion. The time was when a young man could pay attention to a young lady without very much expense, but that time is past. Entertainments, suppers, lectures and all forms of amusement have doubled in price, but the wages have remained stationary. And when the young man begins to think of setting up a home of his own, what can he do with the savings of two hundred and forty dollars per year? It is no wonder the sons of farmers take to town as soon as they are old enough to work. It is simply useless to talk to them about the advantages of fresh air and sunshine and independence later on, when wages are low.

And when the young man rents his own house and works by the day, he can do very little toward laying up money to buy a farm. If he has a capable, energetic wife who will make money with chickens and eggs and garden truck, and who will manage so that her husband's wages do not go for living, they may save several hundred dollars per year, but what is that toward the purchase price of a farm the way farms are selling nowadays, or even as a start toward a farming outfit where he can rent on shares. About the best chance the young farmer with any ambition has at present is to get in with the owner of a large farm and have a working interest. If he finds the right man, he can make money, but the wrong one can worry him to death and find means to cheat him out of his eyes. There is absolutely nothing in it for the young farm-hand now either working by the day or month.

When farmers pay fair wages, they will be able to get good help. Run over the advertisements in any paper and see what is required of farm-hands for a wage of forty or more dollars per month. They must be men of experience, must be able to show that they have made farming pay, must know about managing farm help, must be versed in general farming, the production

of milk, eggs and butter, must have wives willing to help with the housework and board other hired men, must have small families or no children and must have a dozen or more professions at their command. Such men in other professions would command salaries of fifteen hundred to two thousand dollars per year, often more. It takes ability and sense to run a farm successfully, and the man who pays even forty dollars per month should not expect a fifteen-hundred-dollar man. Of course, the average farmer cannot afford to pay even forty dollars per month, but there are hundreds and hundreds who might advance the wages fifty per cent. and make more money than they are now doing crippling along with little or no help. It is penny-wise and pound-foolish to discourage the strong young farmers and drive them away from the country, when kindness and financial attractions might keep them in the fresh air of the rural districts and help save the country from the foreigners who are rapidly taking possession of the farms. Here and there progressive farmers are securing competent helpers by paying living wages, but they are pioneers in the movement that must become general if the farm-labor problem is to be solved.

Mrs. W. C. KOHLER.

The Cost of Canning

THE profits of the canning business depend on the location, what is to be attempted and on the person himself. The cost of the outfit depends wholly on the convenience and capacity of the machine. Some are small and simple, a little better than a clothes-boiler, and cost only a few dollars; others are more convenient, have quick boiling arrangements and cost from ten or fifteen dollars to two hundred dollars. The steam-pressure canner uses dry steam under fifteen pounds pressure or two hundred and fifty degrees Fahrenheit and costs from fifteen to two hundred dollars, according to capacity; other types use boiling water at two hundred and twelve degrees. The price outfit should be selected according to the needs. A small outfit costing twenty-five dollars would fill several hundred dollars' worth of empty cans per season.

If I wanted to put up one thousand cans per week, I would prefer a machine with a capacity of at least two thousand cans per week. I would rather make a big run three days per week than to hammer away every week-day with smaller capacity. Any machine will do fairly well to put up half the daily capacity claimed by the maker, especially when it is in the hands of an inexperienced man.

Cans cost, No. 3 size, plain caps included, sixteen to twenty dollars per thousand, according to the quantity bought, season and point at which purchased; No. 2, about three dollars per thousand less; caps with solder on them, about one dollar and fifty cents per thousand extra. Crates or cases, also freight, must be added. If the goods are to be shipped by freight, buy cans in cases holding twenty-four cans; cost, ten to thirteen cents extra. Labels cost one or two dollars per thousand. JAMES D. BOWMAN.

Some Summer Thoughts

Perpetual motion: the housewife at work.

Never be satisfied till you are out of the scrub-stock class.

There is good luck in a horseshoe when it is fastened to the horse's foot.

Some things will not work on the farm; you cannot bluff good crops out of the soil.

Don't overload. It is a wise driver who knows just how much his team can pull.

Are your hogs of the one-strip-lean kind? Add another strip by feeding more alfalfa.

To derive the greatest profits from the dairy, have at least one-half of the cows freshen in the fall.

Horses sometimes get so expert with their noses that they can lift the hinged lid of the grain-box if it be not fastened down. It is a wise plan to have a hasp and lock on every such bin. Cheaper than to have a horse sick and perhaps die.

Sometimes there is use for a pair of bars in the stable to keep stock apart. We have found that a little notch about two inches wide in the end of the bars, which will hook over the slot into which they slide, saves many chances of the animals getting together and harming themselves.

Poultrymen who feel that they would like to ship to some commission merchant in a near-by city, if they could only be assured of the honesty and reliability of such merchant, by writing us may learn the address of firms with whom their present shippers have nothing but words of praise. There are honest commission men in the business, if one can find them. We have gone to a good deal of expense to place ourselves in position to advise our readers relative to profitable selling, which we do free of charge.

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Here's the greatest hay press on the market—the crowning triumph of nearly 50 years of Experience and Success—a machine with many vital points of superiority over all others.

The Plunger and all working parts of this press move slowly, reducing friction and wear; pitman has long travel giving big feed opening—takes in big charges and presses them slowly but with ENORMOUS POWER—features ABSOLUTELY NEW in power press construction. Most powerful belt press built—4 H. P. Engine delivers more power to plunger than a 6 H. P. on any other press. Has Instantaneous Tightener for starting and stopping—no complicated friction clutch; quick acting Emergency brake; low hopper, easy to feed. Can use any engine.

All steel construction, light but powerful.
Capacity 10 to 25 tons per day.
We also make a full line of horse presses, both one and two-horse, two and three-stroke. We have what you need—all our presses guaranteed. Catalog free, write today.

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2226 Ky. St., Quincy, Ill.

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ANYBODY CAN LAY IT

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FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special Prices to these States on request.

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THREE-PLY Weighs 55 lbs., 108 Square Feet, \$1.50 per roll.

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You can't afford to buy any ensilage cutter until you have examined the Blizzard which has 40 years of success behind it. Equipped with improved wind elevator, knives that can be adjusted while running. Self-feeding table. Tested by 50% greater strain than is ever called for in actual use. Fully guaranteed. Sold ready for use. Only 3 pieces. Write for "Why Silage Pays" and "The Evidence." Sent free together with latest catalog of Blizzard cutters.

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Many farmers stick to wheat raising mainly because clover follows it in the rotation. But why not get the best possible out of both crops? No crop returns better profit for the right fertilizer than wheat. What is the right fertilizer? That depends on the soil and on what fertilizer you have used on it. The longer you have used phosphate the sooner it will pay you to balance it with

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Poultry-Raising

How to Make Poultry Pay

EVERYONE interested in poultry is anxious to know how to make the most money from the business. This is the hardest of all questions to answer. Poultry, like all other means of making money, must be studied until one is thoroughly acquainted with every side of it. It cannot be learned in a year or two, or by reading a book on the subject. One must learn the essential details by actual experience.

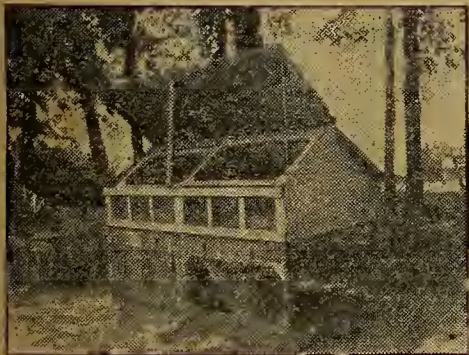
We are hearing all the time of the great poultry farms over the country which have failed and are for sale, because there isn't any "money in the poultry business." Some of these plants were possibly compelled to close because of natural conditions or some unlooked-for accident, but the majority closed simply because there was not a business man at their head. It takes a business man to succeed with poultry, as well as it takes a business man to manufacture steel rails. It takes a man with natural ability to direct the affairs of the poultry business, as well as it takes a man with natural ability to direct a large battleship on the high seas. If the ship has an accident and sinks, it is not the ship's fault, but the fault of the man at its head; and, likewise, if a certain poultry plant fails, the whole industry should not be made to suffer for the disability of one man.

After the question of the poultryman, the next important factor to consider is the location of the poultry farm and its natural advantages and disadvantages. The best location is one near a large city where the demand for eggs and poultry is regular. However, the farm should be far enough from the city so that the prices of feed and other essentials is not too high. It is better to locate your plant near some railroad, where you will be able to ship your poultry and eggs without change to the city. The natural advantages to be sought after are: a rather sandy soil, so that after a rain it will easily dry off; a gentle slope to the south, or else a wind-break to the north. Under no conditions attempt to locate your plant on low and damp ground. You will never succeed where there is dampness.

A Few Hens May Be Money-Makers

Do not get the idea that there is no money in poultry unless you raise poultry on a large scale. Remember that it is the profit per hen that counts, not the profit per flock. If you make fifty cents from a hen, you are doing better than the man who has a thousand hens and comes out even. Many a time the man with six hens and a little coop has made more money in a year than the man with the large and apparently successful poultry plant. Pay strict attention to the little details. It is the little things that are big in the poultry business.

One of the best ways to start is to get six hens, and grow. There is an old and true saying that "Rome was not built in a day," and the same holds true with the poultry business. You cannot become a "big bug"



The Leghorn coop

in the business in a year or two. You must start little and grow big rather than start big and grow little.

After you have settled the question as to the location of the plant, the next thing that comes to your mind is the kind of buildings you will have and the variety of chickens you will keep. The latter question rests largely with the personal likes and dislikes of the poultryman himself. If you are to have an egg-farm, the writer would advise you to select your variety from the Mediterranean class. These include the Leghorns and Minorcas. Personally, the writer favors the Leghorns. They are light feeders, are active and industrious, and lay large, hard-shelled eggs. They mature early; it being no uncommon thing for the young pullets to lay when but five months of age.

The next question is the type of house to be used. There are many different types of houses of all sizes and shapes that have been successful under adverse conditions. The general opinion seems to be that Leghorns are so active that they could not be confined in small coops such as are used to such a large extent to-day. The writer is able, however, to prove that those who believe this have the wrong idea. In a test, the writer brought six White Leghorn pullets from a farm where they had had free range over

two hundred acres of land. They had never roosted on anything but fences. They were placed in a small coop three by six feet. This coop had two stories and a total ground and floor space of thirty-six square feet.

They were kept in the coop for two months. They did not die, as the writer expected them to, but grew fat, and three weeks after placing them in the coop the writer was surprised one evening to find two eggs in the nest. They continued to lay (this was December 11th) all through the winter, and one Sunday morning, when the temperature was eighteen degrees below zero, the writer found four eggs in the nest. Think of it! Four eggs from six pullets, and in such weather! There were hens of a different variety in the coops next to the coop the Leghorns were kept in, that had the same care and attention, that did not lay a single egg the whole winter. The Leghorns not only supported themselves, but the other hens, also.

The Small Coop Has Some Objections

The only objection to the small coop is that the poultryman is compelled to receive the full benefits of all storms that happen to be raging when he is attending to the wants of the fowls.

The picture of the small flock laying-house, also shown here, is a fine one for the beginner. It only costs about ten dollars to build and will easily care for six Leghorn hens and a cock. It is warm and of sufficient height so that the poultryman is able to step inside and be sheltered when he is caring for the chickens. It has two stories and is four by eight feet, having a total floor space of sixty-four square feet.



Small flock laying-house

The care of the fowls is one of the important things that cannot be neglected. The poultryman must keep everything clean and sweet about the houses and yards. Every yard should be swept clean every day when weather conditions are favorable. They should also be frequently spaded. Never rake up a pile of rubbish in one corner of the yard and leave it to rot and form a breeding-place for all manner of disease. Always burn everything as soon as collected. Keep the dropping-boards clean and free from filth. They should be frequently scrubbed. The litter should always be clean and sweet. Never allow it to become damp and full of droppings. Keep the water fresh.

Keep the fowls working. Never allow them to become idle. If given plenty to do, the poultryman will find that the overfat hen is a myth. Keep the litter deep, so that they must work for every grain of food they get. At noon a moist mash should be given. Do not forget the grit, for it is the most essential little thing about the poultry business.

The question of feeding is one of the most important the poultryman has to answer. It is here that so many have failed. The rations given below are ones that have proven successful in the writer's own knowledge. They are for the feeding of laying hens. In the morning a feed of dry grain composed of two parts whole wheat, one part cracked corn and one part whole oats is scattered in the litter. It is fed at the rate of one quart to twelve hens. About ten-thirty o'clock sprouted oats is fed in the proportion of a block six by eight inches to one hundred hens. Be very careful in feeding green feed, for it is easy to overfeed.

At noon a wet mash composed of one pint of green cut clover, a small handful of oyster-shell and about the same amount of beef-scrap is fed. This is mixed with water and cooked on a stove until it boils for about ten minutes. Then the water is drained off and enough wheat-bran mixed with the mash to make it crumbly. It is seasoned with cayenne pepper. It is feed enough for a dozen hens or more. At four-thirty o'clock they are again fed the same grain mixture as in the morning, only a little more is allowed, especially when the weather is cold. In cold weather, as well as in all other weather, be sure to provide plenty of fresh water for the hens. Remember that they cannot produce eggs unless they have plenty of water. It has been found that fifty-five per cent. of the total weight of the body of a Leghorn hen is water, and sixty-five per cent. of an egg is water.

We have seen that the essentials to the successful raising of poultry and eggs depends on the following points: (1) the need of actual experience on the part of the poultryman, (2) he must be a business man, (3) the location of the plant must be favorable, (4) must start small, (5) a good breed must be selected, (6) a good house must be built, (7) proper care of the fowls and (8) judgment in feeding. CHESLA SHERLOCK.

The Hen

By Berton Braley

CONSIDER the hen—the industrious hen. Not the hen who lays an egg now and then; But the steady little hen And the ready little hen Who lays an egg to-day—and to-morrow lays again; She's the cheerful little helper for the thrifty farmer-men. While the other hen just scratches, Wasting energy in batches, For the single bug she catches. Why, the hen I sing about Doesn't wear herself all out Chasing round. She has found That the food which she is given keeps her pretty well in trim And she's grateful to the farmer—so she lays her eggs for him. While the other sort of hen Only lays a little, when She has nothing else to think of—which is only now and then. Consider the hen—the industrious hen. Feed her right, and house her well, And your revenues will swell Higher than they've ever been. Chuck the lazy, eggless hen She's a snide Even fricasseeed or fried— But you take this in your ken, That the steady little layer is a joy to farmer-men. She's a wonder—is the hen!

What Causes Roup?

SNEEZING and swelled eyes in fowls are symptoms of roup. A swelled and inflamed vent is a symptom of inflammation of bowels and a diseased liver. Sometimes roup attacks the bowels. It is possible that birds so affected are eating some poisonous substance, or getting water from some pool that is poisoned by some decaying matter. Is there any dead animals or fowls they can get to? What about the food they are getting? There is no disease without a plain cause. Find the cause. Promptly remove from the flock any hen that appears to be ailing, and coop her by herself. Give her a quarter grain of quinine and soft food once a day for four or five days. If badly diseased, kill, and burn, or bury deep. Get a dime's worth of potassium permanganate, and put a little in the drinking-water of the flock. Put in just enough to color the water a decided red. Clean out the houses, and disinfect well with any good disinfectant. Have the yards plowed or dug over, and scatter fresh lime over them. If it can be managed, grow garden-truck or corn in them next year. Or, sow rye now and keep the hens out until next spring. Grow a crop in the poultry-yards once in three years if possible, and the soil will be all right. If it is roup, ill-ventilated and unsanitary sleeping-quarters are most likely the cause.

FRED GRUNDY.

What a man is at home is what he is most of the time, and what he is most of the time is what he really is. What he is away from home may represent what he would like to be.

The Colony Houses

EACH of the fifty model colony houses in which the Connecticut Agricultural College contest hens are kept is a modification of the original built by George Gillette of Sugar Brook Poultry Farm, Central Village, Connecticut—modified as to size only. Each is twelve feet square and houses two pens of five birds. The partition through the center is about one third wire netting, and the window spaces at the front and sides are covered with this, while white cotton cloth storm-curtains may be swung down to protect from bad weather. All else is of wood, and the houses are set on skids, to be drawn to position by a yoke of oxen. There is no floor except the ground, which is covered with a litter of corn-husks and shavings.

Everything in the houses is movable and readily taken out for cleaning. There is ample ventilation, and the sunshine pours into both sides all day long. At the front outside corner on each side is a small door—



This house may be readily cleaned

way and sliding door, leading to a runway into the yard fenced in by wire fencing. Each yard is twenty by fifty feet, allowing two hundred square feet of room for each egg-producer. The houses are set in four rows on a sunny southern slope, each row and the entire plant being fenced in with eight-foot wire fencing. J. OLIN HOWE.

WELL PEOPLE TOO

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Shep—The Good Citizen

By G. Henry



WE MAY be writing about Shep, or Maje, or Dick, or Tom, or Billy, or Frank, or Watch, or Curly. It doesn't matter one mite his name—we are talking about one of the finest fellows the farmer and the farmer's friends ever associated with: his dog.

Many ordinary people who have known dogs—and such people love them, of course,—agree with new-thoughtists to this extent: all animals may have souls; dogs certainly have.

I see the lady of the house turn up her nose and sniff because Shep smells a dog smell. She recalls the time he crawled on the white spread of the spare bed. Of course, he was sick, but it is hard to forget. I hear little Johnny wail about the time Shep mistook his new fur cap for a wood-chuck and mauled and chewed it. I hear the hired man cuss about the time Shep chewed up that new harness, and the farmer blamed the hired man—but Shep was a puppy then.

Also, I remember that Shep goes for the cows in the big pasture in the morning or at the close of day, and brings them to the barnyard, every one. I can see him patiently enduring little Johnny's wooling and tail-pulling. I can see him chasing a stray cow out of the lady of the house's pet spot in the garden.

I can see—it's clear before my eyes because it happened at my home—I can see Shep, now grown old and pretty cranky, permitting Baby Jack to pull a piece of fine meat literally from between his teeth, and wagging his tail and smiling a dog smile—when truth to tell if it were a grown-up person who dared the rash theft, Shep would fight like a tiger for his own.

I can see young Shep and old Shep jumping and frisking and fairly howling his delight when the man of the house and the lady of the house return after a week's absence on a visit.

And I can see old Shep, disconsolate, heartbroken, his head held low, his tail drooping, wandering about the place, whining now and then, with no appetite, for two or three days while baby's body lies cold in death in the best room—and finally sneaking along on the other side of the fence (for a dog's grief is not recognized by us superior animals), step by step with the others following the baby's trip to its last resting-place preparatory to the journey to the great beyond, the sincerest mourner of them all, excepting perhaps baby's mama.

As one learns human nature, one's respect for dog nature increases!

Yes, I think Shep is a pretty good citizen—and he may have a soul, after all. If he hasn't, I'm sorry, for I'd like to meet Shep when I go to the other place.

The Flicker

IF THIS common member of the woodpecker family didn't have any other redeeming feature, its services as an "ant-eater" should protect it at all times from the pernicious habit that men and boys have of using it as a target when regular game fails them on their hunting-trips.

It is the best ant-destroyer that we have; for, according to the Biological Survey, about forty-three per cent. of its entire food



consists of these troublesome little insects. It also consumes grasshoppers, crickets and caterpillars, besides other ground-roving insects. Its vegetable food consists, principally, of wild fruits and weed-seeds.

It spends much time on the ground, not only in the fields and woods, but in town, where its large size and red nape are a familiar sight on the lawns and in the gardens. It is in town, too, that its greatest annoyance is noticed—the habit of drumming on metal roofs, eave-spouting or metal ornaments of houses, as well as on the "cans" on top of telephone-poles. Flickers often do their drumming early in the morning when people of the neighborhood wish to sleep.

The flicker is so well known that it is called by over a hundred different names. A few of its aliases are, "wake up," "yellow-hammer," "highholder," "clape" and "pigeon-woodpecker."

H. W. WEISERBER.

Garden and Orchard

Preserving Canna-Roots

THE tops of cannas should be cut off after the first appearance of frost and the roots lifted entire. The clumps should be thoroughly dried upon a barn floor or in a dry shed until cured, after which they may be kept over winter by placing them on the floor or on the shelves in a cool, dry, frost-proof cellar. The causes of failure in storing cannas are imperfect curing, storing in too high temperature, allowing them to become too dry, and sometimes in permitting them to freeze slightly before lifting or in the curing. A cellar that will keep Irish potatoes is a good one for storing cannas.

The clumps are usually divided in the spring, and the divisions may be started in shallow boxes or pots in a light sandy soil. Water sparingly until growth begins, when they should be potted in a rich soil. A steady heat of sixty to sixty-five degrees Fahrenheit is necessary, and if this can be given, they may be started in the house or in a hotbed.

ALVIN C. BEAL.

Good Vinegar

ABOUT the best way to make apple vinegar is as follows: The first step in the manufacture of apple vinegar is the preparation of a pure and clean cider. Vinegar made from watered cider will be thin and weak. Vinegar is produced from cider by the action of the vinegar ferment floating upon the surface yielding an aromatic product of fine flavor. Cider vinegar is more acid than ordinary vinegar, on account of the presence of malic acid in addition to the regular amount of acetic acid. Cider slowly ferments into vinegar when kept in casks at ordinary temperature. The addition of a quart or more of good vinegar to the cider will hasten this process. A temperature of eighty-five to ninety-five degrees Fahrenheit is about right for the most active fermentation. The presence of air is essential in vinegar fermentation; for this reason the bung-hole should be left open or loosely stoppered. The completion of the fermentation will have taken place when the temperature of the vinegar is no longer higher than the surrounding air. Although it is necessary to keep the fermenting vinegar in a warm room free from drafts, it should be removed to a cool place for storage. Vinegar will keep better if it is first settled, then drawn off into clean barrels or jugs. The presence of eel worms or mites is not to be desired in good vinegar. Tightly stoppered, completely filled containers will keep vinegar free from this condition. Boiling and straining through bag filters is sometimes resorted to, to produce a clear vinegar that will keep well. Freezing neither injures nor benefits cider vinegar. There is, however, a possibility of bursting the containing vessel when frozen hard.

Good vinegar can be made by fermenting crushed apples or apple pomace for a few days, then adding an equal amount of warm (not boiling) water to the mass. In about one day it should be pressed till the liquid is extracted. This liquid should be exposed in an open cask for several days in a warm room, when it will be found good vinegar.

S. D. CONNER.

Handy Small Fruits

FOR years we have had small fruits, planting them in the permanent garden, along fences and between fruit-trees in the orchard, but we had poor success until we grouped them in the back yard and depended more upon good care than upon large numbers of bushes and vines. When there is any small fruit to sell, it goes to market, but we do not regard it as a market crop, the principal fruit crops with us being apples, pears and plums.

The chief advantage we find about having things in the back yard, aside from the real beauty of the vines and plants, lies in the fact that it is handy to care for the plants, handy to pick the fruit and handy to frighten away the birds. The very fact that the back yard is the fruit-garden stimulates effort in keeping it nice. Many steps in the busy season are saved. Formerly the grass from the lawn was raked off and allowed to go to waste, but now it mulches the plants and fertilizes the ground. It would have been absurd to run to the field with a bushel of freshly cut grass or a basket of weeds, but now they keep down the weeds around the bushes and conserve the moisture when it is most needed.

We have water in the kitchen and an outside well for various purposes, and when we use the outside well, it is almost second nature to toss the waste-water to the currant-bushes, the strawberries or the cherry-trees. Later in the season the dahlias and other plants grouped around the old well thrive under the August sun because of the liberal supply of waste-water. One year our neighbors with large strawberry-patches far from

the house lost all their crop because no rain fell at the critical time, but with our limited bed in the back yard a few yards from the pump it was easy to rig up a little trough and carry enough water there to irrigate the patch. We thoroughly soaked the patch every few days, not merely sprinkling it every day, and we had all the berries we could use for the table and for canning.

Another advantage we have discovered is that everybody willingly lends a hand in the work of caring for the fruit. The work of bringing up fertilizer, trimming the vines, keeping down the weeds and other heavy tasks the men do without feeling burdened, for, having only a few plants and those handy, they can do fifteen minutes' work even on busy days and never mind the task. The lighter work, like picking the fruit, sprinkling with poison and light pruning, the men never have to do, but then that is no burden to anyone. Often the warm dish-water is carried to the vines, as an additional fertilizer, particularly to the grape-vines. The wash-water never goes into the sink in summer-time. It is too valuable in the garden.

We would not go back to the old way for anything. The rhubarb and asparagus beds have taken up their place in the back yard, and around the edge are the cherry and plum trees. It is a delightful spot from spring till fall, and to work in it is a pleasure. The fruit is safe from chickens and farm animals, and comparatively safe from birds, since we have plenty of active cats. Besides all this, on a small farm the back yard ought to be utilized to save every possible square foot of farming land. There is no better way of doing this than to raise choice fruits near the kitchen door under the eye and hand of the mistress of the farmhouse.

MRS. W. C. KOHLER.

No matter who gets elected president, the farmers will have to feed him.

An acre set to a catalpa-grove, when the trees are four or five years old, makes a nice, cool, shady run for hogs. The hogs do not damage the trees, and you get a good crop of fence-posts from the land and benefit the stock at the same time.

Mr. Greiner's Practical Ideas Liming the Land

CLOVER will not grow in sour soil. Most of our common garden-vegetables likewise refuse to do their best in such soil. Don't imagine, however, that where clover grows and vegetables do fairly well lime may not be of service. Clover springs up spontaneously anywhere in my strong loam, and I grow good crops of vegetables. Yet I find that an occasional dressing of lime, used in addition or even in place of the annual heavy application of stable manure, has a decidedly beneficial effect. By leaving out the manure for one season and using a little lime, we may save a considerable expense and secure even better crops.

What Lime and How Much?

Only the best, in fact a special, lime can be used for making the lime-sulphur solution. Any old lime will do for liming the land. It may be fresh or old, water-slaked or air-slaked, so long as, for even distribution through the soil, we have it in dry or dust form. If we buy fresh-burnt (stone or lump) lime, a ton of it will be fully sufficient for one acre. This means about twelve and one-half pounds to the square rod, or for a little home garden, say forty or forty-two feet by one hundred feet, about two hundred pounds. If the lime is old, especially if air-slaked (carbonate of lime), it is, of course, much weaker than the other and nearly double the quantities named may be used to advantage.

How to Apply Lime

The addition of water, or exposure to rains or damp air, will soon put the lump lime into perfect powder or dust form. It is then ready for application. The farmer who has a fertilizer-drill meets with less difficulty in applying the lime evenly over and through his land. If the gardener can get a farmer of his vicinity to apply the lime, it is by far the best and easiest way to get out of a mean job. For such it is, if the application has to be made by hand. I don't like it. But I go at it with a will rather than do without the benefits I can secure from the lime. It means wearing old clothes. It means inhaling some lime-dust. It means a good bath and change of clothes afterward. The lime is carted out and distributed in barrels or boxes over the area to be treated. I fill a coal-scuttle with lime, dip the lime out with a hand-scoop (tin scoop holding about two quarts) and scatter it as evenly as I can over the land as I go along. It does not do as good a job as can be done with the drill, but it will do.

An Insect Partnership

THERE are many interesting partnerships among lower animals, and one of the most interesting of these is the mutual benefit association of ants and plant-lice. Since the ants are perhaps the cleverest of all insects, small use have the aphids for brains of their own if they can make use of ant-brains. The aphids not only use the sap of plants which they pump up through their tube-like mouths for their own nourishment, but within their bodies change it into honey-dew and give forth this sweet fluid from their alimentary canals when the ants ask for it. It is really a comical sight



Patting the louse on the back

to watch an ant come up to an aphid and pat it on the back with her antennæ, immediately after which a drop of honey-dew will be produced, unless perchance the aphid has already been milked dry by other ants. In consideration for this food the ants give the aphids protection in many practical and wonderful ways. They attack those arch enemies of the aphids—the larvæ of the ladybugs and lace-winged flies. In fact, they will attack any insect that feeds on the aphids, and even when we disturb a colony of aphids which ants are protecting, the ants will take up the aphids as a cat does a kitten and try to carry them off to a place of safety.

This protection given plant-lice by ants often goes farther than this. Some species of ants build little mud stables around their ant-holds.



A mud ant-stable

Such stables are found in Ithaca, New York, on dogwood. The mud is brought by the ants and plastered into a globular chamber built in the forks of twigs; within this chamber the aphids go on sucking the sap of the dogwood, protected from enemies and the weather. A tiny circular door allows the ants to go in and regale themselves on the honey-dew.

Perhaps the most wonderful story of ant protection to aphids was discovered by Professor Forbes in the corn-fields of the Mississippi Valley. These aphids deposit, in autumn, their winter eggs under the ground in corn-fields, often in the corridors of the little brown ant, and the ants give these eggs solicitous care. The following spring, before the corn is planted, these eggs hatch, and the ants take the young aphids and place them on roots of knot-weed, which grows as a weed in the fields and which, weedlike, gets its roots into the soil and at work much earlier in the season than does the corn. After the corn germinates, the ants remove the aphids to the corn-roots.

Often in our gardens the aphids are so hidden under the leaves that the first sign of their presence is a procession of ants up and down the stem of the infested plant. Then if we are wise we will prepare a wash of strong soap-suds and apply it to the plant thoroughly, being sure to drench the undersides of the leaves; for soap-suds seems quite as fatal to plant-lice as it is to tramps. To rose-bushes such a wash should be applied every week or two in the early part of the season.

ANNA B. COMSTOCK.

Whether a thing is right or wrong, often depends upon the way a man looks at it—whether from in it out or from out of it in.

The man who cleans up his fence-corners need not call attention to the cleaning that needs to be done on his neighbor's side. His neighbor will be more apt to follow an example than take advice.

Selfishness

There is a good deal of selfishness on our part in admitting to our columns only such advertisements as we know come from reliable firms. We are desirous of having your cooperation and good will. This we can get only by deserving it. And we strive to deserve your confidence because we believe in honesty and square dealing in all business transactions. We want our advertisers to maintain the same high standard of business integrity that we follow ourselves.

Crops and Soils

Haul Out the Manure

NEARLY one half the money value of manure is lost by piling it up in the yard. This is a startling statement and should receive the attention of every farmer. It is a poor business policy to allow one half of this important farm product to go to waste. It should be considered a valuable crop and handled in such a way as to produce the greatest profit for the farmer.

Manure contains the three essential plant-foods: nitrogen, phosphoric acid and potash. About one half of the plant-food it contains is nitrogen, and here is where the greatest loss occurs.

When fresh manure is piled up, it soon begins to heat and ferment, due to the action of bacteria. By this process the plant-food elements are changed from insoluble to soluble compounds ready for plant use. Most of the nitrogen is changed to ammonium carbonate, which is very volatile. The heat of fermentation breaks up the ammonium carbonate, and the nitrogen escapes in the form of ammonia, the odor of which can be detected around manure-piles. The soluble plant-food is also dissolved by the rain. The drainage from manure-piles is very rich in plant-foods and should not go to waste.

One ton of fresh manure is worth almost as much as two tons of rotted manure. Fresh barnyard manure is worth about \$1.98. After it is rotted, it is worth only \$1.02. This is a source of tremendous loss to the farmer and stockman.

If it is hauled out into the field as fast as it is produced and spread evenly over the ground, no heating can take place. Here the process of rotting takes place very gradually. During the winter this process is checked to a great extent by the frost. The insoluble plant-foods are changed into soluble form very slowly and are immediately absorbed by the soil, which has a great attraction for them. It requires a longer time for the manure to take effect, but the loss in plant-food is almost entirely avoided.

It has been shown that about seventy per cent. of the plant-food of manure is in the urine. If this is thrown on the manure-pile, as is usually true, it soon filters through and is washed away. The only way to save it is to keep it in a water-tight reservoir. This is a lot of work. The best way is to haul it into the field with the solid manure, where the washings and leachings go directly into the ground. When the ground is frozen, the manure is frozen, also. In the spring when thawing takes place the ground attracts the plant-food so strongly that very little goes to waste.

Recent investigations conducted by the Maryland Agricultural Experiment Station are very interesting in this connection.

	Corn per acre	Wheat per acre
Unmanured land	38.1 bu.	16.1 bu.
Fresh manure	70.7 "	19.7 "
Rotted manure	65.1 "	19.1 "
Gain from fresh manure.	32.6 "	3.6 "
Gain from rotted manure.	27.6 "	3 "
Gain of fresh over rotted manure	5 "	6 "

Manure hauled during the winter can be applied profitably as a top-dressing to fall-plowed land which will be used for a corn-field the next summer. By the use of the disk harrow it is easily worked up so that it will not interfere with planting and cultivation. It should not be applied too heavily, however. Experiments by the same station show that a top-dressing is far more effective as a fertilizer than when plowed under.

	Fresh Manure			
	Corn		Wheat	
	Grain bu.	Fodder lbs.	Grain bu.	Straw lbs.
Before plowing	87.2	6,950	20.3	1,080
After plowing	98.1	7,500	22.3	1,160
Gain by using as top-dressing	10.9	550	2	80

	Rotted Manure			
	Corn		Wheat	
	Grain bu.	Fodder lbs.	Grain bu.	Straw lbs.
Before plowing	82.3	6,550	19.8	760
After plowing	82.6	6,450	20.7	960
Gain by using as top-dressing	.3	100	.9	200

These figures prove that it is a paying proposition to haul manure during the entire year. It requires the same amount of labor to handle it whether it is worth fifty per cent. or ninety per cent. of its total value. During the winter there is also a slack of farm-work, and by hauling out the manure one saves a great deal of valuable time in the spring when the farmer is always crowded with work.

W. J. LUETHE.

If there is something you want to be sure to remember, associate it with something you are already remembering.

A Balanced Corn-Cutter

WHEN cutting corn with an ordinary bought-in-the-market corn-knife, I avoid fatigue and considerable danger of injury to myself by doing two things to the new knife. First, I dull the edge thoroughly from the handle half-way up to the end of the blade on a grindstone. You can't cut your fingers then so readily; besides, that part of the edge is never used to cut corn. Next, I either wrap the blade just above the handle with soft twine until it makes a comfortable grip for the hand, or else I totally remove the handle and put on a new and longer handle, so that you can grasp the knife at its center of gravity. It takes but little effort to strike through green corn with a sharp knife. To recover the knife and return it from the blow ready for another one is what makes the wrist sore. Grasping a knife at the extreme end of it makes this work much harder; grasping the knife near the center of gravity makes that part of the work much easier, with practically no difference in the strength required for the down stroke.

PAUL R. STRAIN.

Repair the Corn-Knife

IF THE handle on your corn-knife is broken, don't throw it in the junk-pile. Simply saw off eight inches from an old ax-handle, and saw a slit down the center. Insert the blade, and rivet it. You have a better handle than is ever made on a corn-knife.

JOHN M. NEWTON.

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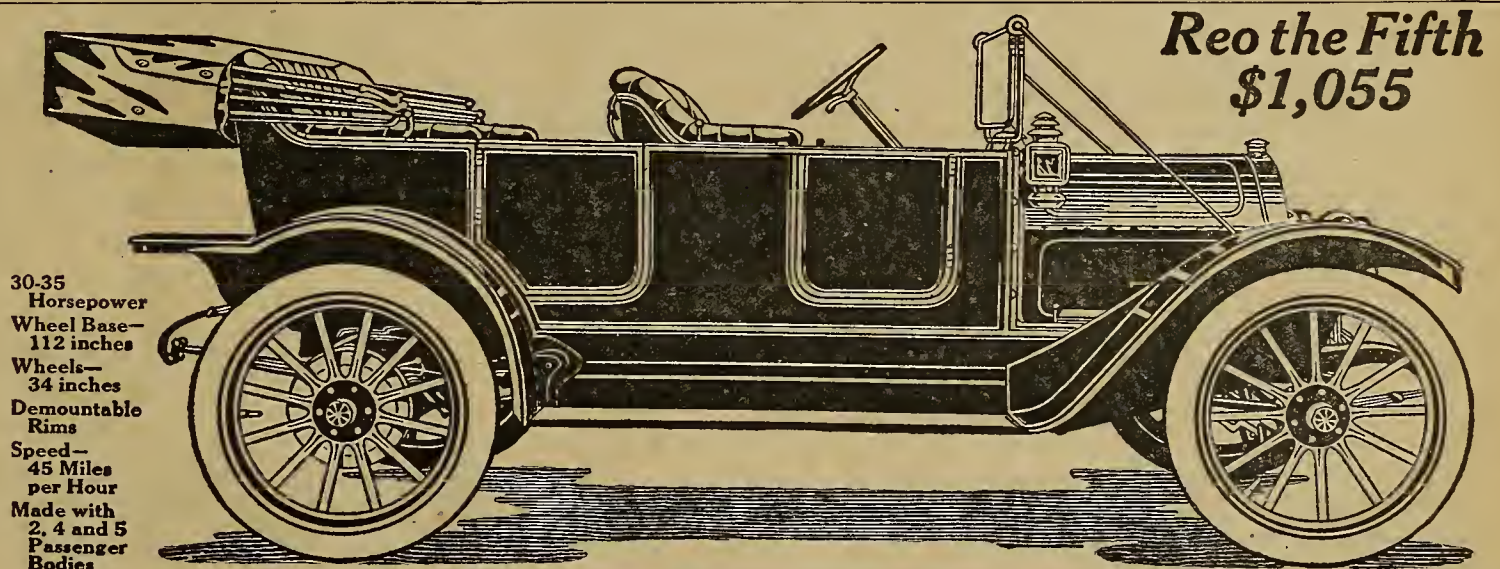
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The Center Control

By R. E. Olds, Designer

Nearly every builder of high grade cars is designing a center control.

In another year, cars with side levers which block a front door will be so out-of-date as to hardly be salable.

Bear this in mind in selecting a car. The side lever car is now a back number, as every maker knows.

Left Side Drive

In some cars the side levers are merely moved to the center. That idea won't do. Men want to get rid of the reaching. They want the front of the car to be clear.

In Reo the Fifth there is only one lever, and that is placed close to the seat. All the gear shifting is done by moving this lever only three inches in each of four directions.

There are no brake levers, for both the brakes are operated by foot pedals.

This arrangement permits of the left side drive, as in electric cars. The driver sits close to the cars which he passes. He is on the up side of the road. In making any turn which crosses a road he is sitting where he can look back.

That is the greatest reason for the center control—to permit of the left side drive. Every car is coming to it as fast as models can be changed. The side levers and the right side drive are going out at once.

This Year's Sensation

Reo the Fifth, with the center control, has been this year's sensation. Our spring output was five times oversold.

In all the 25 years I have spent in this industry, I have never seen such a popular car.

It is this amazing demand which has driven makers to the immediate adoption of center control.

R. M. OWEN & CO., General Sales Agents for REO MOTOR CAR CO., Lansing, Mich.

Canadian Factory, St. Catharines, Ont.

But That Isn't All

There are other reasons beside center control for this car's immense popularity.

It is the final result of my 25 years spent in car building. In every detail it marks the best I know.

The cars are built under my supervision. And I insist on absolute perfection.

The steel is twice analyzed, before and after treating.

The gears are tested in a crushing machine of 50 tons' capacity.

Parts are ground over and over to get utter exactness. The parts in each car pass a thousand inspections.

Engines are put through five severe tests—48 hours in all.

Finished cars are tested over and over.

There are in this car 15 roller bearings. Ball bearings are nowhere used, save in the clutch and fan.

The bodies are finished in 17 coats. The seats are luxurious. The tonneau is roomy.

With a lifetime's reputation at stake on this car, men know I am mighty careful.

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And the underprice has been another sensation. We fixed the initial price at \$1,055, which is \$200 below any car in its class.

The price of this car must soon be advanced, because of advancing materials. It is much too low. But the price remains at \$1,055 while our present materials last.

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Live Stock and Dairy

Feeding Much Silage

LAST fall I put up enough silage to last nearly through the summer. Last winter I expected to feed for roughage alfalfa-hay at night and silage in the morning, as I did the previous winter. But when alfalfa and clover started off in the fall at twenty-three to twenty-five dollars per ton, I decided to feed silage both night and morning and use no hay or other roughage. So from October 10th to February 15th I fed from forty to fifty pounds a day to milch cows, besides about five pounds of cotton-seed meal and one or two pounds of gluten on the silage. The results were more than I expected. By February 15th the silage was getting low, and I substituted alfalfa-hay for the silage at night, with the grain ration practically the same.

Most authorities advise against using silage as the sole roughage and recommend alfalfa or clover hay for one feeding daily, but I believe, for the man who has trouble in raising alfalfa, that silage balanced up with cotton-seed meal, gluten meal and distillers' grains is hard to beat as a milk-producer. The cows never tire of silage. In fact, they are always greedy for it and clean up stalk, cob and all. S. H. PLUMER.

EDITOR'S NOTE—The feeding practice above described is interesting because seldom practical except for periods of a few days at a time when tiding over a temporary shortage of dry roughage. Considered from the standpoint of the best welfare of the cows, if long continued, there are good grounds for believing that such a heavy diet of succulent and highly concentrated feeds such as cotton-seed meal and gluten meal may endanger the digestive functions of the cows so fed. Even if trouble does not follow such feeding, it will be best to safeguard by feeding some dry roughage, like dry straw or corn-stover, and lighten up heavy concentrates with some wheat-bran or distillers' dry grains. Mr. Plumer's ratio was much too narrow (unnecessarily rich in protein material), the ratio being about one part of protein to three parts of carbohydrates, whereas it should be below one of protein to five of carbohydrates for the greatest economy of feeding producing dairy cows. The ratio may well approach one to six of these elements. Mixed pasture-grass at its best has a ratio of about one part of protein to six of carbohydrates. When alfalfa-hay, clover-hay or mixed hay becomes too expensive for feeding, some good straw, corn-stover, or both, can be fed for dry roughage to advantage, and some wheat-bran or dry brewers' grains to lighten up the concentrates. Such addition will make a safer ration and should not detract from the milk production. The cost of the ration should be somewhat reduced by the change indicated, since the surplus of protein in the ration fed by Mr. Plumer is not the most economical way of providing for the maintenance of the cows. If ten or twelve pounds of oat or other good, bright straw, or a like quantity of corn-stover, is fed in connection with forty pounds of corn-silage and a concentrate mixture made up of three pounds of cotton-seed meal and three pounds of wheat-bran, or an equal quantity of brewers' grains and one pound of gluten meal, the ration will be put in a better balance and made more natural and safer for the animals.

Keep the Pigs Healthy

THE common cause of sores and skin disease on little pigs is wet, filthy bedding. The remedy is to put the pigs into a new, clean, dry bed in a new pen. Dip each pig in a lukewarm, 1/100 solution of coal-tar disinfectant or dip. Repeat the dipping as required. Paint obstinate sores with full-strength tincture of iodine if they do not readily heal from the effects of the dipping.

Mix lime-water in the slop of the sow at the rate of one ounce to the quart. Make the slop with sweet skim-milk, middlings, corn-meal, bran and a little oat-meal. If the pigs are drinking milk, mix lime-water freely with that. Do not feed the sow on ear-corn. A. S. ALEXANDER.

We Told You So!

I HAVE been in the grocery business for the last sixteen years, and have made a success of it. About seven years ago the grocers of our city were compelled to do something in order to buy goods at the right price. The grocers wanted to sell goods like some of the large stores (with plenty of capital) sold them, and still make money. Six years ago we applied for a charter and built a wholesale house, known as the Erie Wholesale Grocery Company. It is a stock company, and owned and operated by grocers. A grocer can buy one share of stock or up to thirty (which is the limit) at fifty dollars each. We have about ninety stockholders. It has proved to be a big success to the grocer and also to the consumer, for it has helped to keep the retail price down. It is operated the same as any wholesale house. The books are audited and a dividend declared once a year. At present we have all the business six men can handle. D. M. MCDANNEL.

Some men might be better farmers if they had better farms, and some have better farms because they are better farmers.

Sore shoulders on a horse are nothing less than shameful, and no man should consider himself worthy who permits them to appear upon his work-animals.

Their Business is to Get Fat



VIEWED as exemplars of morality, these five lambs are a success. Their business being to get fat, they are pursuing it "with all their might," and the way in which the two in the rear withdraw themselves from sight is a lesson in the modesty which is so pleasing, but so rare, in the young. And there their personal liability ceases.

But, on the business side, their lack of uniform and well-defined breeding, and of symmetry, and in most of them a certain coarseness of wool, debar them from consideration as typical lambs of any mutton breed. For this their breeder or owner is responsible. JOHN PICKERING ROSS.

Raise Pure-Bred Horses

WHEN I see so much indifference as to the kind of horses raised on farms, I often wonder what the outcome will be. Farmers pay more attention to every other kind of stock, even to the chickens on the farm, than to the horses.

What a beautiful sight is a barn-lot full of pure-bred mares and their foals. There will be no question as to their high price at selling-time. The same care and feed will raise the pure-bred and the mongrel alike.

Take, for instance, a high-bred coach mare, high-headed, full of vim, proud, sensitive, quick of motion, bred to a Shire stallion, large, clumsy, slow and steady. What is the result? In most cases a mixture of both breeds. Breed her to a full-blood son of her own stock. What a beauty we have! Let every farmer begin at once to breed just as near as possible to the stock of horses represented by the mares.

Cross-breeding gives us the balker, the kicker, the ill-shaped horse. The oftener a mare is served by the same sire, the stronger will be the likeness of the progeny to the sire; hence, the absolute importance of breeding the young mare for the first time to a pure-bred horse. The first impression rules strong over the succeeding ones. I had a Morgan mare three fourths full blood; the first colt was a mule; three other colts gotten afterward by a full-blood Morgan sire had the distinct markings of the mule as to ears and a stripe down the shoulders. It's a matter of vital interest, this of breeding up our line of horses. CHAS. B. CORBIN.

EDITOR'S NOTE—The theories of breeding given in this account may be questioned by some. They may not be altogether sound, if text-books on questions of breeding are to be trusted. But the fundamental point to this discussion is not marred thereby. Farms everywhere need better horses. Too little thought and too little care are given to these matters.

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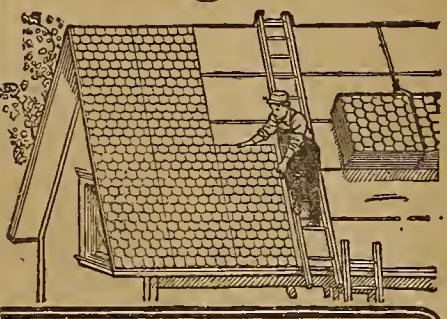
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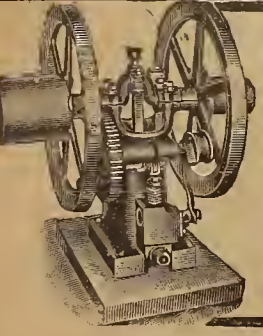
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A LONG the latter part of 1913—only a little more than a year hence—a cablegram will get big headlines on the first page of all the newspapers one day, announcing that the good ship Such-and-Such has passed through the Panama Canal from ocean to ocean; that a flagon of water from one ocean was carried across and poured into the other ocean, as a sign of the union; that a large quantity of flagons of other liquids, commonly regarded as more palatable than ocean-water, were consumed incident to the ceremony, and, in general, that there was a whaling old time.

It will still be a year or so from that date before the ditch will be ready to permit the promiscuous passage of commercial vessels. A big force of people will have to be trained in handling the locks, etc.; there must be experiments and experience with many of the huge mechanical devices that are necessary in handling such a work.

But, putting it broadly, we are right in sight of the completion of the canal. What are we going to do with it when it's done?

What Shall We Do With It?

THAT'S what's worrying Congress at the time I write. Here we have spent, or will have spent when the work is done, about \$375,000,000 in doing a monumental work of engineering. It is the biggest thing that any nation ever undertook for the general benefit and promotion of commerce, though I gravely doubt if it represents a more enterprising disposition and spirit than some of the other works. For instance, there's the old Suez Canal. Did you ever have your attention called to the fact that the first Suez Canal was built about as long before the Christian era as the second was after? That's a fact; the Rameses and the Ptolemies and those old chaps got the idea of digging a ditch to connect the Mediterranean and the Red Sea, and they actually did the job. Probably it was looked upon in its time as a lot bigger stunt than building the pyramids; but it didn't last so well. People didn't use it so much as was expected; the commerce between Egypt and the Indies had gone overland by caravan, and it was not easily deflected to the sea-route. When Greece got to be the dominant power in that part of the world, and had a navy that, in its times, looked as big to Egypt as the British Channel squadron would now look to Haiti, the Egyptians got scared at the notion that the Greeks might sail along some day, grab the canal and take possession of the whole trade of the Far East; so they let the canal drift full of sand, and it was lost for a period. Come to think of it, the world hasn't got very much advanced in civilization in twenty-five hundred years; we are just as scared to-day about the possibility of Japan coming along and grabbing our canal some dark night as the old Egyptians were about the nightmare of possible Greek conquest!

But perhaps the parallel between the troubles of the Ptolemies and the Rameses over their little canal don't have much to do with the problems that Uncle Sam is facing just now. They're interesting, certainly, and possibly not without instruction. For instance—I can't refrain from working in this suggestion,—the ancient Suez Canal proved a disappointment in volume of traffic, partly because the winds were most of the time adverse to sailing ships traveling through the Red and Arabian seas, eastward. They could sail westward all right, but when going eastward, they made little progress.

Interesting Problems to Be Solved

Now, there is a sort of parallel to this in the Caribbean region of the long calms, when a sailing vessel is liable to be for weeks utterly unable to move; no wind from any direction whatever. This would make our canal a mighty uncertain venture if we were dependent on wind to sail ships nowadays. It is probable that sailing-vessels will always have trouble using it economically, though it is proposed to use a fleet of tugs to haul ships out of the region of calms. This is one of the problems that must be answered in the light of experience; if it doesn't cost too much, it will work all right.

But the administrative problems of the canal are just now commanding Congress' attention. Half a century ago the United States and England engaged in an arrangement, under the Clayton-Bulwer Treaty, for joint construction and control of this canal, if it should

Big Canal Problems Worry Congress

By Judson C. Welliver

ever be built. The Frenchmen at length, inspired by the magic of De Lesseps' name, beat us to it, and they set about to build the ditch. They failed, and the time came for us to take the work over and complete it. Then it was recalled that that old treaty was still in force. We didn't want to build a partnership canal; England didn't insist on that part of the deal, but, being the greatest maritime country, it did want to be sure, before relinquishing its partnership rights, that its general commercial interests were guaranteed. So, before we could go to building an American canal, we had to dicker with England and reach an agreement on these points. The result was the Hay-Pauncefote Treaty.

England stipulated, and we agreed, that ships of all nations should be permitted to use the canal on the same terms. Also, it was agreed that the neutrality of the ditch should be guaranteed: it should not be made a military factor. We were not to fortify it, because that would assume a purpose, on our part, to use it as a military base, which would not be in conformity with the neutrality agreement.

I say that the treaty agreed on these things. I have read it, and I think it agreed on them. I think any other man who will read it in the light of plain common sense, and without feeling under the necessity to distort some other meaning into or out of it, will agree with me.

Language could hardly be plainer, to my rude and untutored mind, than the treaty's prohibition of our right to fortify the canal. But when the question of fortifying it came up, why, the lawyers and the diplomats and the politicians and the Jingoos agreed that words didn't mean what they seemed to mean. They said we could fortify, and that anyhow we would; and if England didn't like it, she might make other arrangements. So we appropriated a few millions to fortify it, and thereby invite attacks upon it, when if we had stuck by our original contract, it wouldn't have needed fortification, and there would have been the guarantee of the joint power of this country and Britain to protect it from interference by any hostile power. To me—and I think to most ordinary folks who think an agreement ought to be kept, a pledge should be sacred and common honesty ought to be given a chance,—the fortification of the canal looked like a blanket invitation to trouble.

England Kept Silent, But Watched

ENGLAND didn't peep. She apparently didn't care if we did build forts seven miles high and mounted guns half a mile long on them. She just sat tight and waited. Apparently she wanted to see whether we had in mind to violate the whole arrangement, a little at a time.

Lately, she has had her answer. The House passed a canal administration bill, fixing a maximum toll of \$1.25 per ton, and giving the President authority to reduce it if experience proved necessary. Then the House jumped into the very midst of the whole international complexity, by adopting an amendment, offered by Mr. Humphrey of Washington, to permit all American vessels in the coastwise trade to pass through free. This amendment was backed by the west coast pretty solidly; chambers of commerce and all kinds of organizations had petitioned for it. It looked like a fine thing for the coast, and it got into line—never suspecting, as most informed people now do, that this was, in fact, a cheerful plan to give a subsidy to the railroads, because the railroads own most of the ships that are in the coastwise trade, and also to make it possible for the railroads, owning the ships and having this subsidy, to manipulate their rates and business so as to make the competition of the canal do them as little harm as possible in the matter of the transcontinental rates. When all this was explained, the House took another tuck at it and appended another amendment: this one specified that ships owned by railroads, or controlled by them, should not be permitted to use the ditch at all!

So the thing that had looked like a skilful little railroad job to get free tolls for the railroad ships—most of them being railroad ships—failed to come off. The bill went to the Senate and to the interoceanic canals committee. This committee was immediately put under big pressure from the railroads and shipping interests

controlled by or affiliated with them. They wanted that House bar against railroad-owned ships removed; and they made their demand very definite and direct. Railroad influence is a good deal more potent in Senate than in House. A little incident will illustrate just how potent it is, and how it works.

A certain senator, a member of the Senate committee on canal, went to his long-distance telephone and called up the president of one of the greatest railroad systems in the country; a system, too, that controls a vast amount of coastwise shipping and that is financially affiliated very closely with other interests that have still more of the same class of shipping. He told the railroad president that he was having a deal of trouble getting that House provision cut out! Complained that two senators who were committed to the railroad side of the issue—and, by the way, they are senators who are commonly committed to the railroad side of all issues—had gone away from Washington, and ought to be back here, in case the matter was pressed. Their votes would be needed.

See How It Was Worked

WOULDN'T Mr. Railroad President look up those two truant senators of his, and ship them right back to Washington, so that they could be counted in case of emergency? That was the concluding plea of the senator at the telephone.

Would he? Mr. President guessed he would; and within thirty-six hours the two senators were duly back in their seats!

See how it's done? This incident was brought to me by a person who overheard the telephone conversation. The source is absolutely reliable. The incident is not only completely vouched for, but it is perfectly logical and reasonable. The activities of the railroad people are well known and understood.

To get back to our lamb-chops. The railroads were out to defeat, in the Senate, that bar against railroad-owned ships. The fight got hot and hotter, when along came, one pleasant day, the announcement that England was getting into the game. She was going to protest against granting any special favors to any class of American ships, claiming it was a violation of the precious Hay-Pauncefote Treaty. And she did protest, with much vigor.

Thereupon the question was brought to a crisis. Could we, under the Hay-Pauncefote Treaty, grant vessels in our coastwise trade remission of tolls? True, the treaty said we must treat all nations alike. But it happens that when that very treaty was made, and for many years before, it had been the policy of this country to make its coastwise shipping trade a strict monopoly of American vessels. None others may ply from port to port of this country. Therefore, it is urged, as no English or other alien vessel can enter the coastwise business anyhow, it doesn't make any difference to the other countries whether we charge tolls or not; they gain nothing if we charge tolls, lose nothing if we don't!

The British position is, of course, that the United States has agreed to treat everybody alike, and ought to do it. We have no merchant marine except that which is engaged in the coastwise business. The Britishers know that if we retain the monopoly of this business, and give it the subsidy of free tolls, the American ship-owners will gain, and the impetus may even move them to reach out for other kinds of business, in which they would come in direct competition with British ships. So they don't, on general principles, want the discrimination permitted. They think in the end it would be to their disadvantage, and they are doubtless right.

How the Protest Upset Things

IT IS commonly believed, though no proof has yet been adduced, that the British protest was inspired in part by concern for British shipping interests in general, and in part by the influence, at London, of the Canadian railroad financiers. These Canadian and London financial interests are closely allied with our own groups of transcontinental and other railroad magnates. What could be easier than for an American railroad magnate to go to a Canadian railroad president and say:

"See here, old top, we're both in the same boat, don't ye know? This bloomin' Congress is trying to shut my ships out of the canal. That seems tough, but I'm not in a position to holler. Can't you get your London government busy with a protest [CONCLUDED ON PAGE 16]

Stepping Into Granddad Burchall's Shoes

By Lura Warner Callin



SIXTY years ago, Great-Grandfather Burchall brought to the old-fashioned, aristocratic-looking house his beautiful young wife, when they were full of bright hopes for the future. Here they had spent their whole lives, and here their only son had been reared and educated, and here Grandfather Burchall still lived. "Granddad," as the fourth generation of Burchalls called him, to distinguish him from "Grandpa" Barton Burchall, was a physician, and by devotion to his profession and unusual energy he had built up a practice which he hoped would be taken up by Barton, and the name and fame of the family be perpetuated, but Barton seemed to be possessed of an intolerable dislike for medicine, and the sight of pain and suffering completely unnerved him.

Granddad never voiced his disappointment, however bitterly he felt it, but there seemed to grow between them a certain restraint which both keenly felt, but were unable to remove.

Barton's oldest son had been named Parker Burchall, Jr., and it was a source of great pleasure to him to note the warm attachment growing up between his father and the little fellow, and he fondly hoped that in the child Granddad might some day see his hopes for a successor realized.

Many a time Granddad had taken Parker on his knee and pictured to him the useful life he was to lead as a physician, and always assured him that he was to "step into Granddad's shoes," so it was a double disappointment which came when the boy showed that he had inherited the same painful dread of sickness which had foiled Granddad's plans for the father.

The idea of stepping into Granddad's shoes had grown up with the boy, and as it had meant not only a profession but a share of Granddad's carefully accumulated fortune, Parker found it very hard to act entirely independent of his hoped-for inheritance, but Granddad gave him the commercial education he desired and gave him a beautifully furnished home, to which he took his bride, and here Granddad's active interest seemed to end.

Although the old doctor had long ago given up a large part of his practice, it was a matter of family sentiment that he should be the first to greet their baby boy a year later, for so had he done for every other baby in the whole connection for three generations. It was evident from the first that this great-grandchild had captured Granddad's heart, and as the sturdy little Warren became the constant companion of the fine-looking, dignified old doctor, a hope, half wonder, sprang up in the minds of those who knew the disappointments of the past, that perhaps, after all, Granddad might live long enough to see his ideal realized in this little fellow who drank in every word as the old doctor, forgetful of the lapse of time, talked glowingly of his beloved profession.

One day he took Warren on his knee and said, "You are a good boy, Warren, and Granddad will have to give you something for all you do for him. I think I'll give you my old shoes."

"Oh, no," Warren answered quickly; "'em's papa's shoes. You know you have to give 'em to papa."

"That's so, that's so." Granddad's face clouded a moment. "I had forgotten. Well, then, I'll give you my old slippers. How will that do?" he asked, laughing, as he pinched Warren's ear.

"'Em old ones with the posies on what gran'ma made you?" asked the little fellow. "Oh, that's all right, course."

"Yes, the old ones, and don't forget what Granddad has told you."

* * *

One morning the Burchall family were seated around the breakfast-table when the maid announced, "You are wanted at the telephone, Mr. Burchall."

With a hasty comment on the untimeliness of telephone calls in general, Parker Burchall, Jr., laid down his napkin and passed out into the hall.

The family could hear a sharp exclamation of surprise and then his quick steps as he hastily returned to the dining-room.

"Granddad has had a stroke," he briefly announced, "and I must go over at once. Father is out of town." And stopping only to drink the coffee which the maid had placed at his plate during his absence, he hurried away.

The old doctor had risen early this morning and gone to the barn, where Calamity, his old driving-horse, always greeted him with a neigh of pleasure. It was not unusual for him to drive early in the morning, and Mrs. Hughes, the old housekeeper, did not wonder at his not appearing at breakfast-time; but having occasion to pass the barn a little while after, she saw his prostrate form through the door and hastened, panic-stricken, to the house and sent for Parker, Jr. A physician was sent for, and the apparently lifeless body was borne into the house. A flicker of life was found,

but there was no hope, merely a matter of time was the decision. He lay in a stupor all day, and as Warren and his mother watched by his bed, and the end seemed near at hand, he suddenly roused up, his eyes opened, and he tried to lift his hand toward something at the head of the bed. The stiffening lips made a desperate effort to speak. Mrs. Burchall bent over him, striving to hear or make out his wishes, but all to no purpose, and the eyes slowly closed, his hand fell back on the coverlid, and he was gone.

Picking up the old slippers, she said, "Here are his slippers, Warren; you know he always said they were to be yours."

Warren took them tenderly in his hands, and as he looked on the showy embroidery, a work of love from the long ago, the flood of recollections brought to his mind by the sight caused the tears to run down his cheeks. He noticed, in spite of their age, they had been fitted out with a new pair of half-soles which had never been worn. Grandfather had been very choice of these slippers, and they always occupied the same place under the head of his bed when not in use.

After the funeral, the old house was set to rights and left to the care of the old housekeeper, who had no other home, and whom the old doctor had always said he intended to pension.

But no will had been found and no trace of the money which he had drawn from the bank. Just the day before his death he had entered the bank and withdrawn

family. She was slender, light-haired, blue-eyed, with the air of a queen and a sweet disposition which made the whole family her willing subjects. When she announced the day before Christmas that she wished to go over to Granddad's house to play, it did not take Helen and the two boys long to get ready to go with her.

"Let us play Santa Claus," she suggested, as they started out.

"Jimmie, be Santa Claus, and I shut my eyes, and he bring me something."

"All right," assented Jimmie. "I want that old fur coat and Granddad's old slippers."

While the children were warming in the housekeeper's room, a fire was lighted in the playroom, and the children were soon absorbed in playing Santa Claus. Jimmy, as he had promised, got out the old fur coat and slippers, and with a bunch of white rags on his chin and some more around the edge of his hat made a fine Santa Claus. The slippers had become moldy from the damp, and as Jimmy shuffled around over the floor, the rotten soles gave way. Dot's bright eyes were the first to notice, and she called out, "What's that sticking out of your shoe, Mr. Santa Claus?"

Jimmy kicked off the slippers and found money in bills pasted under the insoles. Bill after bill he pulled out; then Dot called out again, "'Em's Warren's slippers. Me'll take 'em to Warren." And suiting the action to the word, she slid off of the bed and set off to the office, where she knew she would find him.

The office had closed at three o'clock in order to give the clerks a chance to get ready to enjoy Christmas.

A portrait of great-grandfather hung over the desk, and Warren sat looking at it after the others had gone, while a flood of tender memories filled his mind. Then his thoughts turned to the subject which was always uppermost, that mystery of the money and his own disappointment. The light was growing dim in the room, and the face stood out very distinctly, while the eyes which had looked down on him for so many years seemed to assume the same look of anxiety which Granddad's had held that morning he had died trying to reach something. The thought came to him:

"Could it be that he wanted his slippers? And he had promised him his slippers." The more he thought the surer he became.

The door suddenly burst open, and Dot's voice roused him from his reverie: "I've brought 'em, I've brought 'em. See, see, your slippers."

"See, Warren," she urged, thrusting them into his hands. "He gave them to you."

Jimmie in the meantime had spread out on the table the bills they had found. Warren sat stunned until aroused by the children, who had not been slow in grasping the truth.

"Don't you see?" said Helen. "Here's where Granddad kept his money. It's yours. Isn't it yours?"

Warren took the old relics, and tearing out the linings and soles, found there were thousands of dollars pasted in between them. Warren grew dizzy as he saw the fortune spread out before him.

Granddad had grown suspicious as old age advanced and had secured bills of large denomination in exchange for his savings and entrusted them to his slippers. He had also spent an evening in his office sawing and pounding, but he offered no explanation.

From the bills a bit of paper fluttered out, which Jimmy picked up and thrust into his pocket.

Mr. and Mrs. Burchall were in the library when the excited group rushed in, and the whole wonderful story had to be told again and again.

"But," said Mr. Burchall, "this can't be all that Granddad had. It is strange that there is no word, not a line to tell about the rest. I know that he took all of his papers from the bank the week before he died."

Jimmie's fingers were absently fingering a slip of paper in his pocket, when his father's words arrested his attention, and hastily pulling it out, he went to him.

"Maybe this is something. It fell onto the floor." The paper was yellow, but on it was written, "Back of desk."

This looked like a definite clue, and after supper Warren and his father returned to the old house. The old desk had been hurriedly fitted with a false back and was literally lined with valuable papers; among them was found his will, all having been enclosed in this hiding-place just the week before he died. The slippers were given to Warren, and the rest of the property was to be divided among son, grandchildren and great-grandchildren. The old housekeeper was to have a pension and nothing about the house was to be changed.

Warren gave up his position at once and entered upon his medical course, which he finished with honor. He hung out his "shingle" over the door of the office where his great-grandfather had practised for fifty years.

The old picture still hangs over the desk, and just beneath it, in a deep, glass-covered frame, hangs a pair of tattered, moth-eaten, embroidered slippers.



"The old desk . . . was literally lined with valuable papers"

all the money deposited to his credit. Parker, Jr., who was in the inner office, saw him carefully roll up the money and put it in an inside pocket.

Hastily passing out to the street by a side door, he watched the old doctor as he left the bank, and followed him home. The old doctor had not left the house afterward, but, search as they would, no trace of will or money could be found.

Warren secured a position as a clerk on a small salary and tried to drown his bitter disappointment by energetic work. But he never gave up his plans for an education, and he determined to earn one for himself. He often spent his evenings in the old office where he and grandfather had spent so many pleasant hours among the books and bottles. He had already laid the foundation for an education under the old doctor's direction, and that, too, only in odd moments when school or home chores gave him time.

His rapid progress had brought many a gleam of pleasure to the old gentleman's eyes as he noted his eagerness and capability in mastering the minutest details. Warren was, without a doubt, a born doctor.

* * *

Grandmother Burchall had fitted up years ago a large back room as a playroom for the children. The walls had been covered with colored pictures of flowers and birds, and the ceiling presented a panoramic view of Noah's ark which would astonish Noah himself, and which delighted the children's eyes.

Here for two generations the toys and childish playthings had been gathered, and here, as long as she lived, the children and grandchildren spent Saturday afternoons and evenings; and occasionally now the children came here to play, for "Granddad" had always kept up that holiday. Nothing had been disturbed or destroyed, and the slippers, with other trinkets, were packed away in the closet. Little Dot was the pet of the Burchall

THE SUNDAY READING PAGE

An Episode at Oberammergau

By Eliot White

A NUMBER of visitors have written their impressions of the "Passion Play," or drama of Christ's last days, given by the peasants of Oberammergau in Bavaria. But the writer ventures to doubt if any of them could record such an accompaniment of the drama by the outward weather as befell on the day he attended the performances in July, during the decennial season of 1900.

Over the great auditorium, seating four thousand persons, a roof had been erected that year for the first time, but between it and the proscenium was left an unroofed space, open to the sky and all its moods of weather.

On either side of the proscenium the broad stage showed a street of Jerusalem, flooded during the morning performance with real sunlight, and needing none of the artificial illumination of most scenery. A noted German stage-builder said that a drama of the Thirty Years' War could be performed with comfort on this superb platform.

After the intermission of an hour at noon, the clear blue of the sky showed a few clouds, and before the afternoon hours of the drama were half gone a lowering pall of gray overhung the open stage.

The Traitor Enters

When Caiaphas and the other priests and Pharisees have condemned Christ to death, Judas the Betrayer rushes alone across the stage in the deepening gloom. Is it strange that the spectators now became spellbound to see this darkness of the sky thus keeping pace with the tragedy below, as if it had been managed by human scene-shifters, instead of being the development of one of Nature's mountain-storms?

The traitor is pursued by the furies of remorse, and as he flies, he gasps in hoarse ejaculations: "The words of Annas! 'He must die!' No, no, they cannot drive it that far! Too dreadful, dreadful! and I guilty of it! No, they cannot go so far! Surely, I shall not have to hear the worst!"

Now the rumble of approaching thunder echoes among the lofty cliffs of the mountains that loom beyond the stage, and rain begins falling on the chorus when they come out to interpret the next scene.

Then, as the chorus withdraws, the rain abruptly ceases, but the masses of cloud above the open stage become ever wilder and fuller of portent. The ominous pause is very brief. There ensues a sound higher and more startling than the thunder, making the audience almost leap to their feet with apprehension—a crashing, rending roar, as though the roof over our heads were being demolished with one awful blow of the storm!

But in an instant the cause of the deafening clamor is revealed, in the white rush of hailstones, leaping upon the stage like some new chorus, raving with horror of their theme, just as the human singers have gone.

And now look!—what dreadful figure is this struggling through the furious hail toward the front of the stage, like a desperate swimmer in a whirlpool? It is the traitor, with his livid-yellow robe now flung on high, now twisted about his limbs as tightly as a grave-cloth by the angry wind! His hands and his head with its matted locks are pitilessly scourged by the knotted lashes of the ice, and his eyes glare through the frozen tempest, in their agony of remorse and terror, like balefires on a derelict vessel doomed to haunt forever the vapor-choked seas!

A Wonderful Scene

Was ever such opportunity given an actor? All thought of "rôle," or art, is gone from him and from those who watch him in this riveting spell of reality. This is the very son of perdition himself; he is suffering all his pangs. Always Judas will be for us this hunted, shattered creature, hurled to his destiny of darkness by this stupendous, implacable conspiracy of both earth and sky, in righteous malediction and anathema.

His voice, lifted on high in his self-condemnation, can be only faintly heard above the hail, like the last breathless cry of the drowning: "So is my fearful misgiving become horrible certainty! Caiaphas has sentenced the Master to death! It is over—no hope of a pardon. What can I do for Him? I, the wicked one, that gave Him over to their hands! They shall have the money back, the blood-money, and they must give me my Master again. I will go there at once and state my claim. Oh, the foolish hope is fled;

they will mock my proposals. Accursed synagogue, thou hast deceived me, cheated me, seduced me! Thou hast Him in thy clutches. My bitter reproaches will make you tremble, ye unjust judges! I will know nothing of your devilish resolutions. No part will I have in the blood of the Innocent. The pains of hell devour me!"

He rushes away, and with his departure from the stage the hail ceases as abruptly as it began! But when the proscenium curtain discloses the Jewish Sanhedrin in its gloom-wrapt session, the thunder still continues its mighty comments.

The council has no sooner begun its consideration of the troublesome case of the Nazarene when Judas breaks his way in before them all, past guards and doors, and wildly demands that they take back the thirty pieces of silver they paid him for his traitorous deed. And then, as he hurls the coins across the floor at their feet, there resounds so tremendous a peal of thunder from without that it seems as though the actors themselves must feel Nature's accompaniment of the drama today is almost too realistic, and, unless our eyes deceive us, this fresh shock makes them all visibly quake.

In view, then, of such amazing coincidences, if such they must be called, between the outward weather and the representation of the Sacred Life by the Bavarian peasants, does it seem surprising that those who attended that day's performances can never forget the impression that they made? Is it not, rather, inevitable that since then, as they read the accounts of Christ's last hours in the Gospels, they seem to see again the gloom of those portentous clouds and hear the uproar of that wrathful thunder and scourging hail?

The Surface Fires

By Aubrey Fullerton

IN PASSING through a piece of bush-land, I noticed that a fire had recently burned over it and that many of the trees and bushes had suffered. It had been one of those slower surface fires which, instead of sweeping over the country with quick deadlines, had crept along the ground, gradually but surely working its way into every bush and woody nook. As a consequence, it had not mounted high enough to burn the tops of the bushes, but had kept close to the ground. It was a surface fire.

Yet the tops of the bushes had suffered, too, and were already dead or dying; for the fire had burned around the roots and killed the bark of the trunk. Then the tops, though unburned, had withered and died.

There are many things that, like the ground fires, do not reach the higher parts of our life, but, creeping over the surface, leave their wasting marks there, and later show their effects higher up. At first they seem to concern the outside only and to leave the heart untouched, but after a little it is found that they have caused the whole life to wither. Bad habits, for instance, are surface fires that always burn higher and deeper than they at first seem. Are your habits damaging the timber?

Looking Thitherward

By Richard Braunstein

They shall ask the way to Zion with their faces thitherward.—Jer. 50, 5.

THERE is no serious inquiry where there is no honest intention. They shall ask the way to Zion because they mean to get there; their faces, their purpose, their intention being thitherward. To-day everybody is interested in the spiritual. The time is no longer when these studies are ignored. The thousand gospels ringing, the innumerable cults arising on every hand, are so many voices asking the way to Zion. I have a reverent regard for all seekers after the truth, by whatever name or sign they are called, if they are sincerely asking, asking with faces thitherward. The text implies the folly of men asking for that which they are not seeking. There is no use in asking the way to the Kingdom unless we wish to walk the way that leads thereto.

The question "How may I be a Christian?" is often asked, but the only way in which to ask it is with the face thitherward, with the sincere intention of living up to the rules that go with all sincere purpose and asking.

A man was moaning on his knees in the church. A little girl said to her father: "What's the matter with that man?" He

replied, "Oh, he wants to be a better man."

"Well then," said she, "why don't he?"

No man ever asked the way to God, heaven, truth, who didn't first look thitherward, in whose heart there was not first the passion of a sincere desire. All life is led of the ideal. He can only go up who has first looked up. A man shall find his way to the kingdom of righteousness and holiness, which is his true home, only when he begins to be in want. Wants are the open ways of life. The paths that hold our feet take their direction from the wants that hold our hearts. Man gets in this world what he is looking for. Are our faces thitherward? Then our feet will soon be standing in the city of our heart's desire. No man will ever find the way there who has not first wanted to be there. When we have the vision, we will not be long in actualizing the vision. There is no genuine movement in life until there is a stirring of the heart.

It therefore follows that life is largely direction, or, in the moral phrase, intention. It is not so much where you are for the moment, but which way are you looking? Yes; which way are you looking, brothers and sisters? Do you see only the hardship and bitterness of the situation which surrounds you? Are you going on sour and discouraged because things do not seem to come your way?

What is the Trend of Your Life?

Location may be a matter of uncontrollable circumstance, but outlook is a thing of the spirit. For the former one may not always be responsible; for the latter one is always responsible. Our life is greatly complicated, and we are oftentimes perplexed, but this we should know: Whatever the confusion of its circumstances, its direction should be ever upward and onward. The real primary question is not how rich you are, or how poor, how successful or unsuccessful, but what is your life's bent? It is a question that concerns the leanings of your soul, the inmost desires of your heart. The great question is, What is the trend of your life? Christ said to the man in the parable of the talents, "Thou hast been faithful over a few things, I will make thee ruler over many." Not the things, but the fidelity, purpose, intent, faces Zionward. At best our life's work is only the achievement of a "few things." Ah, that's the most that any of us can say, but if our faces have been thitherward, if our hearts have been true, if our ideals have been the highest, then the rest will be added unto us.

Some years ago a young man, a student in Richmond College, London, was preparing for his life-work as a missionary to India. He was a youth of rare talents and had already attained proficiency in the native languages, such that a remarkable career seemed to await him. Just as he was about to enter his life-work he was suddenly stricken down and died at the age of twenty-four. He lies buried in the campus, and on his tombstone these words are inscribed: "Thou didst well in that it was in thine heart."

Looking thitherward, God estimates us not only by labor of our hands, but the extent of our hearts. "Man," says Carlyle, "it is not thy works, which are all mortal, infinitely little, and the greatest no greater than the least, but only the spirit thou workest in, that can have worth or continuance."

The thitherward look! The upward look to our ideal! To the better things we are striving for and wish to at last attain.

It may be objected that life is not permanently capable of such an attitude. Can a man live with face always toward the ideal? I answer, he cannot afford to live one instant with his face turned from it.

"Aren't your high standards sometimes a strain?" was asked of a man who was making strenuous efforts to move toward such standards. "No indeed," was the instant reply; "it's low standards that make the strain."

And those who live closest to God show the least strains in their lives. Moses "endured, as seeing Him who is invisible." The thitherward look enabled him to move with heroic mien, and face those problems that confronted him in his office as Israel's lawgiver. Those who are content to live by low standards know nothing of the zest and joy of life.

Jean Paul said: "Every day should close with a look at the stars." Aye, every day should be lived in the light of eternity. The Italian writer, Neri, quaintly says:

"Many people place their ladders against the stars, but are kept from climbing by the weight of their stomachs." Their purposes, intentions, are good, but they are held back, weighted down by the gross concerns of life. Great voices call us, great tasks summon us, and the days are going swiftly by. It is no time to linger or delay in the vanity fairs or the halls of ease. The early fathers of our country felt this, and for them life was always a crisis. How they used to sing:

"Do not detain me,
For I am going
To where the streamlets
Are ever flowing,
My longing heart is there."

Therefore, forward! Onward and upward! Looking thitherward! Follow the gleam!

A Word Fitly Spoken

By Orin Edson Crooker

IF YOUR friend is sort of blue, say something cheerful that will chase his blues away.

If your friend is sick and ill, say something hopeful that will turn his mind from thoughts of suffering and disease.

If your friend has been maligned, speak some word of confidence that will show you still have faith in him.

If your friend is down and out, say something of encouragement that will give him heart to begin the fight anew.

If your friend has gained a triumph, speak some word of congratulation that will show you rejoice in his success.

If your friend has had a sorrow, say something comforting that will strengthen him in the hour of his trial.

Speak understandingly! Remember that "a word fitly spoken is like apples of gold in pictures of silver."

The Country Lyceum Course

By M. B. McNutt

A COUNTRY community may have many of the city advantages simply by co-operation and a little push. Ordinarily, few of the country people are privileged to hear any really good music or lectures. The Chautauquas are held in the farmer's busy season and a long way from his home. But a lyceum course in the fall and winter solves the problem.

Five years ago the DuPage Presbyterian Church began to hold a course under the auspices of the Young Men's Bible Class. Each season has been more successful than the preceding. This last year's course closed with nearly one hundred dollars in the treasury. There are six numbers given, two by home talent and four from some lyceum bureau. The attractions are planned to come once a month in the moonlight and on Friday evenings—as far as possible—so as not to interfere with the day-schools. The total attendance of the season just closed was nearly fifteen hundred.

The home-talent entertainments, consisting of music, literary productions, debates and plays, draw the largest audiences—sometimes between three hundred and four hundred people.

The church is located six miles from any town. When the roads and weather are favorable, some of the town folks avail themselves of the country attractions. People have been known to drive ten miles or more to these entertainments.

The church furnishes it the building, heated and lighted, free for this purpose. But it is a community enterprise. Everybody comes to the lectures irrespective of church relations. Many of the patrons are Catholics and German Lutherans.

The course is run not for pecuniary profit, but for the sole purpose of bringing wholesome entertainments and lectures within reach of all the community. The management is satisfied if it breaks even financially.

Tickets for the whole course are sold at one dollar, each. When two tickets have been sold in a family, additional course tickets may be had in that family for fifty cents, each. This brings the course to the whole people in more senses than one.

The general admission is twenty-five cents. Children, ten years of age and under, are admitted free. All tickets are transferable.

The great value of such a lyceum course in the country is that it helps to develop the local talent; it interests and holds the young people; it breaks the monotony of rural life and makes it more happy, cheery and profitable; it binds the people of the community together and fosters a wholesome and progressive community spirit.



OUR YOUNG FOLKS

Conducted by Cousin Sally



Cousin Sally's Letter

DEAR COUSINS: Isn't this an interesting page? I'm always glad to be able to use work sent in by my cousins. It's so cheering and helpful, too. I like to know how clever you all are.

The contest, this time, was a great success. I really didn't know what a large number of artist cousins I have. Really, it was quite exciting trying to decide which were the nicest pictures. Sometimes it seemed impossible, yet I think the pictures on this page show the six best ones received.

And you just ought to see the prizes that were sent out! Six splendid boxes of water-colors. Doesn't every one of you want to join in the next contest? There's always room for every one of you, you know, with Cousin Sally.

By the way, I was sorry, too, about that contest. One cousin from the Middle West sent a very pretty picture of snow-capped mountains, high ones, as high as the Alps, and marked it "Drawn from Nature," when I knew the nearest snow-capped mountains must have been fifteen hundred miles from that cousin. It made me very sad, for a little while.

You will see that I have put a tiny description of the picture underneath each one of them, and a word or two of advice, because I thought that you would want to do even better next time, and if I could point out some little thing that wasn't just exactly right, you would make even prettier pictures for our next drawing contest.

For I want to hold another one in the fall. I would suggest that each one of the cousins look over this page and study these drawings. I want just twice as many of you to take part the next time I ask you to draw anything for me.

This is a vacation month, isn't it? And the last of them, too. With September comes school for most of you. I hope you're all enjoying yourselves and getting ready to go back to school a sunburned, happy, healthy, merry band of cousins.

Write to me often, my dears. You know how fond I am of every one of you.

Affectionately yours,
COUSIN SALLY.

Answers to August 3d Puzzles

United States History Questions: 1, Henry Clay; 2, Washington; 3, the Pinta; 4, Captain Lawrence; 5, the French; 6, at the Battle of Manassas; 7, the British; 8, Governor Bradford; 9, Colonel Miller; 10, Schley.

Botanical Puns: 1, bay; 2, stock; 3, cabbage; 4, sage; 5, rose; 6, hop; 7, box; 8, four-o'clock; 9, pine.

Writers That Help Farmers: 1, Fields; 2, Barnes; 3, Saxe; 4, Miller; 5, Baker; 6, Bacon; 7, Charles Lamb; 8, Hay; 9, Crane; 10, Thomas Hood.

A Queer Vegetable: Pan, palace, proxy, prose, plover, pike, jimp, samp.

Anagrams: 1, Colorado; 2, Utah; 3, Idaho; 4, Oregon; 5, Minnesota; 6, Maryland.

Not Qualified

OH, no, sir; mistress does not yet entrust to me her lap-dog pet; I'm still, you see, too young; and therefore Her children, now, are all I care for.
EUGENE C. DOLSON.

Table Manners of a Different Sort

By Lee McCrae

MANY parents take great pains to teach their children correct table manners—as to knives and forks and "thank-yous"—and yet allow them to grow up with some habits that make them exceedingly disagreeable to others at the table.

For instance, every housekeeper notices a difference in the condition of the plates when carried out; some are clean, comparatively, while others are so smeared over with food that one can scarcely pick up the dish. And it is not always the work of a child. The person who leaves such a plate usually treats the table-cloth to unnecessary crumbs and bits of food, and gets a napkin inexcusably stained and mussed.

But it is not merely a question of looks or of kindness to the cook. There is wastefulness in it that helps to form the habit of waste in little things. "That is too good to throw away. Many a hungry child would eat it," I can hear my Scotch father say gently when we ate the top off a biscuit and left the rest. And we had to finish that biscuit before we were allowed to take another.

June Drawing Prize-Winners

HERE are the names of the girls and boys whose drawings for the June contest seemed to be the best: Ralph Parsons, Burden, Kansas; Lowell Deeming, Anita, Iowa; Orabelle J. Thortweldt, Glyndon, Minnesota; Merrill Messner, Middlebury, Indiana; Merle Paige, Fort Collins, Colorado, and Rachel Doughty, Morgan Hill, California. And here are the pictures:



Cousin Ralph has made the best picture that has been sent in. It is the best picture, because it shows more real knowledge of picture-making than any other. See how the road gets smaller as it runs away into the distance and how the wires of the fence drop down back of the hill? I must sincerely congratulate Cousin Ralph on his drawing. This scene is laid on the bare, wind-swept prairies in the State of Kansas.



Cousin Lowell Deeming of Anita, Iowa, has sent us one of the most realistic pictures. Cousin Lowell does not yet know how to draw a road so that it seems to be getting smaller as it goes farther away into the picture, but he has made a scene that looks like many a familiar farm, and has done it so nicely that we are going to make him one of the prize-winners. Doesn't he deserve it?



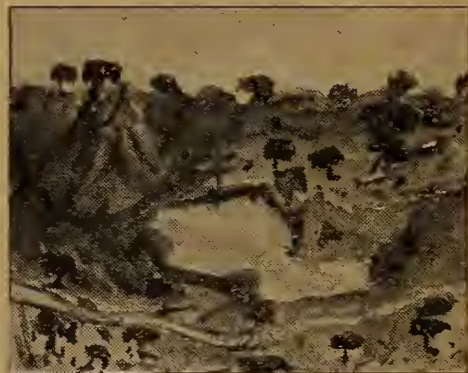
Cousin Merrill Messner of Middlebury, Indiana, has drawn us a very pretty picture of a summer sunset. In fact, the picture looks quite like an Indiana landscape, and we are very sorry that the cousins can't enjoy the colorings Cousin Merrill used in painting it. There is a golden-yellow glow in the sky that is beautiful. I wish you could see it.



Cousin Orabelle Thortweldt of Glyndon, Minnesota, has painted us a very pretty picture of a clump of trees beside a stream. The colors are particularly good, being soft and attractive. This is one of the very nicest pictures sent in.



Cousin Merle has drawn us a very pretty little picture of a house amongst the trees. The flowers in the foreground are much too large for real flowers. However, this is really a nice little picture, and we are glad to print it for the other cousins to see. Cousin Merle lives in Colorado. I wonder if this is her home!



Cousin Rachel has not drawn a very good picture. She does not quite know how to make the rock, the hills, the trees and the lake look like real things. But she has drawn a picture that makes me feel that some time she may know how to do all these things and do them very well. She says this is a picture of Red Rock on Long Valley Creek in California.

August Contest

PLEASE name three things you have done, during July, to help your parents or friends. Has it been weeding the garden, or minding the baby for Mother, or going to the store for Father; has it been talking to the boy next door to keep him from smoking, or showing the girl on the next farm how to embroider?

Write me nice short letters, telling me all about it. Put full names, addresses and ages on all letters. There are six prizes.



This habit also fosters a fickle taste. I once knew a little girl who took the notion when only three years old that she could not eat without jelly on her bread. Her mother foolishly catered to this whim, and now she has grown up a "finicky" eater, thereby spoiling both her health and her disposition.

In a family of six, where I once visited, four cereals were required (?) at breakfast.

As these ideas and habits begin early, so if taken in time they are very easily corrected or modified. A wise father and mother will say pleasantly but firmly to the little quibbler in the high chair, "When you finish that ——— I will give you some of ———."

Or, when a child inclines to a distaste for some nutritious dish, they will exclaim to one another, "Oh, isn't this good!" And at once the little imitator will set to work upon his share, murmuring, "Dood, dood!"

A small neighbor of mine has been taught to eat oatmeal (which he first refused because its looks did not appeal to him) by having it served in a fancy dish in which he gets his ice-cream; so he calls this "ice-cream," too, and eats it cheerfully.

Simply urging a child to "leave the plate nice" will teach him to see and make a difference; to finish the few mouthfuls of good food upon it is all that is needed to form a lasting habit of neat and sensible eating.

Big Canal Problems

[CONTINUED FROM PAGE 13]

under the Hay-Pauncefote Treaty? It'll be a good thing for you as well as me, and a big favor to me into the bargain."

Sure, Mr. Canadian Railroad Magnate could do all that; and if the circumstantial stories that are afloat in Washington are true, that is just what he did. The result was the British protest.

Altogether, it has got beautifully mixed, and nobody can tell where it will lead. But there are a few general propositions that are as plain as sunshine to a man with good eyes.

One is, that if we grant free tolls to American coastwise shipping we will be granting that privilege to one of the tightest combinations of capital in the country, and to a combination that is controlled by the same financial powers that control the railroads.

There is no competition between the different steamship companies in the coastwise trade. There is no competition worth while between the coastwise ships and the railroads. There is no intention, if the big financiers can prevent, of having any such competition started.

It is Only Natural

The railroads, owning the ships or dominating them, would like to have free tolls simply because it would increase their profits. They are not afraid it would invite independent shipping into the competition, because they are confident of their financial power to prevent anything of that sort happening. The Pacific Mail Steamship Company, owned by the Southern Pacific Railroad, repeatedly drove competition out of the business; the coastwise shipping trust, in alliance with the railroads, would be a hundred times more powerful to do that same thing again.

The truth is that there is just one thing that ought to be done, if the canal is to serve the American public effectively, and to have any influence in the direction of reducing railroad rates in this country. The coastwise shipping laws ought to be repealed. These laws, as already explained, prohibit any but American ships sailing from port to port of this country. Guaranteed against foreign competition in this rich field, the coastwise lines have perfected their trust, and charge just what they choose and what they and their friends the railroads may agree upon. It's an easy-money gamble that what they agree on is not what the public needs, but what the traffic will bear—under these monopoly conditions.

Repeal the coastwise shipping laws, and Norwegian, Japanese, Danish, German, British, Chinese—any old kind of ships not owned by a trust, not affiliated with the railroads, not owning a cent's worth of allegiance to any possible purpose except that of making a decent profit on their business, would presently be appearing in our ports, bidding for cargoes from one to another. There would be an era of howling about demoralized rates, and all that sort of thing. We would hear a lot, too, about the indecency of not protecting the American sailor-man. That American bosh! The coastwise shipping laws do, indeed, require that the ships shall be manned by Americans; but the fact is that they aren't. There are almost no American sailors on salt water. That provision of the law is and has long been a dead letter. Nobody is protected by the coastwise shipping laws, except the privilege of the shipping trust and the railroads, which get together and soak the public for the highest rates—rail and ocean alike—that the traffic will stand.

How to Make Real Competition

Repeal the coastwise shipping laws, and we will have real competition; competition of foreign with American vessels in hauling from coast to coast, from port to port; competition of all the ships, under this new régime, with the railroads. It would make a large contribution toward reduction of the transportation bill of the nation.

When the canal bill was before the House, Representative Sims of Tennessee, who had made a careful study of this whole coastwise shipping situation, offered an amendment to repeal the coastwise laws. He explained, in an excellent speech, just what the trust was, how it worked, and how the coastwise laws constituted the guarantee of its monopoly.

His motion caused a panic among the railroad and shipping interests. They rushed out a riot call, summoned their reserves, and by the narrowest kind of a majority defeated the Sims motion.

However, Mr. Sims had the idea, and it's going to be adopted. The next session, or certainly the next Congress, will repeal those coastwise laws, and then we will be ready to start right in the administration of the canal. With those laws repealed, we will have to adjust the quarrel with England about tolls. The Hay-Pauncefote Treaty ought never to have been made, but it was. That's the answer. It was a piece of monumental folly to agree that we would spend \$400,000,000 building a canal, and then bind ourselves to get no benefits from it. Why, the present situation actually is that every nation on earth can subsidize its ships to the extent of refunding them their canal tolls, and yet England is in position, under that treaty, calmly to tell us that we have agreed not to do any such thing for American ships. It is so preposterous as to make angels weep and serious-minded men cuss. And, after cussing a while, one goes out and bumps his head against the barn wall, by way of penance for the occasions when he has been misled into imagining that John Hay was a great diplomat.

An inventive Ohio woman is said to have harnessed the power of the children's seesaw so that she could do the churning by it. The children play, the butter comes, and the woman goes about her house duties. The woman has obtained a patent on the idea.

The Housewife's Letter-Box

Do You Need Help?

Have you been looking for a special recipe for years? Do you need any information on household matters? And do you meet with little problems in the home that you wish someone would solve for you—someone who has had a little more experience than you? Then why not make use of YOUR OWN department and ask the questions which have been troubling you? This department has proved that the spirit of helpfulness is abroad in the land, especially among the women of the farm. That our readers have the mutual desire to help one another is evidenced by the large and prompt response we have had to the questions which are printed here monthly. There is no payment made for contributions to these columns. All answers and inquiries should be addressed to "The Housewife's Letter-Box," Farm and Fireside, Springfield, Ohio. If immediate answer is desired, it will be sent, provided a two-cent stamp is enclosed.

Questions Asked

Will someone please tell me—

- How to make plum duff? S. A. R., New York.
- How to make a hair-switch? MRS. H. H. R., Colorado.
- How to make potato salad? MRS. H. G., Kansas.
- How to make good light bread? MRS. S. S. G., Texas.
- How to make good corn bread? MRS. S. M., Illinois.
- How to make quince preserves? E. M., Indiana.
- How to make a sunflower quilt? MRS. R. A. K., Virginia.
- How to make a good layer-cake? MRS. O. C. T., Wisconsin.
- How to pack grapes for winter? S. E. M., Virginia.
- How to make a feather comfort? MRS. C. D. H., Washington.
- How to knit honeycomb slippers? MRS. L. L. J., Virginia.
- How to cover a cotton felt mattress? J. W. L., Nebraska.
- How to put up grape-juice for market? MRS. A. C. W., Kansas.
- Different ways of preparing eggplant? M. C. K., Missouri.
- How to make mission stain for furniture? MRS. J. A. F., New York.

- Where I can get seed for Gibraltar onions? MRS. H. E. P., New York.
- How to cross-stitch oak or maple-leaf pattern? B. H., Washington.
- How to make hard icing that will not go to sugar? MRS. P. A. T., Missouri.
- How to color a piece of light rag-carpet that is soiled? MRS. L. M. C., Ohio.
- How to make sweet apple preserves and spiced sweet apples? M. C. B., Ohio.
- How to make dill pickles, such as are put on the market? MRS. J. C. W., Kansas.
- How to make Spanish pork-chops; also French baked beans? Miss M. M., Michigan.
- How to make chocolate-caramel and cream-peppermint candy? MRS. B. H., Pennsylvania.

- How to take new-milk stain out of black goods so it will not leave a spot? MRS. R. D. T., Michigan.
- How to make a good chocolate icing that will be hard and firm? MRS. R. J., Missouri.
- How to make good white bread that will keep moist without using potatoes in the yeast? MRS. M. F. MCG., Michigan.
- How to can green peas so they will keep? Also, how to pickle onions, cucumbers and cauliflower to keep for winter use? MRS. J. B. A., Texas.

- How to make yeast? Where I can get a cross-stitch pattern of a bouquet of roses, to be cross-stitched on a sofa-pillow? MRS. C. L., Ohio.
- How to dry figs? How to dry grapes? How to can green beans, okra and cabbage without salicylic acid or other injurious preservatives? X. Y. Z., Mississippi.
- How to remove the stain caused from leaving water stand in a glass water-bottle? Also, how to take a claret-wine stain out of a white table-cloth which has been laundered? MRS. W. P. P., California.
- How to cook the "Windsor or English Broad Bean," sometimes called horse bean? How to retain the pungent taste in nasturtium-seeds pickled in the green state for pickles? W. S., Washington.

- EDITOR'S NOTE—If "Subscriber," Mississippi, will send a stamped and self-addressed envelope to the Editor Housewife's Letter-Box, I will send her directions for putting new feet in old stockings, which Mrs. M. C. B., Ohio, has kindly sent me.
- If Mrs. E. L. B., Maine, will send a stamped and self-addressed envelope, I will send her illustration and directions for making log-cabin quilt, sent to me by Mrs. A. V. W., Kansas.
- By writing to the United States Department of Agriculture, Washington, D. C., and asking for Farmers' Bulletin No. 487, Mrs. G. M., Georgia, will obtain full directions for making cheese.

If Mrs. G. A. H. will send a stamped and self-addressed envelope to Editor Housewife's Letter-Box, I will send her suggestion for a comfort-top, sent to me by Mrs. W. R. W., California.

Will Mrs. N. R., Ohio, who contributed the album quilt-block, please tell Mrs. H. S., Nebraska, the number of blocks she put in her quilt and how many inches across she makes them?

If Mrs. M. J. C., Iowa, will send an addressed and stamped envelope to the Editor of the Housewife's Letter-Box, directions for the zigzag stitch will be sent her.

If I. W. of Kansas and A. D. F. of Idaho will send me a self-addressed and stamped envelope, I will send directions for weaving portières of old silks. MRS. M. C. B., Ohio.

Questions Answered

Bluing-stains may be removed by boiling the stained clothing over again. For Mrs. C. C. S., Idaho. MRS. L. L. K., Kansas.

How to Take Grease-Spots from a Floor, for Mrs. M. B., New Jersey—Pour boiling-hot water with strong soap-suds, and scrub with brush. MRS. C. F. B., New York.

To Remove Mildew, for Mr. J. B. H., Ohio—Dip the article in sour buttermilk, lay it on the grass in the sun to whiten, and wash in clean water. MRS. A. P., Indiana.

To keep ecru lace curtains the same shade as before washing, try rinsing them in water colored with coffee, instead of bluing water. Test for the right amount of coffee to produce the right shade desired. For Mrs. A. N. K., Ohio. MRS. L. L. K., Kansas.

How to Make Good Pie-Crust, for Mrs. L. V. S., Utah—Take one cupful of sifted flour, one-half teaspoonful of baking-powder, a pinch of salt and one rounding tablespoonful of good lard; rub together, and wet with cold water, not too moist. Do not roll it hard nor long. E. F. L., Vermont.

Good Country Sausage, for Mrs. J. H. W., Ohio—For twenty pounds of meat take one ounce of black pepper, eight ounces of salt, one and one-half cupfuls of sage and one cupful of flour. Grind fine, and mix well. This recipe has been used in our family for years. MRS. V. B. C., New York.

To Keep Copper Bright, for Mrs. M. S., West Virginia—Take one pint of benzine, and add to it one-fourth pint of whiting or chalk-dust very finely powdered. Shake well, and apply with a piece of cotton flannel, rubbing hard. Then wipe off with a dry cloth. L. G. W., Washington.

How to Make Clotted Cream, for E. C. J., Pennsylvania—You must strain the milk into small pans, set on the stove about twenty minutes, and let it get quite hot, but not scalded. Then set in a cool place for twelve hours, and skim; then repeat the operation once more. The correct name for this is Devonshire cream.

How to Make Small Pieces of Soap Over Into Cakes of Soap, for Mrs. J. W. M.—Cover the pieces with boiling water, and set the dish where it will cook slowly, stirring occasionally until the soap is melted. When the mass is thick and stringy, pour into molds (baking-powder cans are good), and cool. MRS. L. L. K., Kansas.

Cherry Wine, for H. H. B., Washington—Stem and wash ripe, sweet cherries, and with a wooden mallet crush to a pulp. Press out all the juice, and to each quart of it add one-half pound of granulated sugar and a cupful of water. Stir thoroughly, pour into a crock, cover this closely with a thickness of cheese-cloth, and let the wine ferment for a month. When the fermentation has ceased, rack off and bottle. MRS. E. L. B., Maine.

Blackberry Wine, for J. E. C., Mississippi—Measure the berries, and bruise them; add one quart of boiling water to each gallon. Let stand twenty-four hours, stirring occasionally; then strain off the liquor, and put it in a cask. To every gallon, add two pounds of sugar, cork tight, and let stand till next October, when it will be ready for use. It may be bottled if desired. MRS. A. P., Indiana.

"Shoo-Fly" Cake, for A. M., Missouri—Three heaping cupfuls of flour, three-fourths cupful of butter and lard, one cupful of sugar, one cupful of New Orleans molasses, one teaspoonful of baking-soda and one cupful of boiling water. Make a rich pie-crust, line your pie-dish, and fill with the cake batter. Sprinkle the top with crumbs of flour and sugar. MRS. E. L. P., New York.

For A. E. T., Kansas—To make a nice bag for fancy work, take a wide ribbon or strip of pretty silk about one and one-half yards long, turn up each end about eight or nine inches, and stitch. This makes a pocket on one end for fancy work and a pocket on the other end for scissors, thread, thimble, etc. This can be thrown across the shoulders or attached to the belt. MRS. W. A. G., Kansas.

Recipe for Molasses Cake, for S. A. R., New York—One-half cupful of sugar, one-half cupful of butter, one-half cupful of molasses, one egg, one teaspoonful of cinnamon, one cupful of raisins, one teaspoonful of soda, dissolved in one-half cupful of hot water, and two cupfuls of flour. C. M. B., Illinois.

Lady Baltimore Cake—One cupful of butter, two cupfuls of sugar, three cupfuls of flour, one cupful of milk, whites of eight eggs, three teaspoonfuls of baking-powder, one teaspoonful of vanilla, a few drops of rose-water.

Filling—Moisten three cupfuls of sugar with one-half cupful of boiling water. Boil till it spins a thread. Pour over the whites of three eggs stiffly beaten. Mix into this one cupful of nut-kernels, one cupful of figs, one cupful of raisins, all chopped fine, and a few drops of rose-water. MRS. K. M., Pennsylvania.

How to Make Gluten-Flour Bread, for Mrs. J. H., Ohio—Dissolve one-half cake of yeast in one cupful of lukewarm water; add one cupful of flour, and put into a bowl having a capacity of about three pints; cover up, and leave in a warm place for half an hour, or until light. Then add one cupful of warm water and salt to taste and a teaspoonful of lard or butter. Use flour sufficient to knead into form; let rise, and knead down. Then form into loaf, let rise, and bake for one hour. After removing from oven, cover the loaf with a towel that has been dipped in water and wrung out dry. MRS. W. P. B., California.

Steamed Chocolate Pudding, for Mrs. V. B. C., New York—One-half cupful of butter, one cupful of sugar, one cupful of sweet milk, two eggs well beaten, and two teaspoonfuls of baking-powder, sifted with two cupfuls of flour. It should be about the stiffness of pound-cake, and may require a little more flour. Dissolve one-half cake of chocolate over tea-kettle, mix all together, pour into mold, and steam two hours.

Sauce for Pudding—Beat together one whole egg and two yolks; add one-half cupful of sugar, pinch of salt, one-half cupful of fruit-juice. Cook in double boiler, stirring constantly until creamed. When cold, add one teaspoonful of lemon-juice and one-half cupful of whipped cream. Set on ice till ready to serve. MRS. S. R. H., Ohio.

Good Recipe for Mince-Meat, for Mrs. J. B. H., Ohio—Five cupfuls of cooked beef (from the neck), two and one-half cupfuls of chopped suet, seven and one-half cupfuls of chopped apples, one cupful of molasses, one-half cupful of vinegar, five cupfuls of sugar, one and one-half cupfuls of chopped raisins, two and one-half cupfuls of whole raisins, one and one-half cupfuls of cider, two cupfuls of liquor in which meat was boiled, juice and rind (cut in small pieces) of two lemons and two oranges, two tablespoonfuls of cloves, two tablespoonfuls of cinnamon and two tablespoonfuls of allspice. Simmer one and one-half hours. Add the lemon and orange peel when the mince-meat is nearly done. This makes five quarts. MRS. L. L. K., Kansas.

Angel-Food Cake, for a Subscriber, Mississippi—Take a one-pound soda-box, cut it off just two and one-half inches from the bottom. Fill with sugar; sift it seven times. Fill it with flour, adding one teaspoonful of cream of tartar. Sift this also seven times. Beat the whites of twelve eggs in a crock, with a woven-wire beater, to a stiff froth. Now beat in the sugar and flour, a little at a time—three spoonfuls of sugar, then three of flour, and so on, till all is used. Add one teaspoonful of vanilla. Bake forty-five or fifty minutes in a pan lined with paper, without greasing. Do not open the oven for the first twenty minutes. Be careful not to jar the stove while baking. The cake is better when not baked so long—say forty or forty-five minutes. Beat the cake well, for I have tried several different ways, and I find beating it thoroughly much better. L. P., California.

Information Concerning Rose Beads, for Mrs. I. K., Nebraska—I use a food-grinder, using the pulverizing knife for grinding my rose-petals. For a strand about forty-two inches in length, it takes about two quarts of rose-petals, although this varies, as some rose-petals make more dough than others; that is, some of them make more juice than dough. I use no tincture of iron, but spread my dough on the upturned bottom of an old dripping-pan, turning the dough about three times the first day, to insure an even color. The dough will dry out quickly in warm weather, and in order to prevent this, I work it over with my fingers, pressing it together like putty. I grind it about three or four times, once daily, until it seems to mold without any trouble, then work it out and place on pins to dry. As soon as the dough becomes an even color when on the pan, it should be removed to a small dish and worked into a smaller space to keep it from drying out too quickly. I save all surplus juice, and when molding out my beads, use it to moisten the dough if it becomes too dry. J. M. E., California.



Can you always eat all that you "can"?

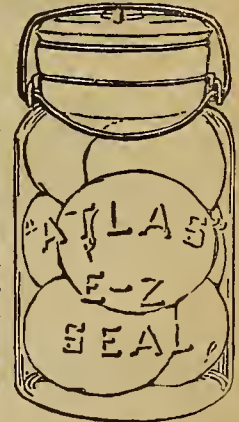
After the work of "canning" do you find much of your fruit is spoiled? Then, why persist in using old-style, narrow-necked, tin-topped, screw-capped jars? That was the old way of "canning." The new way, the easier, safer, better way is called "jarring," preserving in the all-glass

E-Z SEAL JAR

Try putting up beets, beans, corn and tomatoes for winter use. It is fun when you use the E-Z Seal Jar. It has the sanitary all-glass cap—no metal at all. No twisting and turning—the cap clamps with a spring seal. It closes and opens with a touch of the finger. And—your fruit keeps!

Free Jar—Free Book

Cut out this coupon, take it to your grocer—he will give you one E-Z Seal Jar—FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the grocer. Get the Book from us.



HAZEL-ATLAS GLASS COMPANY
Wheeling, W. Va.

1-Qt. E-Z Seal Jar BL FREE for the Coupon

Please note—in order to secure free jar this coupon must be presented to your dealer before Oct. 15th, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.,
Wheeling, W. Va.

This is to certify, that I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name _____

Address _____

TO THE DEALER:—Present this to jobber from whom you received E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name _____

Address _____

10 DAYS' FREE TRIAL
We ship on approval without a cent deposit, freight prepaid. DON'T PAY A CENT if you are not satisfied after using the bicycle 10 days.
DO NOT BUY a bicycle or pair of tires from anyone at any price until you receive our latest art catalogs illustrating every kind of bicycle, and have learned our unheard-of prices and marvelous new offers.
ONE CENT is all it will cost you to write a postal and everything will be sent you free postpaid by return mail. You will get much valuable information. Do not wait, write it now.
TIRES, Coaster-Brake rear wheels, lamps, sundries at half usual prices.
Mead Cycle Co., Dept. L-83, Chicago

98 Cards for 10c

Different sorts, gold Birthdays, Greeting, Embossed, etc. Sent postpaid for 10c, stamps or coin. HOPKINS' NOV. CO., Dept. 38, Belleville, Ill.

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

DON'T PAY TWO PRICES

Save \$3.00 to \$22.00 on **Hoosier Ranges and Heaters**
Why not buy the Best when you buy them at such low unheard-of factory prices. Our new improvements absolutely surpass any thing ever produced. Save enough on a single stove to buy your winter's fuel. Thirty days free trial in your own home before you buy. Send postal today for large free catalog and prices.
Address **Hoosier Stove Co.** 126 State St., Marion, Ind.



Satisfies

There never was a thirst that Coca-Cola couldn't satisfy. It goes, straight as an arrow, to the dry spot. And besides this,

Coca-Cola

satisfies to a T the call for something purely delicious and deliciously pure—and wholesome.


Free

Our new booklet, telling of Coca-Cola vindication at Chattanooga, for the asking.

Demand the Genuine as made by **THE COCA-COLA CO.** ATLANTA, GA.

Whenever you see an Arrow think of Coca-Cola.

98cents



Guaranteed 5 Years

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

Post Paid

Who Said Money?

\$500.00 In Cash Prizes
\$60.00 to \$100.00 Guaranteed

Salary and Commissions
During August, September, October

WOMAN'S HOME COMPANION

AND

The American MAGAZINE

have begun a red-hot campaign for a *million and a half* subscribers.

Your Spare Time

may be turned into real, hard cash by getting up a club of subscribers under our special direction. We tell you how, furnish you with all material and guarantee you salary and commission. No matter how small or how large the club is that you can raise, you will be well paid.

Qualifications

A strong desire to increase your present earnings.

Willing to work hard to accomplish that end.

A common-school education.

Plenty of enthusiasm and a disposition to follow instructions.

THE CROWELL PUBLISHING COMPANY, 381 Fourth Ave., New York City.

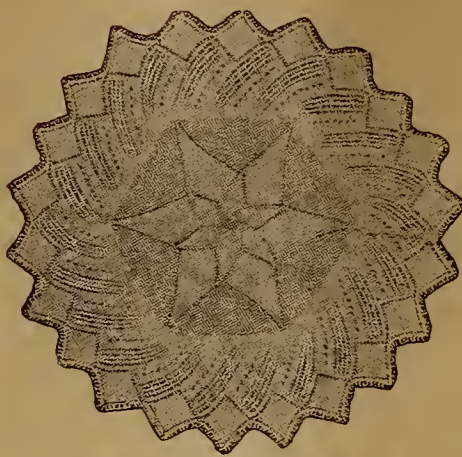
I will help you get the "million and a half." Send me full instructions how to win the prizes and earn the guaranteed salary.

Signed.....

Address.....

Irish Crochet and Knitted Work

For Lovers of Fancy-Work



Knitted Doily with Star Center



Whirligig Irish Crochet Motif. This motif may be used in a number of ways on garments and household linen

DOILY With Star Center—The knitted doilies which the Fancy-Work Editor published in the May 25th issue of FARM AND FIRESIDE have met with so much favor that we have decided to offer to our readers who enjoy knitting, more work of the same sort. The doily with the star center is original and sure to meet with the approval of persons who enjoy knitting.

ALL of the fancy-work directions offered by FARM AND FIRESIDE, whether for knitting, crocheting or bead-work, are written with special attention to clearness and ease of comprehension. Many of the articles presented to our readers' attention are made by our subscribers, women who live on farms, yet who are expert needlewomen.

Directions for making the articles shown on this page are divided into three sets; the first set contains directions for knitting the doily with star center, the lace edging and the block for a counterpane; the second gives the directions for crocheting the whirligig Irish crochet motif and the booties, and the third set contains the directions for making the bead purse.

Complete directions for knitting the doily with the star center, the lace edging and block for counterpane will be sent upon receipt of six cents in stamps and a stamped and self-addressed envelope. Address your requests for these knitting directions to Nida Hope, care of FARM AND FIRESIDE, Springfield, Ohio.

Complete directions for crocheting the whirligig Irish crochet motif and the booties will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address your request for the crochet directions to the Fancy-Work Department, FARM AND FIRESIDE, Springfield, Ohio.

Complete directions for making the bead purse illustrated on this page will be sent upon receipt of four cents in stamps and a stamped and self-addressed envelope. Address requests for these directions to Hannah Waldenmaier, care of FARM AND FIRESIDE, Springfield, Ohio.

In sending for these directions be sure to state explicitly whether you want the knitting, crocheting or bead-work directions, as each set is printed separately, and a mistake will mean a necessary delay in resending you the desired instructions.

Knitted Lace—The knitted lace shown on this page can be adapted to many uses, according to the kind of thread that is used. Its simplicity of design is one of its chief attractions.

Block for Counterpane—The old-fashioned knitted counterpanes of our grandmothers are very much in demand. Here is an opportunity to make one for yourself. The design shown on this page is original yet suggestive of the elaborate work of a hundred years ago. A counterpane made after this pattern will prove a wonderful addition to any bedroom, and is neither difficult nor tedious to make. The work progresses rapidly, and it is just the thing to pick up in spare moments.

Whirligig Irish Crochet Motif—Something new in Irish crochet is the whirligig Irish crochet motif illustrated on this page. Its uses are many. Such motifs may edge a collar, bureau-scarf, centerpiece, lunch-cloth, pillow-case or doily set. As a dress-trimming or, in finer thread, for underwear it is just as successful in its usefulness.

Crocheted Booties—A pair of booties is a gift that is certainly appreciated by both mother and baby. The bootie shown on this page is very pretty, and the design is very effective when made of white wool and trimmed with pink or blue. All white wool, too, is a good choice.

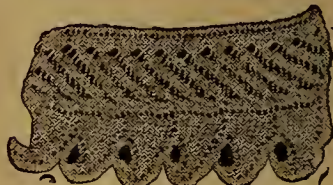
Bead Purse—The bead purse shown in the photograph on this page was made of white, coral and cut steel beads. One of the advantages of such a bag is that it does not soil as easily as a crocheted one.



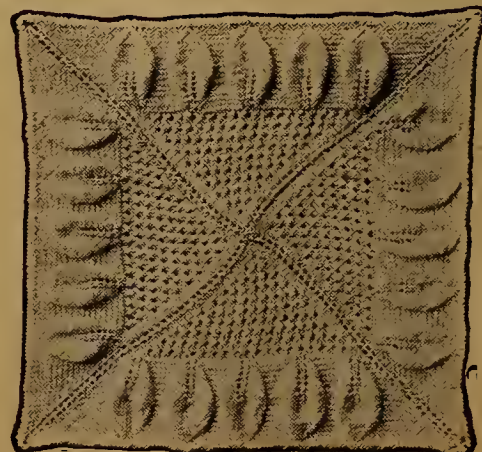
Bead Purse



Crocheted Bootie



Knitted Lace



Knitted Block for Counterpane

Late Summer and Early-Fall Clothes

With Special Designs for the Schoolgirl

IT IS just at this season of the year that every sensible mother, if she can possibly squeeze in the time, begins to think of new clothes for her schoolgirl daughters. In planning this page, Miss Gould has given special attention to designs for the little and big schoolgirl. The dresses are all simple to make, and the little reefer is one which can be worn right up to cold-weather days. The shirt-waist for the older girl will be found an extremely good model to copy because of its smart plain style



No. 1959 is a simple little school-dress of very good style for the girl between four and twelve years



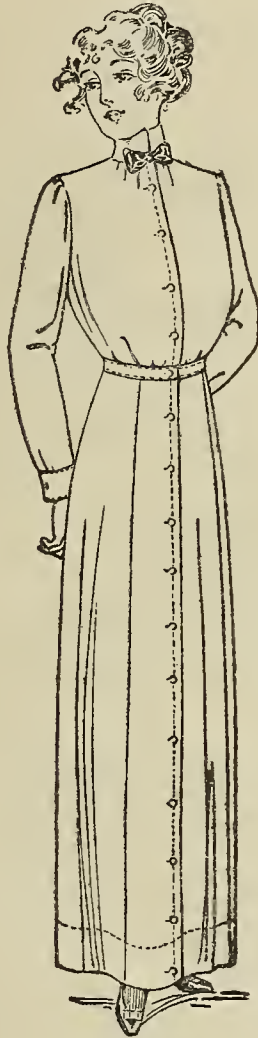
For the little girl this simple one-piece model, pattern No. 1964, is both comfortable and practical



Made of dark-blue serge or cheviot, and trimmed with braid, this dress-pattern No. 2028 is most practical



No. 2071
No. 2072



No. 1656



No. 2077
No. 2078



This reefer with sailor collar, pattern No. 2027, will be comfortable to wear to school in early fall

No. 1959—Girl's Dress Buttoned in Front
4 to 12 years. Material for 8 years, two and three-fourths yards of thirty-six-inch material, with one-half yard of contrasting material. Pattern, ten cents

No. 1964—Girl's Dress Cut in One Piece
2 to 10 years. Material required for 6 years, two yards of thirty-six-inch material, with one-half yard of contrasting material. Price of pattern, ten cents

No. 2028—One-Piece Dress: Panel Front
4 to 12 years. Material required for medium size, or 8 years, three and three-fourths yards of thirty-six-inch material. Use buttons and braid for trimming the front panel. The price of this pattern is ten cents

No. 2027—Reefer: Notched Sailor Collar
2 to 12 years. Material for 8 years, two and one-half yards twenty-four-inch material, with five-eighths yard of contrasting material for collar and cuffs. The price of this reefer pattern is ten cents

No. 2071—Plain Waist: Double Sleeves
32 to 44 inch bust. Material for 36-inch bust, two and one-half yards of twenty-four-inch material; three and one-half yards of lace; five eighths of a yard of net; one and three-eighths yard of contrasting material. Price of this pattern is ten cents

No. 2077—Waist with Skeleton Overblouse
32 to 40 inch bust. Material for 36-inch bust, two and one-fourth yards of all-over lace, twenty-four inches wide, seven eighths of a yard thirty-six-inch material for overblouse, one and one-fourth yards of contrasting material. Price of pattern, ten cents

No. 2072—Skirt with Side Tunic
22 to 34 inch waist. Material for 26-inch waist, seven yards of twenty-four-inch material and two and one-fourth yards of lace. Pattern, ten cents

No. 2078—Straight Skirt with Flounce
22 to 30 inch waist. Quantity of material required for medium size, or 26-inch waist, four and one-fourth yards of thirty-six-inch material. Pattern, ten cents

No. 1656—Housework Dress
32 to 44 inch bust. Quantity of material required for medium size, or 36-inch bust, ten yards of twenty-seven-inch material, or seven and one-fourth yards of thirty-six-inch material. Pattern, ten cents

Send your pattern orders to the nearest of the following depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio, or Pattern Department, Farm and Fireside, 1538 California Street, Denver, Colorado



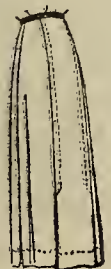
A plain shirt-waist, No. 1988, and good-looking high-waisted skirt, No. 1989 for the young girl

No. 1988—Misses' Plain Tailored Shirt-Waist

12 to 18 years. Quantity of material required for medium size, or 14 years, three and one-eighth yards of twenty-two-inch material, or two yards of thirty-six-inch material. This shirt-waist is smart when developed in striped material. The price of this pattern is ten cents

No. 1989—Misses' High-Waisted Skirt

12 to 18 years. Material for 14 years, three and one-fourth yards of thirty-six-inch material. Pattern, ten cents



No. 1826

No. 1826—Six-Gored Skirt
22 to 34 inch waist. Material for medium size, or 26-inch waist, six and three-fourths yards of twenty-four-inch material. Length of skirt, 41 inches. Price of this pattern, ten cents

No. 1716—Skirt With Buttoned-Over Panels
22 to 32 inch waist. The length of skirt is 41 inches. Quantity of material required for medium size, or 26-inch waist, five and one-eighth yards of twenty-three-inch material, or three and one-half yards of thirty-six-inch material, with one fourth of a yard of contrasting material for the cording. The price of this skirt pattern is ten cents



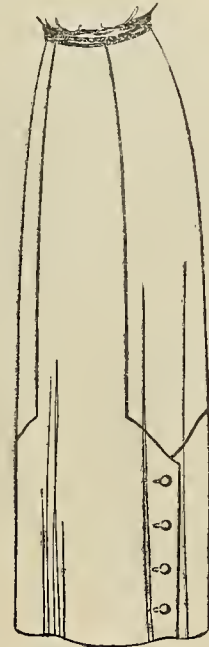
No. 2071
No. 2072



No. 1656



No. 2077
No. 2078



No. 1716



An attractive dress for Sundays and afternoons is this simple one, pattern Nos. 1828 and 1829

No. 1828—Buttoned-Over Waist with Revers

12 to 18 years. Material for 14 years, one yard of thirty-six-inch material, with seven-eighths yard of contrasting material thirty-six inches wide for sleeves, and two and one-fourth yards twenty-four inches wide for gump. The price of this pattern is ten cents

No. 1829—Six-Gored High-Waisted Skirt

12 to 18 years. Material for 14 years, three and one-fourth yards of thirty-six-inch material. Price of pattern, ten cents



Overland
1913

\$985

Overland
1913

Completely Equipped F. O. B. Toledo

This Completely Equipped, Powerful, 30-Horsepower, 5-Passenger Touring Car

Here Are a Few of the Big Features:

Self Starter
30 Horsepower
5 Passenger Touring Car
110-inch Wheel Base

Timken Bearings
Center Control
\$50 Remy Magneto
\$50 Warner Speedometer

\$50 Mohair Top and Boot
\$25 Clear Vision Wind-
Shield
\$25 Prestolite Tank

THERE never has been such an astonishing automobile value offered to the American farmer. Study the specifications—the detailed values. See the unusually complete equipment—everything possible and practical for an automobile. Remember the thorough and fine Overland construction and you'll get a good idea of this exceptional worth. \$985 for this complete, big, powerful car. No extras; nothing additional to buy but gasoline. Ready for service the minute you get it. This car, at this price, smashes all previous records. It even totally eclipses our 1912 values, which a year ago baffled the world. 40,000 Overlands will be made in 1913. This enormous jump in production makes pos-

sible this new car at this new price. As our production goes up, prices come down, as has been shown in each preceding year.

In this age of rapid progress it is sometimes difficult to grasp the full significance of an important, progressive manufacturing step, such as this car exemplifies. But when you sum up the extraordinary cold dollar for dollar value which this car offers, as compared to any and all competing motor car values, the giant economical manufacturing strength of the huge Overland plants is realized and recognized. It only proves the ability of this most powerful and efficient automobile factory.

Here we can but call your attention to the bare facts. This is the car—a big, pow-

erful, beautiful, spacious, comfortable, self-starting, thirty horsepower, five-passenger touring car—fully equipped—all ready for night or day, rain or shine, service. Made of the best materials on the market, by the most skilled men known to the trade, and in the most efficient automobile shops in America. And the price is but \$985.

We can make the positive statement, without any kind of a condition, that this is the automobile industry's record value.

This car can now be seen in any city in America. Over 2000 Overland dealers are waiting to give you your demonstration. Look up the one in your vicinity.

Write us at once for full information and a 1913 catalogue. Address Dept. J-38.

The Willys-Overland Company, Toledo, Ohio

Detailed Specifications—Model 69T

MOTOR—Four-cylinder, cast separately. Bore, 4 in. Stroke, 4½ in. Horsepower, 30.

IGNITION—Remy Model R. D. Battery and magneto—two sources of current.

COOLING—Water cooled. Thermo-Syphon Cellular Radiator.

OILING—Splash system for crank and cam shaft bearings. Cylinder and timing gears oiled with Kinwood force feed oiler.

CAM SHAFT—Carbon steel drop forged, three bearings.

CRANK SHAFT—Carbon steel drop forged, five bearings.

CONNECTING ROD—Carbon steel drop forged.

MAGNETO SHAFT—Drop forging.

PUSH ROD—Crescent drill rod steel.

CARBURETOR—Model L Schebler. **CENTER CONTROL.**

FRAME—Channel section—cold rolled steel.

SPRINGS—Front, semi-elliptic.

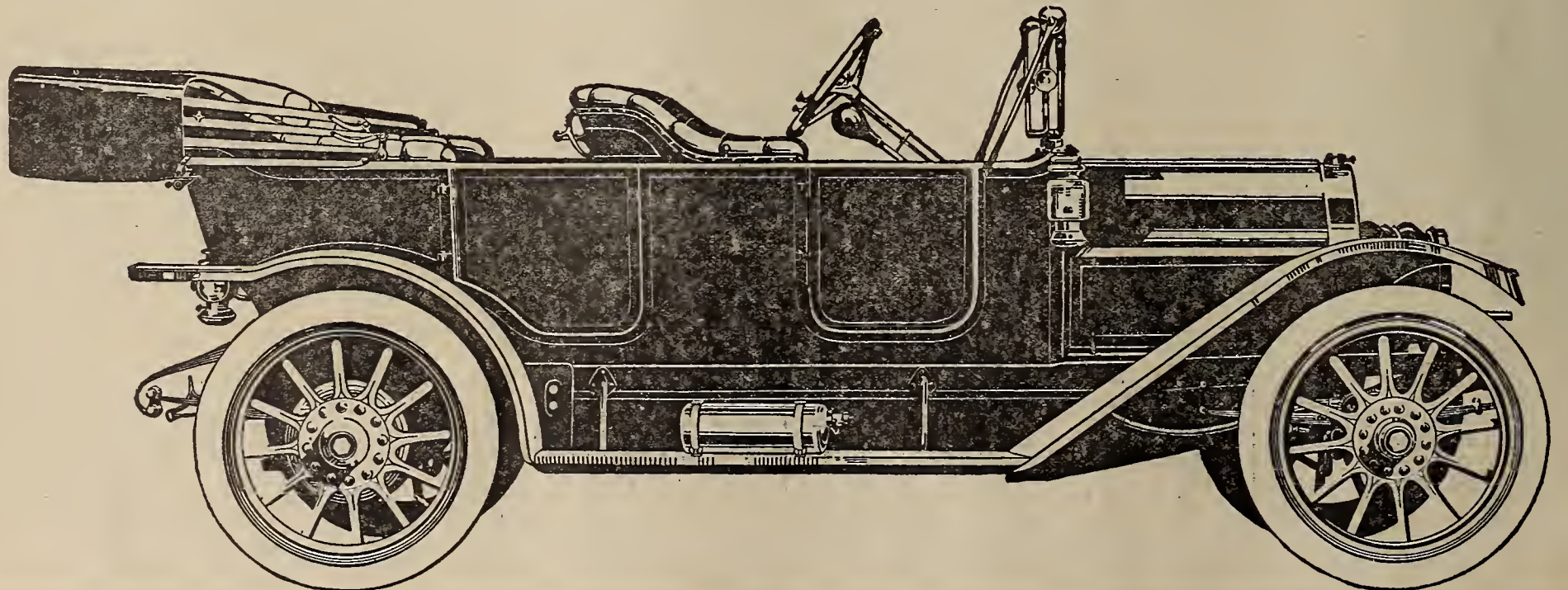
TRANSMISSION—Selective. Three speeds forward and reverse. Annular bearings.

FRONT AXLE—Drop forged. **TIRES**—32x3½ Q. D.

FINISH—All bright parts nickel plated, with black trim.

BODY—Overland blue; wheels, gray.

EQUIPMENT—Mohair top and boot; Warner Speedometer; Wind shield; Prestolite tank; Self-starter; five black and nickel lamps; tire irons; robe rail; foot rest; tool kit and jack.



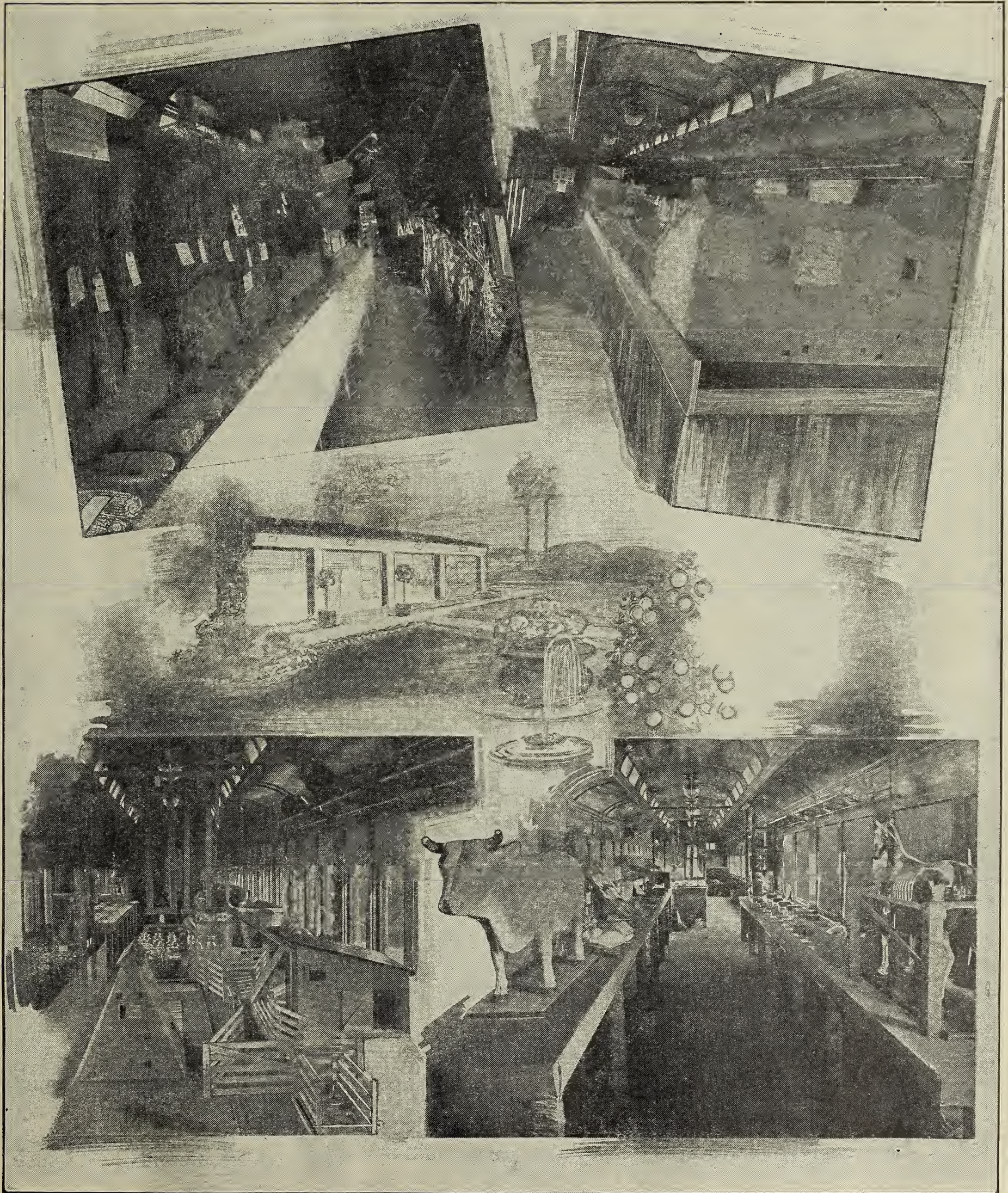
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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, AUGUST 31, 1912



Farm trains have been run in many States at various times, but, perhaps, the biggest and most elaborate of any of these educational trains was conducted in North Dakota this past season. There and elsewhere the benefits have been state-wide. The scenes on this cover illustrate some of the features of another large train, that run in California, the story of which is found on Page 6

This Engine is 1/3 Better Than Its Rating

More actual engine for your money—extra working power—a reserve strength for extra loads—an engine that does the job and does not get stuck—these are some of the features that make our engines different from the common run. Workmanship and design, too, following the most approved practice for highest grade engine manufacturing, with many exclusive features added, distinguish the

Jacobson Gasoline Engines Hopper-Cooled Type

You can depend upon getting fully one-third more working power than in other engines of equal rating. Simplicity, too, and strength—an engine the non-expert can run without fear of breakdown.

If you want satisfactory, dependable power that will run day in and day out at lowest known cost, write for prices and information.



JACOBSON MACHINE MFG. CO. Dept. O Warren, Pa.

134 Acres, \$4,000, Easy Terms Livestock and Tools Included

Immense crops corn, oats, potatoes, buckwheat, barley, rye and hay are produced on this splendid Central New York farm; spring-watered pasture for 30 cows, 40 acres heavy growth wood, 150 barrels apples in season; 2-story 14-room house, two large piazzas, two big barns, 100-ton silo, several outbuildings; short drive to R. R. station; owner anxious to make quick change. Will include, if taken now, 12 cows, 3 heifers, bull, 3 calves, all Holsteins, 4 hogs, 40 hens, two good work horses, a shepherd dog, all farming machinery, wagons, harness, dairy utensils, etc.; everything goes to quick buyer for \$4,000, easy terms. Further particulars of this and other big equipped farms, page 36, "Strout's Farm Catalogue 35," copy free. New York Farms offer you today more productive land for your money than the same money will purchase elsewhere. Station 2699, E. A. Strout Farm Agency, Union Bank Bldg., Pittsburg, Pa.

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Proved capacity, great strength, all sizes. Write for FREE catalog today. Also Gasoline and Steam Engines, Threshers, Saw Mills. Get our prices.

MONARCH MCHY. CO., 603 Hudson Terminal, New York

WHEAT TO SOW

Ten big yielders, smooth and bearded, hardy and reliable, clean and pure. Sold right from farm. Close prices.

If you don't like it, we take it back, return your money and pay freight.

Write for wheat catalog No. 40—it is FREE. A. H. HOFFMAN, Bamford, Lancaster County, Pa.

BE A WELL DRILLER

\$25 to \$60 a Day—365 Days in the Year if you work Sunday. Fully explained in Armstrong's wonderful 184 page Drill book—a marvelous work of inspiration and instruction. Tells all from A to Z. Tells how to be a well driller—how to go at it on small capital—how famous Armstrong Line of Well Drilling Machines simplifies work, assures success. Price of book \$1.00; but on request, we'll send it and charge it, crediting full amount on purchase of machinery or return of book. Write today. Address Armstrong Mfg. Co., 10 Dane St., Waterloo, Ia.

BOYS! Get This Air-Rifle Without Spending One Cent

The King Air-Rifle is a repeater. It shoots 150 times without reloading. It is strong, durable and shoots accurately. It cultivates trueness of sight and evenness of nerve.

These fine air-rifles are provided with pistol-grip, true sights, and are so strongly made that it is almost impossible for them to get out of order.

Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle. Get your subscriptions at once and send your order in early.

BOYS
Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.
Write To-day
Address
FARM AND FIRESIDE
Springfield, Ohio

With the Editor

OLD people may still be met who remember when tomatoes were poison. They were reared in flower beds and pots, shunned in holy dread by the discreet and kept carefully out of the reach of the children.

They were called "love-apples" for some reason connected with the idea that there is a good deal in the way of toxins in love, or because our great-grandmothers felt bound to maintain that love is a thing that looks good and appears appetizing, but that when partaken of produces pains, cramps and makes one equally sorry whether it kills or don't. It was the fashion in those days to talk in that way when the older women were discussing things in the presence of the girls. It had no effect on the girls, for they knew that when their elders became marriageable after being out of it for a few years, they usually contracted another case of love-poisoning at the first available opportunity.

This amiable fiction not only kept the girls under bonds to conceal their symptoms of poisoning, but it put the men who heard the conversation in a properly humble frame of mind. A man who is by inference compared to a poisonous vegetable that looks like a fruit but is as deadly as sin and a vehicle for sorrow is thereby deprived of some of his conceit. And generally he needed to have some of it taken out of him.

All this is relevant—perhaps—to my tomato crop. And the tomato crop is relevant to the financial burden of carrying an orchard of about two thousand apple-trees and eleven hundred peach-trees with no money returns. I just couldn't stand the drain any longer, and decided to take off a crop of tomatoes this year if it violated every commandment in the horticulturist's Bible.

Anyone who thinks it an easy job to plant thirty-five acres of tomatoes may guess again. We had a rainy spell just as the plants were ready to set, and with every man, woman and child capable of sticking a tomato-plant, the work went on, rain or shine. Some of the time the planters worked with clothing so heavy with rain that they could hardly walk—and even with dry clothes the constant stooping and rising makes it fearfully hard work. We had no planting machinery, and we couldn't have used it if we had; for the orchard is on land that was in stumps and stones three years ago, and is still too rooty and stony for such machinery.

Almost every plant grew. Not more than one or two per cent. fell before the cutworms. At the present moment the long rows—four rows in each middle—are the picture of tomato health. The crop is contracted at thirty-two cents a bushel. The question now is, whether even with a good crop any money can be made where all the help is hired.

THIS is in Morgan County, West Virginia. In Sir John's Vale, a little valley in which our farm is situated, the soil is better than the average Morgan County soil, which on the whole is rather thin and shaly. The combination of tomato-growing with orchardry is all the rage there, now, and it seems to be a good combination. The cultivation of the tomatoes gives the trees good conditions for growth, and while the crop taken off must come out of the soil, it may be made up for by commercial fertilizers.

We laid off our ground with shovel-plows about the middle of May. We followed the shovel-plows with men dropping fertilizer in the places where the plants were to be set—about a third of a good handful to a hill—and covered these fertilized spots with hoes. Then the hills were laid by for ten days or two weeks so that the moisture of the ground and the lapse of time might spread the fertilizer and take the "fire" out of it. The plants were set in these hills about the last of May. You see, it isn't a cheap proposition by any means.

I'm not at all sure that my orchard will produce a great crop, for the reason that the soil is stronger than the other valleys possess, and that it has had pretty good care for the past three years. In the spring of 1910 we planted the apple-trees, and gave them good culture, considering that the place was full of locust stumps. That fall we sowed rye as a cover crop, and in the spring of 1911 we plowed down the rye when it was shoulder high—too high, I admit. After cultivating the land all summer, we sowed it in the fall of 1911 to crimson clover and cow-horn turnips. On a part of it we sowed cow-peas for hay, putting in fertilizer to pay the land for the peas we took off. This spring that crimson clover was a sight to be admired. It glowed like a geranium-bed. And it was so heavy and so high that it was almost impossible for the plows to turn it down. The roots of the clover and the rye-humus made the furrow turn like prairie sod. On this the tomato crop is now growing. If, as our neighbors say, tomatoes need a light soil, I'm afraid we haven't the ideal conditions. They may run too much to vines. It will depend largely on the season.

Cow-peas had never been grown on the place, nor crimson clover. So I bought specially prepared commercial inoculation for the crop. I was rejoiced last summer when I saw the nodules on the roots of the cow-peas, but there were as many and as large nodules in the check strips left to test the inoculation. Same with the crimson clover. Check strips and all, there was no lack of inoculation. Nodules everywhere. How is this to be accounted for? It may be said by someone that in some mysterious way the peculiar bacteria of cow-peas and crimson clover were in the soil already, but I am convinced that the bacteria which inoculated the roots of my crimson clover and cow-peas was not the "peculiar" bacteria of those plants at all, but the bacteria from red clover, white clover and other legumes with which the place had long been familiar.

IT is true that in some regions even red clover must be inoculated before it will grow nodules—it was so in some parts of Iowa in my youth. Alfalfa often fails from want of inoculation. I saw a field of alfalfa in South Dakota last summer which was doing poorly, and on which no nodules at all could be found. These prairie soils seem to be naturally rather poor in the bacteria of leguminous plants. Or, perhaps the bacteria present are not able to adapt themselves to new hosts very easily. But I never heard of any difficulty in getting a "set" of clover in the cut-over lands of Wisconsin, Michigan or Minnesota, whether clover had ever been grown in the locality or not.

I suspect that there are many plants which can interchange their bacteria, as sweet clover and alfalfa are known to do. It seems probable that some bacteria are able to adapt themselves to many legumes. Anyhow, this is true: in a locality in which ordinary peas, beans and the common clovers had been cultivated, and where there is reason to think some wild vetches had been in the habit of growing in the woods before they were cleared, I have had no need for inoculation in the cases of crimson clover, cow-peas and hairy vetch.

Hubert Quick

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Cottonseed and Good Fiber

THE government of Egypt has undertaken to furnish the cotton-planters good seed. The cotton of Egypt is inferior, on account of lack of good seed largely. The peasants have been buying seed of dealers who neither knew good seed when they saw it, nor cared. And the planters were short-sighted and short-pursed—like farmers in some other places. But now that the government has taken it upon itself to furnish scientifically grown and selected seed, we may expect Egyptian cotton to improve immensely in quality.

The time is here when American cotton-growers may well follow the African example and take up in an organized and scientific way the matter of seed. Varieties of the right degree of earliness are required by weevil conditions. A variety furnishing a long staple is needed to take the place of the long-staple supply ruined by the on-marching pest. Times of planting are more important now than formerly.

If the weevil situation is handled scientifically, it may not turn out to be an evil situation at all.

The importance of the silo is shown in the fact that Iowa State College now has a course of instruction on silos. It's open to everybody who's interested. This year it was held June 3d to 7th.

Farm Adviser Problems

IN ANOTHER part of this paper is an article on the coming era of expert farm-advisers—men to be paid partly by the federal government and partly by the state. No doubt some of the funds recently donated by commercial and financial interests will be expended in this cause. Altogether it now seems to be probable that plenty of money will soon be available for the hiring of an expert farm-adviser and demonstrator for every agricultural county in the United States.

However this may be, this is certain: enough money is available to hire more expert farm-advisers than are in existence. The shortage is in men, not in money.

The American farmer is hard-headed and a little skeptical. He thinks he knows a good deal about farming, and the man who shows him better ways must know his business. He must be more than a theorist. He must be able to do the farm tasks at least as well as the farmers can do them, or he will not commend himself to them as an adviser.

The beardless graduate may know a lot that the farmer does not know, but the farmer, on the other hand, knows a great deal that the graduate would be the wiser for. When Doctor Knapp sent his advisers through the South to show the farmers how to grow corn and cotton, one of them approached a man in the field on the subject of planting a patch of cotton the next year according to the methods approved by the Department.

"Why, young man!" exclaimed the farmer. "I've been makin' cotton since before you were born. You can't tell me anything about cotton!" The young man peeled his coat. "If I can pick more cotton than you and your son both, will you take hold of this with me?" said he. "I sure will," said the farmer. "Go to it!" They went to it.

The "book farmer" picked three rows while the farmer and his son picked two. The farmer surrendered. "You know about cotton," said he. "I'll do anything you want me to!"

Here was a farm-adviser who made good. But how many are of this sort in the United States?

The story is probably a joke, but the newspapers say that a Wisconsin schoolboy has invented an electric mouse and rat trap which will be used on Uncle Sam's ships. They also say that the boy is getting \$100,000 for his invention.

During the shipping season ending June 15, 1912, 237 car-loads of fresh tomatoes were shipped into the United States from Mexico through the one port of Nogales. These tomatoes paid a freight rate of \$1.04 per hundred pounds. There seems to be a market for more of this early vegetable than our southern farms are supplying.

Chanticleer may well crow with gusto for Biddy these days; in view of her industrial performance. Ten years ago our annual home-produced egg allowance per capita was 207, which had a market value of \$1.86, or .9 cents each. The last census report gives the annual per capita egg allowance a decade later as 200, but the value of each egg had advanced to 1.7 cents, or our egg-supply for the year cost each of us \$3.40. Collectively, our American biddies filled a sizable egg-basket containing eighteen billion eggs. These eggs would require 6,500 full-capacity freight-cars to transport them to market.



The way things are going

There is a reason for everything. The Grimm and other hardy alfalfas have a deep, strong tap-root and many smaller side-roots. The southern or common kinds have the tap-root, but not the lateral ones. When this single tap-root is broken by the heaving of the frost or otherwise killed, the plant dies; but in the case of the alfalfa with the small lateral roots they keep it alive. This seems to be the difference between the hardy and the semi-hardy or non-hardy alfalfas. And it is an important difference from the farmer's standpoint.

Weeds Cause Loss

THE Wisconsin State Conservation Commission is showing up the importance of the weed question. In the matter of quack-grass the commission finds that, of 499 farms, 228 are infested to the average extent of three and one-third acres. More than half these farms have patches of Canada thistles, the average of which reaches the surprising area of more than five and one-half acres per farm. Wild mustard exists on 112 of these farms to an average extent of twenty and one-half acres per farm. A weed census is a new thing for a State to take, so far as we know; but the Wisconsin census indicates that one acre in every twenty in that State is seriously infested with noxious weeds. A huge loss in land, in labor and in produce.

Bungalows and Igloos

A BUNGALOW is a low, airy house, all on one floor. The real bungalow of India is built for hot, moist climates. It gives to the dweller in it the maximum of protection against the sun for the minimum of work and expense.

The igloo is different. It is a low, beehive-shaped hut made of blocks of ice, and is the device of the Eskimo to keep out the cold. It is short on ventilation, but long on conservation of fuel. The only thing it has in common with the bungalow is that both are human habitations.

A Michigan contributor sends us a design for a hen-house. It is a good design. One of these days our readers will see it. Another has given us a plan for a good, warm hog-house. Another tells us how to build a warm, well-ventilated dairy barn.

Now, this country is so large that all these building-plans must be studied with reference to local conditions. An Alabama farmer built a good, warm hen-house, and his chickens immediately went into bad condition. Those which roosted in trees flourished. He took off all the battening on every side but the north, let the breezes blow through, and his hens did well. This would have been a ruinous way in North Dakota. The best dairy barn the writer ever saw in the South was so built that the sides could be swung outward like awnings, while mosquito-netting was let down all around. The cows stood in the warm Gulf breeze, chewed their cuds and gave down their milk.

Experienced farmers will not make the mistake of building a bungalow where an igloo is the right thing, or vice versa. But people moving north or south or into unfamiliar climates are likely to do so. And Backtothelanders are especially warned against such errors.

It is reported that a berry-grower in the State of Washington has perfected a method for drying strawberries by sunlight so that they are very palatable. Worth trying, perhaps.

Caraway-seed is a staple crop in Holland. The number of acres devoted to this fragrant seed is twenty thousand. The yield of baled caraway is about a ton and a half to the acre. Most of the seeds are worked up into oil by distillation. Does anyone know of any locality in this country where this industry is carried on?

Six years' experiment in South Africa showed that corn planted in rows two feet apart gave a greater yield than when planted in wider rows.

Is This Farming?

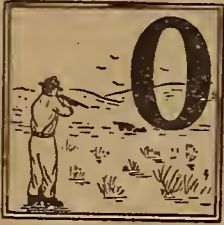
A NEWS despatch states that Mr. Frederick T. Gates, Chairman of the General Education Board and adviser to Mr. John D. Rockefeller in philanthropic and other undertakings, has purchased 27,000 acres of land in Richmond and Scotland Counties, North Carolina, and will "turn farmer." Such operations, of course, are in no proper sense of the word farming. They are acts whereby a landed aristocracy is established. They are of all things the worst for the real farming interests of the nation. They lead to conditions under which the old-fashioned American farmer disappears, and is succeeded by proprietors of immense and princely estates tilled by a respectful and dependent peasantry, between whom and the proprietor stands a middle class of retainers. Mr. Gates is not to blame. Perhaps there is no blame to be laid at anyone's door. But there is deep and abiding error in the system. Those who desire to see it in full operation may well visit the immense haciendas of the Spanish-American countries and Brazil. The lordly don who owns the hacienda is one pole of the economic magnet; the other pole is the peon.

The Sheep, the Dog and the Trap

Successful Devices for Trapping Sheep-Killing Dogs

A Lament for New England's Lost Sheep

By Mrs. J. W. Mathie



ON PAGE 3 of FARM AND FIRESIDE of June 25, 1911, is a reproduction of a photograph of sheep at pasture. Underneath it the Editor says: "Sheep should be on every farm." This I believe to be true. Sheep yield more profit for the amount of money and labor invested than do any other live stock. They are docile and pleasing to handle, and are beautiful and interesting animals, and they bring three forms of return: fleece, increase, and mutton when past being profitable for the other two. They thrive in rough pastures where no other stock would thrive. They benefit such land by reducing the brush. They return to the land a good proportion of what they take from it. Yet they are not generally kept. Why is this? The answer is ready on every man's tongue who has had any experience with sheep. "I do not keep sheep, because the dogs will not let them alone." Aside from the money loss, which is considerable where one has raised up a well-bred flock, the terrible and useless suffering of such harmless and innocent creatures as sheep and lambs is too heartrending to be endured. No humane person wishes to raise dumb animals to be slaughtered in such an inhuman manner.

Let me give you a concrete example which is very fresh in my mind. A flock of twenty-three sheep were grazed in a hill pasture not far from dwellings. Of these, two sheep and two lambs belonged to a farmer who had no others, and these four had been petted and made much of by his whole family. Like most pet sheep, they did lots of mischief to lawn and shrubbery, and so were turned, with another man's flock, into the pasture. They had been out about two weeks when word came that dogs had been among the sheep.

With one of the town officers, the sheep-owners visited the pasture. Out of the flock only six were unharmed. Seventeen sheep and lambs were dead or dying. Of the four, two were found dead. One lay twenty-four hours before it was found and put out of its misery, and one of the lambs that had frisked about the home all the spring lay two days before it was found and despatched. Another lamb had an eye gouged out and lying on its cheek, and other wounds, but was creeping about. Others had their faces stove in. The sheep-owners looked, when they came in, as if they themselves had a fit of sickness, so deeply did the hideous sight affect them, while about what their women and children did the least said the better.

The owner of the four had planned to have a pure-bred flock of considerable size, but he says now he will keep no more sheep. The other owner has suffered before and will probably abandon the business. There were at least three dogs implicated. One dog-owner killed his dog without a murmur. One resisted as long as he could and now curses everybody connected with the affair, because his dog was finally killed. The other manufactured an alibi to protect the worst one of the lot, a bulldog.

We are supposedly not allowed to do or to keep that which is an injury to our neighbor, but the country is full of such worthless curs. Wild game is much better

protected by law than are sheep. Attempts to legislate the matter amount to but little. To be sure, the town pays something, what it pleases, for the sheep, but who pays for the suffering and the wear and tear to one's feelings?

A law compelling dog-owners to muzzle their dogs when let loose, to keep them chained or locked in at night, and that they may be killed when found running off their owner's premises unmuzzled and alone, would help a little. Until something is done, there will be few sheep raised by the general farmer, and it's a pity it is so.

EDITOR'S NOTE—The lament of our correspondent voices the feelings of innumerable farmers of the East and Middle South as we have come to fully understand by a score of years of personal association with them in New England and a half-dozen other States where the broken character of the land especially adapts large areas to sheep husbandry.

Dog laws are not lacking in most of these States, but the "teeth" of the laws are extracted before enactment of such laws were possible. A visit to any state legislature when dog legislation is pending will convince anyone interested that effective laws for protection of sheep from dogs cannot be hoped for until farmers will make the same united effort for control of dogs as the members of hunting clubs, breeders of sporting dogs and owners of pet dogs invariably and systematically inaugurate for their side of the question.

Killing, maiming and torturing of sheep, calves, poultry and damage to gardens and lawns is lost sight of by the average legislator just so soon as his sentiment is appealed to by a few stories graphically showing the dog as man's most faithful companion and helper.

Farmers cannot be expected to establish a small flock of the high-quality sheep desired while knowing that in an hour's time the painstaking efforts of years may be lost through ravaging dogs.

The dog must come under control such as has been found necessary with all other farm animals, in order to encourage the fullest supply of food and clothing from the large areas of rough and broken land naturally well adapted to sheep husbandry.

The Dog Gets Where He is Helpless

By G. S. Gilson



THIS dog-trap was used with good results by a mere boy. Make the trap strong enough so that a dog will not get out. The shape is such that, when baited with a sheep carcass, or sometimes a fresh sheep-pelt, the dogs run up the sides and jump in. As the sides taper from the bottom, a dog hardly ever gets out. Then use your shot-gun. Keep the sheep in the fold for a few nights, and try this.

A Wagon-Box Trap

By J. V. Smith

IN 1859, my father used a wagon-box with which to catch a dog. And he caught him, too. He set it with a figure four, home-made. He raised the wagon-box on one side; on one stick was placed some meat (part of the sheep which the dog killed would do). He fastened the meat tight on the end of the stick with a wire or a twine. He made the bait-stick long enough to reach well under. The ground was so fixed that when the box fell there was no space left under it through which the dog might escape.

The Rail-Trap Will Work

By Mrs. George Myerholt

A LOAD of fence-rails was brought to the pasture and a pen made, a rail in length and breadth, and about six feet high. The rails were laid so that they were gradually drawn in at the top. Dogs can easily climb in, but they cannot climb out.

A dead sheep was skinned and placed in the trap, and the live sheep removed from the pasture. In a few nights I caught two dogs in the trap, and later three more. I had no more trouble afterward. Some care must be taken in constructing the trap. Use small rails at the bottom (so a small dog cannot get through), heavy rails on top, and wire the corners with hay-baling wire. A neighbor also used this kind of a trap, and we have had no more trouble in the neighborhood.

Trap for Sheep-Killing Dogs

By Allen Trachsel



The framework

MAKE a good, strong frame as large as needed to hold sheep. Cover all over with strong wire netting. Leave a little gate on one side to let sheep in, then make one, two or three cages such as are shown in the illustration, big enough to hold a dog. Nail good, strong wire netting all over them and in the bottom. Fasten these to the sides of the pen. Have a little trap-door on one end. When the dog looks for an opening to get at the sheep, he'll find one of the open doors. Just as soon as he gets inside he steps on a board, his weight presses the board down, which releases the door, which then drops and catches, with the dog caged up inside. You have been successful in your efforts.

It Caught Seven of Them

By M. S. Holderbaum

FOR a trap for a sheep-killing dog, take poles or fence-rails. It is best to make a pen as you build up, laying in so you have a hole on top about four and one-half



feet square. Then skin the sheep killed by the dogs, putting them inside the pen. As high as seven dogs in one night have been caught in such a pen, and not one got bailed out alive.

Trapped With Nails

By J. L. Jones

FENCE in a small enclosure. Place within it any number of sheep you may wish. Leave an opening in the fence, and from this extend an oblong box (made out of twenty sixteen-foot boards) just large enough for the dog to start through easily. Drive plenty of nails in the boards slantingly. When Mr. Dog enters the trap, he has no suspicion. The boards, being loose, will perhaps begin to touch him by the time he is in the center. Then, when he wants to return, the nails will so prick him that he is glad to remain still until you come out to look after the sheep. This scheme works like a charm. Try it and see if I am not right.

A Guarded Fence

By G. W. Franklin

I HAVE been in the sheep business in Iowa since 1870 and have learned a good many ways of defeating the sheep-killing dog. My best plan is to keep the sheep in a lot next to the barn, with a high board fence around where the sheep stay, except a partition fence between this lot and another in which I always manage to keep a few head of cattle. The outside of the fence of the sheep-lot is provided with dog-guards, like those pictured. These prevent the dogs from jumping over and into the lot where the sheep stay. In the lot adjoining this one is a fence not so high, provided with a dog-guard on the inside, which prevents a dog from jumping out when once on the inside. I have killed many dogs on the inside of this cattle-lot, and have lost but few sheep from dog depredations.



The dog-guard is made by nailing arms at the tops of the posts with a slant of fifteen degrees. On the top side of the arms are placed four wires. The dog, in attempting to jump over the board fence, is prevented from doing so by coming in contact with the wires.

Only a Flock

By Herbert Quick

Somebody's dog's killed my sheep to-day,
Though they never did any dog ill,
And so they are done with their innocent play—
Six, the last six, in one bloody kill!
No more shall I see them—my hope and my pride—
Grazing in clover knee-deep;
I've winked back the tears—see my eyes dry
and wide—
Somebody's dog's killed my sheep!

I wish the dog's owner could know how I feel—
Why, I nursed them like babes, those lambs!
Watched in the cold so sleepy I'd reel,
And lame crouching down on my hams;
And the little soft fellows with innocent eyes
Seemed to know how they'd robbed me of
sleep,
Now in death their glazed eyes show wild fright
and surprise—
Somebody's dog's killed my sheep!

Thirty fine ewes of the royalest breed—
Forty fine lambs at their sides;
Seventy fleeces to help out our need,
A dike 'gainst the mortgages' tides.
Isn't it queer that the dogs some men love
Will steal out at night while they sleep,
And turn into tigers and wolves as they rove—
Somebody's dog's killed my sheep!

Down in the village—I guess I know where—
That dog is a baby's pet:
A boy's heart swells as he pats his head;
But if he were me, you bet.
He'd know the "nice doggie" that fawns at noon,
To a shepherd's a wild beast a-leap
At the throats of his flock 'neath the midnight
moon—
That boy whose dog killed my sheep!

Only a Dog

By Berton Braley

Somebody poisoned my dog to-day,
Though he never did anyone ill,
And so he is through with his canine play,
And his wagglety tail is still.
No more shall I walk in the fields with him
Along at my side to jog,
And—I don't care if my eyes are dim—
Somebody poisoned my dog!

He was homely, I know, as a dog could be,
And only a mongrel, too;
But I loved him, and he loved me,
As people and dogs may do.
Nothing on earth could disturb his trust,
Or his love and his faith befog,
And now he lies here in the dust—
Somebody poisoned my dog!

He crawled to my feet, and he licked my
hand,
And then with a gasp he died;
And—though some people can't understand—
I patted his head—and cried!
For it isn't funny to lose a friend
From off of this "earthly cog,"
And he was loyal unto the end—
Somebody poisoned my dog!

I wonder how anyone could have done
This poor little fellow harm:
But here he lies—his race is run—
Though his body's still soft and warm.
My life is lived on a peaceful plan,
My pace is a quiet jog,
But—I wish I could find the snake of a man
Who poisoned my little dog!
—In Cincinnati Post.

Farming Without a Leg to Stand On

By J. H. Brown



Mr. Briggs

JUST look at that man without any legs! And he's hitching up a three-horse team to a sulky plow. Suppose he's going to plow, himself, and all alone?"

We were passing a neat-looking farm home in my touring-car, and my wife noticed the farmer getting his team ready for the field. The man had no legs, but walked with his hands, swinging his body between his arms and taking fairly good strides.

"Of course, he's going to plow. He does all kinds of farm work, and he is one of the most successful farmers in his neighborhood. He is a great worker, very intelligent and progressive in his farm practice and known far and wide as the only real farmer in the United States who farms it actually and literally without a leg to stand on."

This man's name is Myron L. Briggs, and he lives on a ninety-acre farm in southern Michigan. The soil is a sandy loam, the surface somewhat rolling, the buildings large and substantial and the farm lawn well shaded with fine old trees. Mr. Briggs bought this farm about eight years ago, has paid for it and made other improvements. At the time he purchased this farm it was badly run down.

About eleven years ago Mr. Briggs lost both his legs in a street-car accident in Grand Rapids. For fourteen months he was in a hospital hovering between life and death many times. Both legs were so badly mangled that they were cut off just below the hip-joints. The three or four inches of bone in each leg below the joint allows him to take a bracing position and "change off" when standing (?) or sitting. This helps him to brace and rest more or less when sitting on the seats of farm implements and in chairs.

A Practical, Optimistic Farmer

The picture of Mr. Briggs shows him to be a fine-looking, intelligent, cheerful and prosperous individual. He sits with his right leg-bone advanced. When tired of this position, he reverses these short bone sections, and this affords relief, as it does any man who changes from one foot to the other.

It seems strange that he should choose farming for his vocation in his badly crippled condition, but he says he likes farming best of all. He was advised to go on the streets and sell shoestrings, pencils, etc., but his pride would not permit such a "come down." So he and his wife bought a farm and he began to study and practise the latest principles of agriculture. He subscribed for a few leading farm papers and pitched into real business farming with both hands and his head.

The expression, "Without a leg to stand on," has always been metaphorically applied to an individual in an extremity of some sort. In not one instance in a thousand is the expression used in a literal sense. But here is a farm, and the only one in the country, of which every square foot of surface soil has been actually "handled" by the owner, although he never set a foot or stood a leg over it. Verily, Mr. Briggs has attained to greater heights in real and practical farming without a leg than has the average farmer who stands upon two good legs.

The optimism of this farmer, who does all kinds of farm work every day from morning till night, perfectly happy and contented with his lot in life, puts to shame many strong, healthy farmers with good stout legs and feet who grumble much of the time because they can't make farming pay. When such a crippled farmer can put the harness on his horses, hitch them up to the sulky plow, manure-spreader or binder and go out in the field alone and work all day, whistling and humming to himself meanwhile, it seems as though the hearty two-legged farmers ought to at least whistle once or twice nearly every day in the week, and three times on Sunday.

He "Gets Around" With Wonderful Ease

It may interest the reader to know just how this legless farmer gets around and does things on his farm from day to day. The accompanying pictures illustrate and prove that he can handle farm work of all kinds. He "walks" many miles each day, although he has seats attached to every machine and farm tool to which a team can be hitched. He rides in the seats without tying himself in, and it puzzles every observer to understand how he sticks while the implements bob around more or less on the uneven surface.

Mr. Briggs is very strong and healthy, and his arms are as stout as those of any brawny blacksmith. The grip of his hands is like a vise, and he can throw his body into almost any position he wishes by means of his hands and arms. And herein is the secret of his successful manipulation of all things that get within reach of his sturdy grasp.

In the barnyard scene Mr. Briggs is holding his favorite cow by the horns for me to take her picture. Incidentally, I secured a good picture of the cow's owner and showing how he gets around. The short sticks lying in the foreground with rectangular holes therein are hand-holds and take the place of shoes in walking. Sometimes Mr. Briggs uses a wooden boat, into which he straps his hips, and especially when it is wet, muddy or there is snow on the ground.

This man is a good dairyman and sells milk and cream. He has studied dairying for some time and is breeding up and weeding out his cows for the largest possible production of milk and butter-fat. He keeps a record, and each cow is weighed in the balances, so to speak, and if she is found wanting, she goes to the shambles

as soon as she becomes dry and fat. He uses the Babcock milk-tester to determine the value of each cow.

Scientific feeding attracted his attention long ago, and he is working toward a balanced ration that has the proper proportion of protein, carbohydrates and fat. The silo was found necessary in compounding this ration in the most economical manner.

"Why did you put up a silo, Mr. Briggs?"

"Because the old-fashioned method of cutting, shocking and hand-husking the corn was too wasteful, and the fodder was injured more or less and did not have the feeding value that good ensilage seems to furnish my cows. I can get milk at less cost when I feed ensilage."

"I Can't Get Along Without a Good Silo"

"That's right," I replied. "The silo preserves all the digestible nutrients in the matured stalk of corn. And the proper time to cut the corn and put into the silo is when the full-grown ears are well glazed. Then it is ripe and contains the largest possible percentage of digestible nutrients, and there is no waste if it is immediately transferred into an air-tight silo. When the silo first came into general use, the corn was cut too green. There was considerable waste of the digestible nutrients, and the ensilage also developed too much acid."

"Yes," he replied, "and that is the reason why I wait until my corn is fully ripe before cutting it for the silo."

At another time I visited this farm when the owner was haying and harvesting wheat. I also found him in the back lot, over half a mile from the house, whither he had gone all alone, opening several gates in the lane and through the back woods. He would hop down from the seat on his disk harrow, open a long, heavy gate, drive the team through, then climb upon the harrow as easily and almost as quickly as any farmer with two



To climb the ladder to the loft is not a difficult task

legs. In the field I saw this man sitting on the narrow harrow seat, driving his three-horse team over the rough, stony ground. He was not tied in, and it puzzled me to see how he could stay on and manipulate the levers while riding across the field.

There is Not a Task Mr. Briggs Cannot Do

My next view was while he was in the hay-field. He had a modern hay-loader attached behind the wagon, and he and a fifteen-year-old boy were loading. Despite his apparently helpless condition, he would travel around with a fork and place the load in fine shape, with merely his head and shoulders in sight above the hay. Arriving at the barn, he came down the ladder, helped hitch the team to the hay rope, then climbed the vertical mow-ladder high up into the peak of the barn. He mowed away the hay while the boy handled the harpoon fork on the load and sent it up on the hay-carrier. It is doubtful if there is another legless man in the country that could do such a job as this farmer did.

And the beauty of it all was that Mr. Briggs was as happy as a lark all the time he was at work. And he understood the scientific reasons as well as modern methods of securing his hay crop. He cut the grass when partially matured and before it had developed woody fiber. It was quickly cured and hauled in at just the right time, when conditions of the weather permitted. And the hay in the Briggs' barn was of prime quality for feeding his stock.

He finished his haying and hitched the big three-horse team to the binder before I came away. The next place I saw him was standing on the ground in front of the machine oiling up the bearings. He is a good mechanic and believes in thoroughly lubricating his machinery and keeping all the bearings properly adjusted. He does this work with his own hands, although it seems almost impossible to the looker-on. He sits on the binder seat, drives the team and manipulates a half-dozen levers with his mighty, handy hands. There are two foot-levers on this machine that he has lengthened out to reach with his hand in order to dump the bundles from the carrier.

And he can set up wheat-bundles, although he leaves the most of this work to his hired man. In fact, he can do almost anything that any two-legged farmer can or ever did do on a farm. People from all over the country have heard about this farmer's accomplishments and

have traveled hundreds of miles to see him actually do the difficult things others had said he could do.

I saw him while he was out in the field spreading manure in the latest modern way. He uses a three-horse manure-spreader, with the seat high up in front. He lets not a particle of manure go to waste on his farm, and it is hauled out and spread on the fields as fast as made. When I saw him, this good-natured, legless, but hustling, farmer was dismounting from the spreader to open the gate into his barnyard.

Just notice how he gets down from the seat! He carries his hand-sticks with him everywhere, and before he left the seat he threw these on the ground. With his left hand on the seat end, he dropped his right hand to the spreader footboard. Next he swung his body down to this board. He then put his left hand on the corner of the manure-box and dropped his right hand to the wheel-tire.

His next move was to swing his body down on top of the tire. In this position he quickly turned half-way around. Then he put one hand on the tire and the other was dropped very quickly to the wheel-hub, and, with the same motion, he swung his body to the ground. The same movements would be more or less dangerous for a man with two good legs to accomplish.

Mr. Briggs is known far and wide as a successful farmer in all that the term implies. The ambition, cheerfulness, sticktoitiveness and accomplishments of this self-educated legless farmer is wonderful and is a good lesson to the indolent farmer or his son who has a complete outfit of legs and a stout, healthy body.

EDITOR'S NOTE—When Mr. Brown wrote to us concerning the work of Mr. Briggs, we at once assumed that the street car company had been forced to pay to the injured man such a sum as made it possible for him to purchase a farm. We asked if our assumption was correct, to which Mr. Brown replied:

Mr. Briggs was a farmer in his youth, and his wife had lived on a farm. Circumstances obliged them to quit the farm and move to Grand Rapids, where Briggs got a job as motorman on a city electric line. They both had saved a little money. Briggs secured nothing from the car company, except that the company helped out on his fourteen months' confinement in the city hospital.

He Has Accomplished Much in Short Time

When he finally recovered, he had enough to partly pay for his farm. He and his wife are both scientific farmers and great workers. They hire very little help. Mr. Briggs works all the time and can do any and all kinds of farm work, even to carrying out pails of swill and feeding the pigs, shingling a high barn roof, climbing the windmill tower to oil the gearing, catching and castrating a pig, harnessing a three-horse team and hitching up, etc. He is the most practical and successful farmer in the neighborhood. After he cuts his own wheat, he goes over to his neighbors with his binder, all alone, and cuts from twenty to forty acres more.

His farm is worth twice what it was when he bought it a number of years ago. He recently finished a fine new house with modern improvements. He hauled all the lumber and other material from the city five miles away, doing the loading and unloading himself. He is a carpenter and machinist, naturally, though he never worked in the shops. He is stout as an ox and a wonder to everyone who visits his farm. He has actually shamed some other farmers who have long grumbled because they could not make farming pay. But he can. His cows are now producing more milk than any other herd of the same number in that section, and Mr. Briggs takes care of them all the time. He feeds them a well-balanced ration with his own hands. He climbs the hay-mow and silo-ladders and throws down the hay and silage, then carries it in and gives each cow her proper ration according to her power of assimilation and performance at the pail. He milks his cows, cleans out the stable and has more fun "farming it" than any man with two legs and feet. He whistles and sings while at work and is one of the most sensible, well-informed and jolly of all the farmers I ever met. He takes many papers and magazines, and reads them. He is a thorough business farmer and profits by it.



Cows help make the farm pay satisfactory returns

The Market Outlook

Peaches are Plentiful

IN SPITE of modern means of transportation, improved and more organized systems of distribution, and better control over diseases and insect pests, the southern peach-harvest, at this writing about closed, shows that there are still such terms as "overproduction" and "glutted markets" in our vocabulary.

In the past we have heard cries of poor railroad service, or crop ruination by the "brown rot," but this year the fact remains that the railroads supplied at least fair service, and there was no loss by disease. *Too much fruit was produced.*

The top-notch prices on Elbertas shipped from the Southern States to Chicago were \$1 to \$1.15, while the bulk of the crop brought about 80 cents a bushel; some cars even sold as low as thirty to forty cents a bushel. No wonder we hear the natural result of such prices: peaches in Texas being fed to the hogs, and that many growers are actually destroying their orchards to grow general farm crops, such as oats, cotton and corn.

Mr. J. C. Whittle, who owns the six-hundred-acre "Bagley-Bey" peach-ranch at Americus, Georgia, declares he will pull out and burn his peach-trees at once. His net returns this year were less than \$13.50 per acre.

This only goes to show, it seems to me, that any fruit-growing industry can be overdone. Peaches, of course, are a very perishable crop to move such a distance, but nowadays one hears many long-headed fruit men saying that even the growing of apples will soon be a source of great regret to the thousands of owners of young orchards which will soon bear fruit.

The same old story has been demonstrated though, this season, in packing. Well-packed four-basket and six-basket carriers of peaches were disposed of at some profit, or are in cold storage waiting for better prices, but the poorer grades in many instances did not pay the freight charges.

From now on, peaches from the Northern States will occupy the market, and prices should be firm. These regions will produce more than was at first reported, however. Last spring the peach outlook for Michigan was very slim, but now reports indicate a good crop of early peaches, and a fair crop of mid-season and later peaches. One of the peculiar things about the Elbertas, which had the severe winter to contend with, is that some trees have a full crop, while others adjacent and in an equally good location have none at all.

A. J. ROGERS, JR., Michigan.

What of the Future?

THE Bible says seven years of plenty and seven years of famine. We are now up against the seven years of famine in the cattle business. I advised (in a recent letter) looking out for the soft spots in July, and for once I was right. Cattle are steadily advancing.

We have marvelous crops in western Iowa, eastern South Dakota and Nebraska, all kinds of pasture and roughage, and when the corn is husked there will be a great demand for cattle and a great shortage of cattle to fill that demand.

It is hard for anyone not on the market to realize what good cattle are selling for. We had on to-day's market (August 5), at Sioux City, one hundred steers which had been bought by a dealer in the yards from a ranchman in South Dakota, lumped off for \$85 per head. I have no doubt the ranchman chuckled all over when he realized such a price, and yet these steers sold on the market, off grass (they never had seen grain), for \$8.30, and weighed 1,417 pounds apiece, making the speculator a net profit of \$27.30 per head. Times are good, and the ranchman made money enough, anyway.

I sold to-day forty-three head of mixed 900-pound steers and heifer yearlings locally for \$9.20, which is easily equal to \$9.70 in Chicago. This is as high as was ever known for such cattle to sell for on the open market. Any sane man would naturally say "this can't last." Well, I'm afraid it will. So confident am I of beef prices continuing high, that I have been fool enough to contract three hundred yearling steers at \$6.10 and fifty yearling heifers at five cents. These cattle will be delivered in November, will weigh 725 and will have cost me \$6.25 in my yards. If I break even next June, somebody is going to pay for beef.

One thing in the cattle-feeder's favor this year is (if the frost keeps off) cheaper feeds. Corn will be bought for less than forty cents, and you must remember that a six-cent steer with forty-cent corn makes just about as cheap beef, on a six-months' feed, as a five-cent steer with fifty-five-cent corn.

Farmers might just as well get it into their heads that the most profitable farming for the next few years is the live-stock end.

It follows just as sure as the sun goes round, that when corn goes to fifty cents per bushel and cattle and hogs have a bad year or two, the crowd gets out of live stock and tears the stuffing out of the farms raising corn. Then the pendulum swings the other way—corn flops off because there is less demand, and less cattle and live stock to eat it. That's what we are up against now.

There is an old saying that "every dog has his day." The live-stock man is surely going to get his day.

It also naturally follows that pork and mutton must bring good prices. (To-day mutton is the cheapest thing on the board.) The successful live-stock man is he who always has something to sell when the market is right. W. S. A. SMITH, Iowa.

EDITOR'S NOTE—The Sioux City Journal of August 7th, in commenting on the work of Mr. Smith, said:

Forty-three fed yearling Shorthorns, mixed steers and heifers, weighing 894 pounds each, were sold to-day at \$9.20, Fred Patterson, for the Cudahy Packing Company, being the purchaser. The price never before was equaled on an open market in the United States for this weight cattle.

The offerings were shipped by Capt. W. S. A. Smith, Leeds. The "dainty babies" were bought as calves, last November, and have been on a balanced ration ever since, consisting of eighteen pounds of ensilage, ten pounds of corn, one and one-half pounds of cottonseed-meal, and wheat-straw. Mr. Smith has made a long study of feeding stock for market, and says that these rations are by far the cheapest procurable at the present time.

"I do not look for the highest per cent. gain. To secure this one has to buy expensive feed, and a big share of the profit is lost in feeding," asserted Mr. Smith.

Realizing \$9.20 on the local market is equal to \$9.70 at Chicago, freight and shrinkage being considered.

Mr. Smith for a number of years has been head of the live-stock department at the Interstate Fair and has taken many premiums. He also won ribbons at the International Live-Stock Show at Chicago last fall.

Yearling Demand Exceeds Supply

AT THE close of July and early in the present month the sheep-market showed increased firmness, with a tendency toward even higher prices. Though southern lambs began to fall off in numbers and in quality, the shipments from Idaho, Washington, Oregon and Montana were large enough fully to meet the demand, while the packers seemed disposed to take everything of decent killing quality that was offered, paying all the way from \$6 to \$7.75 the one hundred pounds. In many cases they bought lambs at \$6 which ordinarily would have gone to the feeders, whose choice of desirable lots was greatly restricted thereby; on some days in Chicago the latter had to pay as high as \$5.75 for good feeding lambs.

The heavy crop of grass on the ranges is likely to induce many who have been in the habit of marketing their lambs, to retain them and do their own feeding. The probable high price of wool will also act as an incentive to keeping them. The fact that California and the large Pacific Coast cities are demanding mutton and lamb will turn the tide of western lambs, to a considerable extent, in that direction.

The demand for yearlings for feeding purposes was greater than the supply, for, as in the case of the lambs, buyers seemed to want all they could get for killing, both Westerns and Natives, at from \$4 to \$5.50. Wethers were not so much called for, but breeding ewes, of which but few have been offered, were in good demand, desirable sorts ranging from \$4 to \$4.50, and some well-bred Downs reaching \$5. To sum up the matter, prospects are at the present time very encouraging for those who share in the reviving faith in sheep as a most important element in good farm management.

Much encouragement to hold on to this faith is to be found in a paper read at the recent International Conference of Sheep-Breeders by Wm. A. Mansell. In it he mentions a farm which for sixty years has been maintained in a high state of fertility solely by the folding of ewes and lambs on root and forage crops, assisted by liberal rations of grain and oil-meal; and another case of a Scotch farm with which he was familiar, where the yield of the grain crops had been increased fifteen to twenty per cent., and its rental value greatly enhanced by the same system of sheep culture. He also draws attention to the importance of the fact that special attributes of some breeds of sheep make them best fitted for certain locations, "nimbleness and hardihood being essential for the higher altitudes where the herbage is short and sweet, while in grain-producing districts and low lands early-maturing sheep

of greater weight are desirable." He declares sheep to be invaluable as stubble-cleaners and weed-destroyers and as consumers of much that would, but for them, be wasted. These points have more than once been drawn to the attention of readers of FARM AND FIRESIDE, but the fact of their being considered of sufficient importance to be specially mentioned before the International Conference must serve as the excuse for again referring to them. They seem to be of special importance to our farmers, because our weeds are plentiful and our laborers few.

JOHN P. ROSS, Illinois.

Last Year's Hog-Market

A YEAR ago the hog-market presented an entirely different aspect from that of to-day. At that time drought, causing dried pastures and small yields of grain, and cholera in the territory tributary to Chicago, brought a flood of little pigs to the market to be sacrificed at a price hardly equal to the cost of producing. Among the heavier hogs but few had been fed out, because of the scarcity of feed both in the way of pasture and grain. To-day every hog comes to market carrying a good load of fat on his back.

During the first week of August, 1911, the receipts of live hogs at Chicago amounted to about 29,000,000 pounds. For the same period this year the receipts were 33,000,000 pounds. In spite of this increase of 4,000,000 pounds, the market is ninety cents to one dollar higher. The scarcity of other food-stuffs and the general good quality of the hogs now reaching market are responsible for this condition. Future prospects look equally favorable; cattle and sheep shortage will continue, and hogs are not overly plentiful. The packers are not disturbed at the heavy stocks of pork in their cellars, as sooner or later those places that are deficient in pork supplies must buy. With southern United States and the most of Europe in this condition, Patrick Cudahy forecasts that during the fall export trade in lard will improve.

The current market is on a fresh-meat basis. Hogs weighing under 240 pounds find a ready market, both in local retail channels and in eastern shipping demand; above 240 pounds weight encounters discrimination, and prime heavy sows sell a dollar or more under top quotations. But few unfinished spring pigs are expected during the early fall months. LLOYD K. BROWN, South Dakota.

The Selling End

WE MUST pay more attention to the selling end. Every manufacturer knows that, no matter how great or how good his output, there must be an efficient sales-force behind it, or the road to success will be hard, rough, perhaps unattainable; certainly long dragged out. Aided by practice and experience, nearly anyone can become a producer. On the other hand, it has been said: "Salesmen are born, not made."

This only goes to show that the sales department is, perhaps, most difficult to bring to the point of highest efficiency. Of what use is it to fill the warehouses with the finished product unless there be an efficient sales-force to dispose of it at a profit?

The farmer is a manufacturer. He may be a born salesman, may not. If not, he can still improve his selling ability to a noticeable degree by following an intelligent line of thought with intelligent methods.

Here, as elsewhere, the law of supply and demand reigns supreme. But by the application of good, sound business principles a demand may be created which otherwise had never existed. First, last and always, in creating a demand one must have the goods, of at least as good quality as any offered on the market; better, if possible. This rule holds good always and everywhere. You may have noticed, may not, that the very best goods in every class bear a distinctive name or mark—they could be identified by this mark anywhere, at any time.

Stamp each egg with the distinctive mark already decided upon, and the smaller this stamp may be, the better. This identifies each egg. Next, select eggs with reference to uniformity of color, shape and size, as these points make for good appearance. It should be remembered that hundreds of sales have their beginning in pleasing the eye of the prospective customer. Pack eggs carefully in neat cardboard cartons, placing the gummed label on the outside in such manner that the label must be broken before the carton can be opened.

Approaching prospective customers for the first time, take a carton with you to the door. State your business plainly, courteously and to the point; call attention to the sealed package bearing the distinctive mark; explain that your eggs are always strictly fresh, satisfaction guaranteed, or money refunded; break the seal, and display the contents of carton. Providing your previous work has been properly done, you will make a sale nine times in ten. If you fail, don't be discouraged. Rather, write in your note-book that somehow, some day, that party will look you up and become a regular customer, for you have created a favorable impression. The distinctive mark will keep you and your product in mind; the sealed, guaranteed package will act as a magnet. At the first hint of trouble with the party at present supplying that family, you will come into your own.

By adapting it to the article in question, this plan can be followed in marketing anything usually sold by the farmer.

Thousands of farmer-salesmen are proving daily that among a certain class of buyers quality is the only dependable password; price is silently ignored. This class of buyers is the one to cultivate. No doubt you have access to more or less of this trade. Are you improving your time? It's up to you. E. A. ELLSWORTH.

California's Intensive Farming

THE California farm train, at this writing, has just come in from its latest run, this time through the great Sonoma Valley in northern California, between the coast mountains and the sea, where are the famous Burbank's experimental grounds and the scene of the State's poultry industry. Twenty localities were visited. The cars were thronged with visitors, many traveling a distance of forty miles. This is the fourth year of the "special" and completes the first thorough agricultural survey of the State. It is a projection on wheels, a movable school from the state university's college of agriculture and one of the most extensive efforts of the kind that has been put forth anywhere.

The original experimental train was sent out November 9, 1908. It was made up of a locomotive and three cars, the seats and interior furniture substituted by exhibits of the college's agricultural work. There were samples of the State's soils, with the Hilgard Charts showing their analysis and the best processes with them; demonstrations of the State's various agricultural problems, with their solution; expositions of plant and animal disease and insect pests, with their remedies; a department devoted to dairy industry, with a lecture-room. The train was manned by eight experts from the best of the college force, was in service sixty-four days, journeyed 2,603 miles and had 37,270 visitors.

The next year the number of coaches was increased to five. Five thousand six hundred and seventy-four miles were covered, and the patrons numbered 73,603. The subjects illustrated were enlarged to include viticultural, cereal and forage crops; entomology; irrigation; veterinary science; poultry, with model sanitary chicken-yards and coops; home economics, and a large attention to animal husbandry.

The following year ten cars were put on the road with twenty-one demonstrations and lecturers, increased exhibits, apparatus,

Whether you are for or against equal suffrage, read Page 13. It tells a story

Follow this lead. Select some name, word or mark, and let it be terse. Use this mark, together with your name and address, on everything you have to sell. For package or carton goods, such as eggs, butter, and the like, use gummed labels; for other goods, small shipping-tags. Guarantee each and every article sold, and, above all, measure up to your guarantee. Let your slogan be "Satisfaction and goods as represented, or money refunded." The largest mercantile establishments are operated on this plan, and the individual who follows it to the letter is on the right road.

Eggs are a year-round product. Let us consider a plan for selling eggs to private trade at a price a few cents per dozen above the regular market price. First, every egg must be strictly fresh, guaranteed absolutely and always. See that each egg is clean. Never mind the "bloom." Impress upon your customers that your eggs are strictly fresh, prove it to them every time they buy, and bloom will be forgotten. Besides, everybody prefers a clean egg to a dirty one.

etc. The number of visited stations grew from 68 to 225, 4,000 miles were covered, and the attendance reached 78,224. This year the mileage of the train was over 6,700 miles. The farmers, horticulturists, vineyardists, orchardists, bee-keepers and stockmen came with their note-books. An extra car carried various specimens of various breeds of cattle and hogs. The schools adjourned, and the teachers attended with their pupils: for agriculture and horticulture, with their school gardens, are now largely incorporated into county schools.

And so this State is being railroaded out of its old ranch farming. The big wheat-fields are broken up, maximum production per unit of area has taken the place of mass production in grain. The roving special is California's latest advance toward intensive farming. Twenty-six States have now put in commission these missionary trains. The agricultural temperaments of California with its contrasting climates and its varying chemical and physical constitution of soils demand them. CHARLES J. WOODBURY.

Poultry-Raising

State-Fair Values

NOW, to be strictly honest, I cannot tell you all I learned at the state fair, but I will tell you what I learned by exhibiting my poultry there.

One value of the breeder's presence at the show lies in the necessity of his being there himself to care for the exhibit he has. I am not complaining of or wishing to reflect on the care that the management gives our stock, but all birds are not accustomed to the same kind of care, and no one knows quite so well how to look after the birds as the owner.

I meet a great many of my customers of the year, and this affords an ideal opportunity to show them my stock.

The real value of a show of this kind depends entirely upon how hard you are willing to work, before and during the progress of the show.

As to the advertising features of the fair exhibit, I consider this the real object of showing birds. I think that a good state fair is hard to beat as a place to advertise. Of course, I know it is out of the real poultry-showing season, and birds are in bad condition, and many breeders turn the opportunity down with this excuse, but I have noticed that if the farmer stays at home, it is principally because he is a little afraid of competition.

I consider that I was well paid for my time and expense at the last New York fair. I figure that it was worth as much as fifty dollars spent in any other legitimate advertising. I made several sales, and right along I am getting orders that especially mention my exhibit at the fair. While at the fair, I met many persons who said they were interested in my line and would soon be in the market for both stock and eggs. Of course, all of these people did not buy, but it gave me a chance to send my catalogue and mating list direct to prospective buyers. The results in orders have been satisfactory.

A. E. VANDERVORT.

One Turkey Method

THE greatest element in successful turkey-raising is a long dry season. In these Western States we have many months of sunshine and so are successful in rearing turkeys. These turkeys are herded upon the

weeks following incubation. A chicken takes naturally to having feed handed him, but the turkey is almost self-supporting until cold weather. Turkeys are good for the fields. They can be driven anywhere you wish from one field to another.

Turkeys always find ready sale and are almost clear profit. There is always a demand for them; the market is never glutted. The time of overproduction has not yet arrived, and it seems a long way off. The fact is that turkeys are difficult to raise.

Eternal vigilance is the price of success with turkeys. Blackhead in the Eastern States has just about put a stop to turkey-raising. I have examined many dead turkeys and have found the livers to be enlarged and covered with yellowish spots. Nature often rebels against our artificial methods of feeding. In the early stages I often give calomel pills for three nights and then a dose of castor-oil. I often feed them wheat. I take about one or two gallons of wheat, pour over it five or six tablespoonfuls of turpentine and cover the wheat with boiling water and let stand overnight. Not much can be done with sick turkeys.

MRS. B. F. WILCOXON.

Time saved by letting a burdock alone is time lost.

If you must get even with somebody, let it be the man who has done you a favor.

Fresh Water for Chickens

AN OLD well on the back lawn that is no longer used to supply drinking-water for the house is much used for watering young plants, watering stock and for scrubbing purposes. Almost every half-hour some person is pumping water for something, so the idea of using the waste water for the chickens suggested a means of keeping the lawn dry and saving work. It took only a few minutes to rig up an old-fashioned wooden trough to lead the water to the chicken-yard. When it proved very satisfactory, an iron pipe was substituted in its place.

Outside the fence a large trough, shallow enough that the young chicks could not drown, was arranged, with wide old boards making a sort of floor in front of it. Of course, this arrangement easily overflowed, but one end of the trough was tilted slightly to allow the surplus water to run off in a little ditch and not make the ground all around muddy and nasty. Every few days, or oftener if necessary, the water-trough is scrubbed clean, as are the approaches, and the chicks are sure of a good drink at all times.

We carefully placed the drinking-place where the shade of some shrubbery would shield it, and it makes an ideal resting-place for the fowls in warm weather. The goslings delight to wade in it, but as soon as possible we graduate the goslings to another yard, where they do not disturb the water with their feet.

MRS. W. C. KOHLER.

A Success With Turkeys

FOR a number of years I have been interested in raising turkeys. I began operations on a small scale. Finding it a very profitable experiment and a pleasant pastime, I have enlarged the number of my breeding stock each year. Now I get orders from almost every State in the Union.

I keep only the Bourbon Reds, and I consider them far ahead of any other kind. As to size, they run well up to the Bronze. They are hardy and healthy and are very gentle and easy to manage.

Until the turkeys are about a month or two weeks old, I yard the mother with her poults. After that I let them have the run of the pasture through the daytime, bringing them home each evening to roost. They soon become accustomed to coming home at evening, at which time we give them a good feed of small grain, such as wheat, Kafir-corn or millet, with all the clabber cheese that I have to spare.

My roosting-house opens to the south with a wire front. I roost them there until they are large enough to fly upon a large outdoors frame. I like to get them to roosting outdoors as early as possible, for the outdoor life is the natural life of the turkey. Plenty of clear fresh water is necessary to the turkey at all times. After the poults have had their fill, the surplus water is emptied and the pans cleaned for the next watering-time.

Since beginning to keep Bourbon Reds, I have had no serious trouble with disease. I know nothing of blackhead from experience. The warding off of disease is easier than the curing of it. I do this by putting a little crude carbolic acid in the drinking-water once a week. A large percentage of turkeys that die are from two to three weeks old. They need, at that age, careful handling, good nourishing food and exercise. As soon as they seem strong enough, I turn them out to rustle for themselves, when they can get bugs and worms to eat.

My nesting-house is a long shed with a wire front. My turkeys all lay in there, so I have no trouble in gathering the eggs.

I try to have early hatching, so that by the first of November I begin shipping them and continue so long as my supply lasts. Each year the number of orders have exceeded the supply. Mrs. J. W. HUSTON.

Alfalfa grows so fast that a lazy man is apt not to like it.

Long finger-nails are a poor recommendation for a dairy hand.

If honesty always paid the best, in coin, preaching would be superfluous.

Doing wrong in a nice way is a long step toward doing it any old way.

Bossism in politics is the spirit of feudalism, and blind partizanship is simply vassalage.



Turkeys eat insects and wasted grain

harvested grain-fields. They not only eat the wasted grain, but clean up a field of insects, etc., which are injurious to crops.

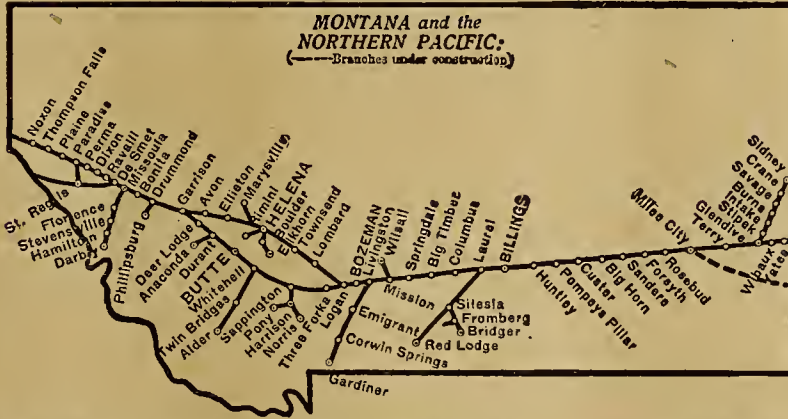
Turkeys begin laying in February. I set the eggs under hens, giving each hen nine eggs. The little turkeys are placed in a coop with the hen and fed hard-boiled eggs and oat-meal with green onion-tops chopped fine—not fed much at a time, but often.

I keep the hen in the coop one month. The poults have free range or run after they are a week old, as I have a pen attached to the coop. After the second week I feed corn bread and curd with green onions chopped fine.

A turkey-raiser in Texas has acres of chives which she uses for feed. From hatching-time until the poults shoot the red is the time when many lose their turkeys. Wet weather is a detriment to turkey-raising. If you want to kill a poult, just let him get his feet wet; he can't stand wet feet until pretty well grown.

Cleanliness is half of the battle in turkey-raising. When the poults are only a few days old, I rub fresh lard on the back of the head and under the wings and at the root of the tail. I do this every two weeks to kill mites.

Turkeys are the choicest fowls that can be taken to market, and they bring the highest price of all fowls. Turkeys require the most care and attention during the first few



☐ The Northern Pacific Railway has 1,431 miles of main and branch lines in Montana, to which will be added some new mileage this year.

☐ OPPORTUNITIES are on every hand in Montana—not only to acquire valuable and productive farming lands, but also in the many growing cities and towns along the Northern Pacific Railway.

☐ Ask for our "Opportunities" book which lists Montana's "Opportunity" points, along the Northern Pacific.

☐ The Northern Pacific Railway Company has lands for sale in the various states along its lines. Printed price lists and descriptions will be furnished on application to Thomas Cooper, Land Commissioner, Northern Pacific Railway, St. Paul, Minn.

IMPORTANT NOTICE TO HOMESTEADERS:

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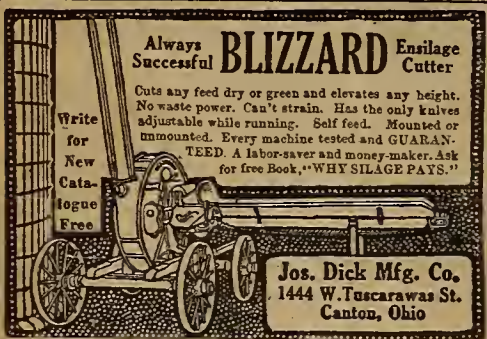
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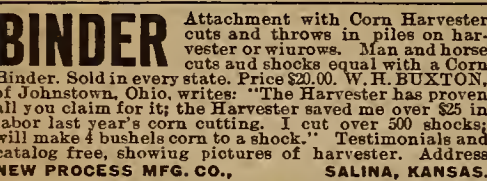
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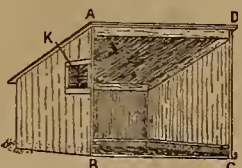
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A Model Farrowing-House



AS SEEN in the drawing, A B C D is the open front to the house, facing sunrise. The house is six feet wide, six long, five feet high in front, falling back to three feet in the rear. On the scantling extending from A to D, a curtain is hung; it covers the entire opening to within two inches of the sill (B C). In the lower end of the curtain, a good-sized pole is encased. This keeps the curtain in place and prevents the wind from blowing it up. The old sow can push the curtain aside and go in and out at will, and the little pigs soon learn to slip under. The advantage of having a curtain is that it can be thrown over the top of the house on pretty days to admit the sunshine. It does not need to be opened and shut like a door, yet it is always in place. Sail-cloth makes a good curtain. The floor to the house should be made of plank or concrete. There should be a strip six inches wide, and six inches from the floor, extending all around on the three closed sides, so the pigs can go under. When the mother lies down they won't get mashed.

Give the sow nice, dry oak-leaves for a bed and not wheat-straw, as straw will give her and the pigs the mange. Change these leaves every three weeks, and keep down all dust. Attached to this house, extending mostly in front of it, should be a well-enclosed plat twelve by fourteen feet. In this lot the mother and pigs should be fed under sheds. Never feed them in the sleeping-apartment. The rear and sides must be made of double boards with dry dirt well rammed between, so that no cold air can get in. Make a small window at K.

E. W. ARMISTEAD.

Shall Alfalfa be Ground?

ALFALFA-GRINDERS may have many forms, but one of the best that has come under the writer's notice works upon the plan of the cylinder and concaves in the common thrashing-machine. In the case of the alfalfa-pulverizer, however, the teeth on both the cylinder and concaves are sharpened and really cut the hay instead of grinding it into a meal as other mills do. In the better class of grinders, extension feeders, which have removable floors (which can be replaced by screens), lead up to the grinder proper.

The hay passes over these screens, through which a portion of the loose leaves fall, and thence on to the grinder. From this the meal travels up to the mixer, where it is mixed with the ground grain, and thence it goes to a sacker. In some mills a dust-collector collects all the dust that may arise from the process of grinding and gathers it into a suitable receptacle, where it stays until enough is stored up to pay for taking it out and mixing it with grain and feeding as real alfalfa-meal.

Where hay is ground for hogs, the leaves from previous grindings are gathered up and ground with the alfalfa, only in this case the meal is much finer than that for either horses or cattle.

Careful estimates of those in the grinding business show that where the grinding is done on a large scale the cost ranges from one to one and a half dollars per ton. To offset this, we know there is no more feeding value in a pound of the meal than in a pound of the whole hay, but that saving does come in the prevention of waste and the convenience of handling the meal. Taking year-around feeding conditions, we find at least here in the Mid-West, that there's practically no waste in feeding the meal. The waste in feeding the whole hay ranges from about twenty-five per cent. for sheep to around eighty per cent. for hogs, with cattle and horses at the fifty per cent. mark. Where alfalfa is selling at ten dollars per ton, as it has been doing for several seasons, we can readily see the saving in alfalfa-meal.

One experiment that will show the value of alfalfa-meal over whole hay was tried out on twenty-eight head of horses, which were worked heavily all during the time of the trial. While on grain and whole hay, they were fed three gallons of grain and thirty-five to fifty pounds of hay daily. When these horses were placed upon the meal diet, they were fed but fifteen pounds of the meal and three gallons of corn each day. On this they kept in better shape than when getting all the hay they wished for both day and night. It might be added that these horses, unlike those owned by other alfalfa-mill men, got no feed aside from this meal-and-ground-corn mixture.

When hogs were worth six cents per hundred and corn sixty cents per bushel, three lots of six pigs, each weighing an average of one hundred pounds apiece, were experimented upon to test the relative merits of ground alfalfa-meal mixed with ground

corn and fed dry, the same mixed feed fed wet, and ground meal with shelled corn fed dry. In each case the pigs received a slopping of shorts twice per day.

After feeding two months, the owners found that they were breaking even on the last two lots, but had been gaining fifty cents per head per month where the mixture was fed dry. These shoats gained at the rate of a pound per day. Thereafter this firm, who feeds out several thousand head of hogs each season, fed their hogs dry meal and ground corn mixed together, with about a gallon of shorts-slop daily for each hog.

C. BOLLES.

You can tell a happy farmyard as far as you can hear the chickens.

Where there's a will to do well, there ought to be a few hands at work doing it.

The Sand Treatment

I HAVE just read the article by A. S. Alexander, "Calf-Cholera Treatment," issue of April 13th. I was certainly impressed with the article, especially with his strong appeal for cleanliness in handling milch cows. We should be very careful in the handling of milk. I am in hopes that the time will come when the different States will have an inspector who will visit every dairyman and who will make a thorough investigation of each herd. I was connected with a creamery for a number of years, and think I realize the importance of cleanliness. But, as Mr. Welliver sometimes says about his articles, I am getting off my subject.


I am old foggy enough to always admire home treatment when it has the elements of usefulness, and this remedy I give here is one you can "swear by." Just try it, and you will be convinced. If your calf is troubled with scours, give it a dose of common sand, just sand. I use a quart bottle. Fill it nearly full with warm water, put into this a good handful of clean sand, drench your calf, and the work is done. I have used this remedy for the past twelve years and know whereof I speak. During all this time I have had but one case that I could not cure by this treatment. Some hesitate to try this treatment, thinking it dangerous. I hesitated at first, but as a last resort I did try it. It has proved so successful that I hesitate no more.

C. M. READ, Oklahoma.

This assuredly is a novel prescription; but we are quite willing to accept our correspondent's assurance that it is worth trying and effective in some cases. It will not, however, be of any use in the cases of "calf-cholera" about which we wrote. Those weak, puny, "living abortion" calves certainly need sand, or grit, vim, vigor and stamina. But these things—and grand attributes they are—must be inborn, not given from a bottle. Seriously, the calf-cholera cases prove incurable, unless they are treated with polyvalent dysentery serum as a preventive first, and then as a cure, should they contract the disease despite its protective effects. Nor does the serum always prevent or cure; but it has given far better results in practice than anything else hitherto administered. As to other forms of scours attacking calves of a few days old to a few months of age, it is remarkable how many different sovereign remedies have been devised and prescribed, and the sand idea may suit some of these cases. It should be mentioned, however, that sand is often deadly. It will cause colic in horses, and it has killed many a lamb and sheep. We found it to be the chief ingredient of a commercial worm-powder which was killing lambs. We knew of a quack who made a good profit from sifting sand and adding it to wood-ashes, charcoal and fenugreek to make a worm-powder for horses, until the people got wise to the combination and preferred to buy something more costly and scientific.

A. S. ALEXANDER.

Training Horses' Manes



WHEN the horse's mane inclines to the wrong side, an excellent plan is to make a cover, like the one here shown, to fit closely over the horse's neck. It may be made of heavy muslin or canvas with buttons underneath to fasten it in place. It does not interfere with bridle or collar. It can be used on the horse as long as it is needed.

R. A. GALLIHER.

Perhaps It's Cholera

AN OHIO reader says of his hogs: "They lose appetite for several days; some have bowel trouble; they frequently move about and change position; some die in a day or two, others live for a week."

Hog-cholera is incurable, but may be prevented by vaccination with serum. The serum may be applied hypodermically by any graduate veterinarian. It is best to have a post-mortem examination made by a graduate veterinarian. He will be able to tell if the treatment is necessary. Meanwhile isolate sick hogs and change others into a new, temporary pen, on ground not formerly occupied by hogs.

A. S. ALEXANDER.

The Horse for the Farm

SOME years ago, while visiting the state and county fairs for a paper I was publishing, I became much interested in the qualities of the heavy draft-horses then being imported. In order to get at the views of the importers on the subject, I cultivated the acquaintance of many of them.

I had experimented on my English farm with Percherons, Normans, Clydesdales and Belgians, and had come to the conclusion that the first two of these breeds were admirably fitted for the heavy hauling of cities; that the Belgians excelled for railroad and other construction work because of their aptness for keeping out of danger and of learning to guide themselves in the work required of them, and that the Clydesdales were good both on the farm, from heredity, and on the road because of their weight and docility. I had also made up my mind that none of these, whether thoroughbred or the produce of stallions of any of the four breeds on English mares, were exactly what I wanted on a farm where a good deal of heavy clay was to be found. I suppose I was prompted to these rather costly experiments, extending over a period of five years, by the youthful conviction, so common to all of us, that we know it all better than our grandfathers; and in face of the fact that among the ten horses in the farm stable were two in full work, one twenty-eight years old, and the other thirty-two, bred by my granddad, and their ages proved by his carefully kept stud-book. These two, I admit, were somewhat favored by our old horsekeeper who had tended them as colts, but they were still almost as capable of doing a long day's work as any of their younger stable-mates. They were thoroughbred English Shire horses.

By the end of five years I had gotten rid of all my foreigners, and till I ceased to farm I adhered firmly to the farm-horse beliefs of my ancestors, which were that the Shires are the best all-around horses for general farm purposes, whether thoroughbred or gotten out of good roomy twelve to fourteen hundred pound mares by pure-bred Shire stallions. They will stamp their nature and appearance on all their colts. I will now give my reasons for that belief.

But first let me give the one single reason given me by my friends, the importers, why they, for the most part, ignored the existence of the Shire horse. It was that American farmers had a deep-rooted objection to the long and shaggy hair extending from knee and hock down to the hoof, so marked a characteristic of the breed. One man, whose sons to-day are doing a most successful business as importers of all these breeds, including Shires, said: "My dear sir, I'm after the money. Of course, I know the good old Shire is the best farmer's horse in existence, but I'm not going to make enemies by bucking up against any man's prejudices, and so driving him out of my barn. The hair is queer to look at, and Americans hate to be 'guyed,' but you and I know why nature put it there, and custom has taught us how to take care of it."

The following, then, are my principal reasons for preferring these to any other horses, especially for small farms where steam is inadmissible, and please, good reader, do not cry "English prejudice," for I've lived over here fifty years, and I hope have gotten rid of all that stuff.

The Shire horse, then, is, I think, by heredity very handy and active on arable land. He seems to pick his way over ridge and furrow with none of that heavy, crooked and uncertain gait so often to be observed in the continental breeds. Centuries ago, when the Norman was the knight's war-horse, or a few years ago, when he and his Percheron brother were ridden along the roads to Paris by postillions, "Dobbin" was plodding soberly along ridge and furrow, and his descendants have learned the trick of keeping the straight line.

The Shire horse is light and quick in movement, a fast walker and with a great knack of throwing his weight into the collar when needed—and at no other time. He is tractable, good-natured and learns while very young the verbal directions of his driver.

The Shire is hardy, hard of bone, shapely, short-backed, close-ribbed, with good oblique shoulders, a well-carried head, fine eye and wonderfully good constitution. If well fed on good oats and hay, he grows amazingly during the first two years of his life. He is a good but not a gross feeder and endures changes of climate without injury, as is proved by his popularity in the English colonies, and which is now rapidly extending to the South American republics, and I hope, for our own sakes, to this country.

If properly cared for, the hairy part of his legs washed and thoroughly dried and the rest of him thoroughly groomed when he comes in from work, he will last longer than any other horse under the sun, except the Arab and the English thoroughbred.

To sum up the matter to a practical conclusion, I have a firm belief that the farmer of moderate acreage, who has a good roomy mare of any breed, say, of from twelve to fifteen hundred pounds, and wants to breed a race of good farm-horses for his own future use, can mate her with nothing so good as with a well-bred English Shire horse.

JOHN PICKERING ROSS.

Farm Notes

Human Machines

By G. Henry



ONE of the most pitiable things about it is that we become mere machines.

Perhaps the most distressing of all phases of human life and endeavor is a human being become a thing that is wound up and runs down, that ticks and moves automatically.

While we must admire regularity, maybe the most wretched trait we can acquire is machine-like regularity—which makes us get up at six, eat at eight, eat again at twelve, eat still again at six, fold our wings and stretch at nine, to lie stretched until six, when we resume the humdrum.

Let's watch the snow come and go. Let's have at least as much imagination as the birds, and sing when the sun shines, or even when it rains, for rain helps the grass grow.

There is romance in the sowing of a seed, for in the process of a growing seed we have visible, indisputable evidence of the goodness and power of God. It is not an accident when a little planted seed sends forth a long green stem, to feed you and me.

The water which leaves the earth's surface and sinks into the ground through one fissure, to be filtered and purified by its wanderings over and under rough and smooth pebbles, to issue forth again through another fissure, clear and sweet, is romance—the romance of nature. Appreciate it.

Watch the sun rise. Watch him come up in the morning to urge the corn to its best efforts. Watch him sink in the west, that you and your patient ox may sleep and rest. The romance of the sun!

See the snow fall softly, or pretend that it's angry. It freezes, it penetrates every crevice, it chills your toes and your ears and nose—but it covers with protecting mantle the roots upon which you depend for next year's sustenance. Is not that romance? Is not the snow charitable?

There is sentiment which is foolish, they say. But there is sentiment, too, which is necessary and right and justified, for it keeps your back from staying bent, your eyes from growing dim, your heart from degenerating into a leather sack, your brain from withering.

The great wonder is that every man doesn't become a poet when he finds himself in the center of a wide green field, and is permitted to fill his lungs with fresh air, undiluted, unpoisoned, untaxed!

Why no suggestion to women? Why no subject offered them for inspiration?

Because the women themselves are poetry, because woman is inspiration itself and inspires herself. Otherwise, we should not have had Joans of Arc of history and of to-day; and if our mothers were not inspired, where should we look for inspired men?

Federal Money Used

To Advance Agricultural Interests Throughout the Country

THE federal government will expend about \$125,000 this fiscal year in promoting the cause of better farm management, through the medium of county agents, who will impart instruction directly to the farmers and to farmers' organizations.

Such expenditure has been assured by a provision in the agricultural appropriation bill which allows \$300,000 for farm-management purposes. A part of this sum will be used in pursuing the farm-management investigations of which William J. Spillman has charge. Mr. Spillman, under whose division in the Bureau of Plant Industry the direction of farm-management matters falls, estimates that about \$125,000 will be available for the employment of agents in various counties and for the organization needed to make the work of these agents effective.

Farm-management efforts of the Department of Agriculture have thus far not been of a nature to bring the farmers of the country and the farm management experts of the Department in close touch. But a new order of things is at hand. Plans are being perfected that will eventually result in the best expert advice of the Department on practical problems of farm management being given to farmers in many counties directly. What is going to be done by the government this year is only a beginning. Next year, there is good reason to believe, Congress will largely increase the amount allowed for the spread of instruction and suggestion as to farm management. That the government will soon be paying out a million dollars a year for this purpose is not only possible but probable.

The word has only recently gone forth that the Department of Agriculture would have money available this fiscal year to help in paying the salaries and expenses of county agents or supervisors of farm management. But the idea has so far struck a responsive chord that applications for aid are coming in to the Department rapidly. Already the ap-

plications have outrun the amount of money the Department will have available this year.

The plan is for the federal government to pay half the salary and expenses of the agent for each county. The other half is to be raised locally. That is, while the government will have about \$125,000 to spend for this purpose between now and next June 30th, the end of the fiscal year, the fact that an equal sum will be raised in the different counties that want agents will bring the total expenditure for the promotion of farm-management advice and instruction up to \$250,000.

It is already clear that there will not be any trouble in getting the money raised in a number of counties willing to pay half the cost of maintaining a county agent or supervisor who is an expert in farm management. The awakening of interest in this subject is one of the best signs of advancement in the agricultural methods of this country. The awakening to the possibilities of better farm management is not confined to farmers and organizations of farmers. Chambers of commerce, railroads, banks and other business institutions are getting aroused to the importance of the question of how best to deal with the problems of the soil. The result is that the Department of Agriculture is assured that money for the support of county agents will be forthcoming, not alone from farmers' organizations, but from banks, chambers of commerce, railroads, and the like.

For instance, the Department of Agriculture has been advised that the State Bankers' Association of Kentucky is eager to cooperate in promoting the effort to improve farm management.

A sample telegram which is becoming numerous in Mr. Spillman's office reads:

"We've got our money raised. Please put an expert in Jefferson County."

Every day, telegrams of this sort are received from persons taking the lead in counties in the effort to raise money to support farm-management agents who will give expert advice to farmers.

The plan of the Department of Agriculture is to cooperate with the state colleges of agriculture in this movement. A state supervisor will be stationed at the state college of agriculture and direct the work all over the state from there. The state college will pay half the salary and expenses of this supervisor. Where possible, the state supervisor selected will be a man actually connected with the state college and familiar with state conditions. The system of organization may be illustrated by taking the case of the State of Michigan. It has eighty-seven counties. The state supervisor will have general charge. The counties will be grouped, so there will be about ten in a group. For each group there will be a supervisor and then, for each county, the local agent. The entire organization will center in the office of the division of farm management of the Department of Agriculture.

Inasmuch as the government is expending liberal sums in the Southern States for farm demonstration work, the expenditure for advice and instruction in farm management will largely be north of Mason and Dixon's line.

The county agent must be a man versed in farm management and so qualified as to meet the approval of the Department of Agriculture. His work will not be to sit in an office and write essays in reply to inquirers. He will travel through the county, seeing farmers personally and coming in contact with farmers' institutes and other meetings. He will endeavor to help the farmers in working out two classes of problems:

First, those relating to the organization and conduct of the farmer's business.

Second, methods of farming.

To illustrate: If an expert should advise a farmer that his cropping system was at fault or how he could improve on the marketing of his crops, that would relate to organization and conduct of business. If the expert should put on a pair of overalls and show how to spray and trim a neglected orchard, that would relate to what the Department means by dealing with methods of farming.

The possibilities of expert aid and advice in farm management are not matters of theory. They have been shown in a number of concrete cases. If the plan works out as well as hoped by the Department, it will bring to the doors of thousands of farmers the expert counsel and information that is now to a large extent bottled up at Washington.

JOHN SNURE.



The nine-bundle shock—the sort that stood the rains this season

Stored-Tobacco Troubles

THERE are a number of diseases which cause a great loss annually to tobacco-packers throughout the country. The most common of these are shed-burn, stem-rot and black rot. Owing to their economic importance, these diseases have been the subject of considerable investigation by the Wisconsin Experiment Station at Madison, and recently Mr. James Johnson, who has been conducting the work, has made several discoveries which will probably lead to a complete prevention of black rot and kindred diseases, if proper methods of curing and sweating tobacco are followed.

Previous to Mr. Johnson's investigations black rot was a name applied merely to a condition which was at the most very imperfectly understood. Leaves of tobacco stored for some time became black and rotted, as the name suggests. It has been determined, however, that this condition is the result not of surrounding atmospheric conditions, but is a fungous disease; that is, it is due to the growth of a parasitic plant upon the tissues of the tobacco-leaf. This parasite, when present in a large amount, gives the peculiar condition known as black rot. Having determined that this is a fungous disease naturally suggested the fact that it could be prevented by sweating and curing tobacco under such conditions as would prevent the development of the parasitic plants. Such conditions could be obtained by sweating and curing the tobacco at very high temperatures, and where the air was kept as dry as possible. The best method of carrying this out has as yet not been determined, however. It is still in the experimental stage. We hope, however, that before another season's crop is harvested Mr. Johnson will be able to give the exact methods to be followed in the prevention of these troublesome and costly diseases.

JAMES H. MURPHY.

Without a Spreader

BUYING a manure-spreader was one of the first investments we wanted to make, but while the money for it was coming we didn't think the manure ought to lie around until cleaning-up day, or until we had enough piled up to make a day's job for a hired machine, so we took an old low wagon, wide-tired, for our spreader, and began to make manure-gathering a daily chore. We tried to establish the rule that every time this wagon came in from work it was to be backed up to a barn window, or back door, or into the big stock-shed, where some manure could go into it. It seems now as though it is almost always full, and when we want to use it, we are obliged to empty it. If we are in a special hurry, it isn't far to the orchard, garden or pasture.

About a year ago we began to spread these loads on a strip of meadow nearly a half-mile from the barns, where, on account of the distance and a hill to climb, manure of any kind had apparently never been applied. Also, every time we had to go across this meadow for wood or feed, we threw on what manure was to be found and took it along, never going either way empty. And somehow, no matter how we clean up, there is always manure to be picked up somewhere, if only in the form of a barrel of ashes or last night's bedding. The results have been really surprising. A hasty tally from the diary shows that seventy-one loads have been put on that meadow strip alone, under this plan. Our use for a hired spreader so far has been to clean out the big open shed where droppings and bedding are allowed to be trampled in, and for scattering manger chaff and wet straw-stack bottoms. We will have a spreader of our own some day and make the manure do us twice the good and cover thrice the ground, but will we ever get as much of it, and will we put it on the distant fields as we did with the old light wagon and the daily gathering?

W. B. MILLER.

When trouble assails you, brace up and assail into it.

Foolish farming is a thing of the past. Don't live in the past.

He who buys things out of season may pay for them out of reason.

Some people want pie and partridges who only have corn-dodger energy.

Many "back-to-the-land" dreamers have visions of apple-blossom time only.

He who would scatter sunshine where there are clouds must store away some of it when there is sunshine.

THIRTEEN YEARS

Unlucky Number for Dakota Woman

The question whether the number "13" is really more unlucky than any other number has never been entirely settled.

A So. Dak. woman, after thirteen years of misery from drinking coffee, found a way to break the "unlucky spell." Tea is just as injurious as coffee because it contains *caffeine*, the drug in coffee. She writes:

"For thirteen years I have been a nervous wreck from drinking coffee. My liver, stomach, heart—in fact, my whole system being actually poisoned by it.

"Last year I was confined to my bed for six months. Finally it dawned on me that coffee caused the trouble. Then I began using Postum instead of coffee, but with little faith, as my mind was in such a condition that I hardly knew what to do next.

"Extreme nervousness and failing eyesight caused me to lose all courage. In about two weeks after I quit coffee and began to use Postum, I was able to read and my head felt clear. I am improving all the time and I will be a strong, well woman yet.

"I have fooled more than one person with a delicious cup of Postum. Mrs. S. wanted to know where I bought my fine coffee. I told her my grocer had it and when she found out it was Postum she has used it ever since, and her nerves are building up fine.

"My brain is strong, my nerves steady, my appetite good, and best of all, I enjoy such sound, pleasant sleep." Name given by Postum Co., Battle Creek, Mich. Get the little book in pkg., "The Road to Wellville." "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.

Splendid Prospects

of
**Bumper
Grain
Crops**
in

WESTERN CANADA

Latest reports from the fields of Manitoba, Saskatchewan and Alberta are to the effect that Wheat, Oats, Barley and Flax give promise of an abundant yield. Rains have been sufficient and all grains have advanced rapidly. There are now 16 million acres under crop. Railroads are built and building in all settled portions. The opportune time for getting some of this generous producing land is now. Excursions on all lines of Canadian Railways to inspect the lands. Apply for Settler's Certificate to the undersigned Canadian Government Agents:

H. M. Williams, J. S. Crawford,
413 Gardner Bldg., 30 Syracuse Savings Bank Bldg.,
Toledo, Ohio Syracuse, N. Y.

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Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Swellings from any Bruise or Strain; Cures Spavin Lameness, Allays Pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle, delivered. Book 1 E free. ABSORBINE, JR., liniment for mankind. For Synovitis, Strains, Gouty or Rheumatic Deposits, Swollen, Painful Varicose Veins, Allays Pain. Will tell you more if you write. \$1 and \$2 per bottle at dealers or delivered. Manufactured only by W. F. YOUNG, P. D. F. 23 Temple St., Springfield, Mass.

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SCORES of men and women are making a comfortable living all the year round and thousands of others are substantially increasing their regular incomes by devoting their spare time to our interests. There is a fine opening right now on our Subscription Staff for a few more ambitious men and women. Why not join the ranks of those who are numbered among the successful men and women of their localities? A postal card will bring all particulars. Send it to

Circulation Dept.

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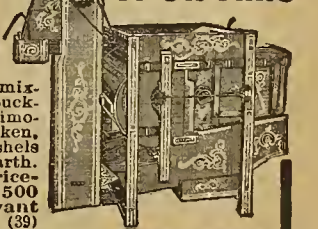
It grades, cleans and separates wheat, oats, corn, barley, flax, clover, timothy, etc. Takes

cockle, wild oats, tame oats, smut, etc., from seed wheat; any mixture from flax. Sorts corn for drop planter. Rids clover of buckhorn. Takes out all dust, dirt, chaff and noxious weeds from timothy. Removes foul weed seed and all the damaged, shrunken, cracked or feeble kernels from any grain. Handles up to 80 bushels per hour. Gas power or hand power. Easiest running mill on earth.

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THE MANSON CAMPBELL COMPANY, Detroit, Kansas City, Minneapolis

Cash or On Time



Farm Notes

Cato, a Roman Farmer

THE latter-day farmer, especially if he prides himself on being up-to-date in his farming methods, is very apt to think that agriculture, in the better sense of the word, is a new thing, and that the farming of ancient times was haphazard and crude. Perhaps this very general impression is owing to what took place in the early days of our own country. Men sowed and reaped, repaying nothing to the soil, till it ceased to yield good crops. Then they worked their way westward to repeat the work.

But it will not do to judge ancient agriculture by what was done in a new country whose fertility, though soon enough depleted, gave rise to false hopes and led planters to believe it was inexhaustible. As a matter of fact, agriculture, from the dawn of history, has, on the whole, kept pace pretty evenly with civilization, dropping to a low ebb when civilization would, and again advancing in days of greater enlightenment. How much agricultural knowledge, how many important truths, have thus been lost we cannot tell; but of this we are sure, that in certain periods of the world's history agriculture flourished and occupied the attention of learned men to an extent little dreamed of by many farmers of to-day.

Some two hundred years before the Christian era, when Grecian civilization had reached a standard which, in many respects, has never since been equaled, and when Rome had borrowed this civilization and had become the foremost power in the world, there was born in Tusculum a boy who was later to become a world-famous personage. His name was Marcus Porcius Cato, since known to every schoolboy as Cato the Censor, and more, perhaps, than any other figure in Roman history as the example of those stern virtues for which Rome, in her better days, was famous. On his father's farm in the Sabine hills this boy grew up, learned agriculture and, on becoming a man, set up in farming for himself, just as many farmers' sons do to-day. As to his methods, he not only believed in the best agriculture, but in persistently applied labor and economy—two things that are still pretty important ones in farming. We are told by his biographer, Plutarch, that he wore rough clothes, worked in the field with his men and ate the same food that they did. Throughout his long life he continued to live simply and to do more or less work with his own hands. "When the other citizens were frightened at labor and enervated by pleasure, he was unconquered by either," says Plutarch, "not only while young and ambitious, but when old and gray-haired, after his consulship and triumph, like a brave wrestler who, after he has come off conqueror, continues his exercises to the last."

A Farmer, to Do Best, Must Keep Books

This grand old Roman farmer wrote a treatise on agriculture, so clear, so concise and showing so thorough a knowledge of his subject that it is valuable not only as showing to how high a standard the agriculture of that day had reached, but also as showing how much information can be contained in a few words. As to its being an antiquated book—and a book written before the days of Christ might quite properly be considered a trifle old-fashioned,—you must not take too much for granted; for as good agriculture, in whatever age, consists in turning the laws of nature to our own account, any agriculture that is based on a knowledge of these laws can never be very much out of date. Cato and other good farmers of his time knew the value of deep and thorough tillage, of the conservation of moisture and of the use of legumes; they knew the values of different feeds and the effect they had upon the manure as well as upon the stock. They knew—a point upon which many present-day farmers are strangely weak—the value of bookkeeping, and Cato tells us plainly that if the farmer is to succeed and know what he is doing he must keep books. He says, "Keep an account of the cash, of what produce is used by the family, of what is sold, of the price and of what is left over." His book proves how carefully he kept his own accounts, for he tells us such things, for instance, as how much grain and hay and litter are required to carry an ox through the feeding season—a thing that a great many pretty good modern farmers could not tell with any great accuracy. Many of the things he tells us have a curiously modern ring, making it hard to realize they were written so long ago. Thus, in a book of Professor Burkett's that I have just been reading, he lays great stress—as he surely should—on the importance of thorough tillage. Cato, speaking to us across the space of two thousand years, says, in discussing the same subject, "What is good agriculture? First, to plow thoroughly; second, to cultivate; third, to manure." Many of the operations for which he lays down rules are done in exactly the same way now, and a

man could, for instance, plant his asparagus-bed by Cato's rule as successfully as by Peter Henderson's. Indeed, there is no essential difference, though Henderson says to set the roots nine inches apart, while Cato says six, and Henderson says to make the rows three feet apart, while Cato merely says to put them far enough apart to allow of good cultivation between them.

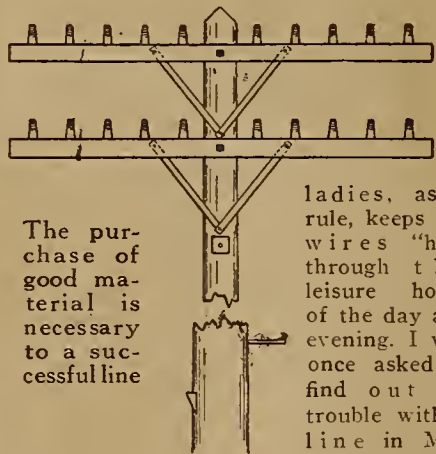
Sometimes I wish that I might go back for a while, like Mark Twain's Connecticut yankee in King Arthur's court, and talk with some of these old-time farmers. But perhaps it would tax the imagination less to fancy Cato's spirit revived and visiting some up-to-date American farm. You may be sure the old gentleman would find himself very much at home, despite the changes that have taken place in the two thousand odd years since his own farming days. He would examine your self-binding harvester with interest and admiration, but would probably explain to you that in his day the cheapness of labor made such things less necessary than now. He would praise your alfalfa-field and remark that he himself always used it in a rotation of crops. Then he might inquire of the exact profit on your dairy or your beef cattle and ask to see your books. Would you have them ready to show him?

DAVID BUFFUM.

The Rural Telephone-Line

TIME was, and not so very long ago either, when the chief drawback to life in the country was its isolation and lack of contact with the rest of the world, when the weekly paper with its week-old news and patent insides, and an occasional magazine were the only means of keeping in touch with current events and when a trip to "town" or perhaps to church was the only break in life's monotony. How different are conditions to-day! Rural delivery, good roads, automobiles and, greatest blessing of all, the telephone have put the country home in closest touch with the world, and the farmer gets the news even sooner than the city dweller, for he is generally awake earlier in the day. I have called the telephone the greatest blessing of all, and it is. Consider it first as a business proposition. It brings the market quotations to you in an instant, so that you can sell or hold your produce as you deem best, and the smooth "buyer" can no longer get your grain or cattle below the market price. Every merchant, implement-dealer and mechanic in the town is at your immediate call, and a breakdown in the harvest-field means a delay of only hours, instead of days. In case of sickness or accident, the doctor can be on hand in less than half the time formerly required, and I could cite a hundred cases in my own experience where lives have been saved solely because there was a telephone in the house. In case of fire or robbery, the country dweller can summon immediate assistance, and if you want to hear a real enthusiast talk, just ask the country woman who has a telephone how much it has done to remove her fear of tramps when the "men folks" are away.

Then look at the social side. In the old days a "visit" meant an entire suspension of work, a long drive "there and back again," tired horses, cross children (and husbands?), and the labor involved made a real task out of what should have been a pleasure. When you have a telephone, all your neighbors on the line are in constant touch with you, and "visiting" among the



The purchase of good material is necessary to a successful line

ladies, as a rule, keeps the wires "hot" through the leisure hours of the day and evening. I was once asked to find out the trouble with a line in Missouri and told that "the bells did not ring well." On investigating, I found a grounded line over forty miles long with ninety-three instruments on it; the instruments were of half a dozen different makes, and it was a sheer impossibility to ring from one end of the line to the other; in fact, it required the assistance of half a dozen users to send a call through. When I laughingly suggested that such service was pretty nearly as bad as none at all, one old fellow (and he lived away out near the end, too) drawled, "Wa'al, she is pretty slow, but, at that, she beats a horse." And so "she" did.

How to Organize a Company

The first step in forming a rural company is to get as many as possible of the subscribers together and determine the territory to be served, the probable number of subscribers, how construction and maintenance costs are to be provided for and to effect a temporary organization. It is usual to elect a temporary president and secretary and instruct them to report fully at a later meeting.

At this second meeting they should be able to present a list of subscribers, an estimate of the number of poles and quantities of wire and other material that will be required and of the cost of line construction. They will also have secured prices from several manufacturers on instruments, lightning-arresters, etc., and consulted with the managers of neighboring telephone companies as to charges for connection to their exchanges. This information should be reduced to writing and all comparative costs tabulated. They will also recommend a form of incorporation and the method to be adopted for raising the necessary funds. Such a report lies before me as I write and is so thorough that it warrants reproduction. It is as follows:

Gentlemen: Your committee on organization beg to report

(1) We have secured 22 subscribers for the telephone service, as follows:

(List of names.)

(2) To serve these subscribers there will be required a line 13 miles long, requiring approximately 400 poles, as follows:

350 20-foot poles.
40 25-foot poles.
10 30-foot poles.
Material required will be:
420 cross-arms (4-pin).
100 brackets.
2,000 standard pins.
500 cross-arm braces (22-inch).
500 lag screws (3-inch).
500 lag screws (4-inch).
1,000 porcelain knobs.
1,000 pony glass insulators.
55 anchor rods (5-foot).
1,000 feet guy strand.
25 ground rods.
25 lightning-arresters.
2,000 feet inside wire (duplex).
500 feet ground wire.
400 machine bolts (7x5/8).
5 gross 2-inch No. 12 wood screws.
3 gross 2-inch No. 8 wood screws.
1 keg 40-penny nails.
1 keg 60-penny nails.
30 miles No. 12 B. B. galvanized iron wire.

Tools required will be:

6 long-handled shovels.
3 short-handled shovels.
2 cant-hooks.
6 pike-poles (14-foot).
1 hand-saw.
1 framing-chisel (2-inch).
2 monkey-wrenches (7-inch).
2 hand-axes (5-inch).
2 screw-drivers (10-inch).
2 nailing-hammers.
2 pair linemen's pliers.
1 pair connectors.
1 set slack blocks and rope.
Instruments required will be:
23 bridging telephones with 1,000-ohm ringers.

(3) We have secured the following prices: Poles (prices from three different shippers).

Material as listed (prices from four supply-houses).

Tools (prices from two local dealers).
Instruments (prices from seven manufacturers).

(4) We have secured labor estimates as follows:

(Three estimates for unloading, hauling, framing and setting poles, digging holes, guying, etc.)

(5) Taking the lowest figures in each case, the proposed line will cost complete and ready for operation, with instruments installed and connection made to the exchange at ———, \$1,225, or an average of a little less than \$100 per station. This for a full metallic circuit carried on cross-arms which will accommodate an additional circuit when needed and the best of material throughout, including standard cedar poles.

This cost can be reduced over one half by using such poles as can be obtained locally, substituting brackets for cross-arms and using a single grounded steel wire, but your committee most emphatically recommend the best possible construction and call your attention to the fact that this line is to be built to give constant and reliable service, which simply cannot be done without proper material and workmanship.

(6) We find that the statutes of this State provide a cheap and ready method of incorporation, the total cost being about \$25, and this expenditure is recommended.

(7) The entire cost of maintenance, including battery renewals, should not exceed \$4 per telephone per year. If desired, we can have a contract made to this effect covering a period of ten years.

(8) Connection can be had with the telephone exchange at ——— for a flat rate of twenty-five cents per station per month, they to continue our line from the city limits to their exchange free of charge, or, if desired, for a switching charge of two cents per connection. If the latter method is preferred, they will allow us a similar charge on business going over our lines.

(9) Rates may be either fixed or an annual assessment made to cover the operating expenses and other charges. We recommend a fixed charge of \$7 per year and an assessment of \$3 per year in addition—this last to be used to provide a fund for renewals, etc., and to be held for that purpose only. A contract at \$4 per year for main-

tenance leaves \$3 per subscriber per year for office expenses, etc., and a small allowance to the secretary or manager to be appointed. This will make a total cost of \$13 per year to each subscriber as follows:

Our rental \$7.00
Exchange rental 3.00
Sinking fund 3.00

\$13.00

Or, if the switching method be preferred, the annual cost will be \$10, plus the switching charges.

(10) We recommend that each subscriber be assessed \$100, and that the same be payable one half down and the balance on the completion of the line, and that any surplus remaining be credited on rental account, and that thereafter rentals be payable quarterly in advance. Respectfully submitted.

This model report places the entire matter before the subscribers, and when it is finally adopted, with such modifications as may be thought desirable, the road is cleared for definite action. The officers are chosen and active construction is in order.

H. J. MINHINNICK.

EDITOR'S NOTE—Mr. Minhinnick will later take up other phases of rural telephone problems. His second article will appear in an early issue.

A Miter-Box

TAKE three one-inch boards eighteen inches long, one of them six inches wide, the other two each four inches wide; nail or screw the two narrow boards to the edge of the wide one. Three inches from the center of each side board make a mark at the inner edge, lay a square across diagonally, and draw cross-lines. With try-square draw two lines down each side of the box from top marks, and with a saw cut down upon these lines until the bottom board is reached. The box may be made any desired size, but the two saw-kerfs on each side must always be just as far apart inside the box as the box is wide inside; the kerfs must be sawed carefully, or the box will not make a perfect-fitting joint. J. G. ALLSHOUSE.

Mending the Basket

OUR experience with the ordinary wooden basket shows that one of the first places at which they wear out is the wooden rim midway between the two handles, due to the inward stress of the handles when the basket is being carried. When this rim shows signs of breaking at one or both of these two points and the remainder of the basket is good, we reinforce the weak parts by means of a wooden barrel hoop from an old keg or barrel. These hoops have been seasoned to about the right curvature, and when cut about a foot in length, firmly nailed to the outside of the rim and neatly trimmed, serve efficiently in the capacity mentioned.

P. C. GROSE.

Fogy

AMZI, so he avers, knows a terrible old foggy who has a notion that Uncle Sam might do better with \$300,000,000 than dig that big ditch down in Panama.

"If you will believe it," relates Amzi, "that awful old duffer imagines a wagon-road from New York to San Francisco would be a better investment—such a road as the Romans used to build, straight as a string, level as a floor and solid as the everlasting hills. A road like that, he pretends to believe, would be a pattern for everybody along the way to build up to—it would become the backbone of such a system of highways as never was."

It makes Amzi laugh to think of that old fellow.

"A foggy if ever there was one!" he chuckles. "His imagination is horribly parochial, instead of being imperial, as the styles are. Dear, dear! Why, he wasn't a bit worried when Congress cut out the battleships and voted the money to rivers and harbors. 'Pork,' says he, 'is a better bargain than junk, any day!'" RAMSEY BENSON.

Better-Farming Hints

The man who does nothing long enough is sure to come to naught.

People who ride in automobiles fail to see the violets by the roadside.

Every man can see the poetry in the rain when it breaks up a long drought.

Some men don't have to borrow trouble; they just make it in the neighborhood.

The truth, from the mouths of some folks, is stranger than fiction, all right enough.

Young man, set your goal so high that it would make you blush to tell your friends about it.

The way to get a reputation for a thing is to be and do that thing good and hard all the time.

We can all have all the diamonds we want when we are able to appreciate them in the dewdrops.

The Headwork Shop

A Page of Boiled-Down Farm Practice by the Editors, and of Useful and Ingenious Kinks and Knacks from Our Inventive Subscribers

It Beats Them All

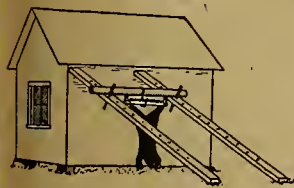
THAT which we have found to be about the handiest thing on the place is a chicken-coop so constructed as to have two doors, one (A) at the side of the coop, opening on hinges, the other (B) at the end of the coop, made to slip open and shut along suitable grooves. If desired, one door can be made to let down, or both doors made to slip

in and out. It is necessary, however, that one of the doors be made to slip in and out. A coop of this pattern can be used in a variety of ways, in the care of small chicks, or in setting of hens, where the common patterns of coops cannot be used. It is especially useful placed at openings (C) of feed-pens (D), as the sliding door can be adjusted as desired for a large or small opening without disturbing chicks or moving aside either coop or pen. It is also quite useful as a place in which to set hen, as she becomes accustomed to her surroundings and no further changes need be made at hatching-time. A coop (E) and pen (D) of the dimensions given below are sufficiently large for a hen and twelve chickens to use until the chicks are ready for market.

The dimensions of the coop are: Length, 4½ feet; width, 2½ feet; front height, 2¾ feet; back height, 2 feet. The dimensions of the pen are: Height, 2 feet; width, 4 feet; length, 6 feet. The sides and top of the pen are covered with poultry-netting, as illustrated.

JOSEPH S. WADE.

Hang Up the Hog



THIS plan is very handy for hanging a heavy hog or beef. By sliding the pole up the skids and sticking in the pins, one man can easily hang a hog weighing four hundred pounds. The device can be made in one hour and, if cared for, lasts for years. The iron hook should have a square turn on the lower end to hold the gambrel-stick firmly. A rope or chain will also answer the purpose.

SMITH PERSHING.

We recommend the homers and Carneau pigeons for squabs. Send to the United States Department of Agriculture, Washington, D. C., for Bulletin No. 177, and study it carefully. Begin on a small scale, and learn the business practically while studying it.

Nobody is safe in describing lands in Virginia in a general way. They differ very greatly. Write to the Commissioner of Agriculture, Richmond, Virginia, for information, and look the land over before you buy. A good plan is to rent land in the vicinity for a year or two while looking it over.

When sows kill their pigs, it is generally because of improper food or insufficient exercise. Feed more bulky food and less corn before farrowing. Alfalfa or clover hay, wheat-bran, middlings, roots and silage are all good things to feed. Give plenty of fresh water and a mixture of salt, charcoal and ashes in a place where they can reach it. Send for Circular No. 10 on the care of brood-sows, to the Experiment Station, Wooster, Ohio.

Silage is rich in carbonaceous elements and fat. Dairy cows should have plenty of protein to balance the silage. Good balancing feeds are oats, wheat, bran, wheat-middlings, buckwheat or buckwheat-middlings, cottonseed or linseed meal, and brewers' grains. By studying some good book on feeds and feeding, one can figure out his own balanced ration for his own feeds, or if you will tell us what feeds are available and prices, we will suggest the ration for you.

The cost of producing pork varies under different conditions. In Nebraska, with good hogs under good conditions, increase from fifty pounds up on hogs has been produced for \$3.30 a hundred, with a ration composed of corn, 47 cents; wheat, 70 cents; barley, 40 cents; oil-meal, 1½ cents; tankage, 2 cents; alfalfa-meal, ¾ cent; green alfalfa, ½ cent; the first three items reckoned as bushels, the other four as pounds. In Alabama, where crops were hogged off and pasturage was well utilized, pork was produced cheaper than this. Under most conditions abundant pasturage of alfalfa, clover, rape, peas and other forage crops, with a grain feed of barley, wheat-middlings, and oil-meal with corn, ought to enable one to produce profitable pork, if the question is studied carefully.

Back Him Up

HERE is a scheme that makes the work of loading hogs easy. When one will not go up into the chute but turns back, just slip a bushel basket over his head. He will start backing to get the basket off his head. Follow him up, and you can steer him up the chute and into the wagon like a wheelbarrow.

CLYDE CLARKHUFF.

An Old Idea in New Form

HERE is a good way to water hogs or any stock where they are kept away from the source of the water. Take a good water-tight barrel with both heads in it, a syrup-barrel is just the thing. Take a one-inch pipe about four feet long with a stop-cock (S) near one end and screw it tightly into the barrel. Put an elbow on the other end and screw a pipe about ten inches long into this. The lower end (K) is closed. About three inches from K drill a one-half-inch hole (H). Let this pipe go down in the trough, which should be rigid and should be able to hold water above the hole in the pipe. Cut the water off at (S) and fill the barrel at (C). It should be filled perfectly full and the cork put in air-tight, leaving no air in the barrel. Now open up S, and the water will run out from hole H into the trough, until the water stands even with the top of the hole. The barrel being on the outside of the pen, the animals can't get at it. It is very desirable in watering hogs in a pasture, but can be used for many other purposes.

ED. STOKER.

Convenient Barn-Door

THIS is a rolling door, which works against a bank of earth or stone wall, as the case may be. B is a bank or wall. C is a hinged section in the door to allow it to open full width. D is a hook to hold the hinged section up when one wishes to open the door. E is a staple. F is an ordinary button for holding the swing section closed. G is a stay roll for holding the buttons of the door in place. This is the best outfit I have ever used in barn construction.

A. F. ROBERTS.

A Funnel From Paper

BEING in need of a large funnel when I was changing some vinegar from cask to cask, I took an old paper bag, cut the bottom off and put the top in the bung-hole of the barrel. I then proceeded to pour the vinegar through this. I found that one bag would last for about one hundred gallons, when it became too limp for further use. Everyone has paper bags. Sometimes the funnel cannot be found, or is not large enough for the work. These bags give the full capacity of the bung, and a four-pound bag will hold about six quarts and empty a solid stream of liquid very rapidly.

FRED. W. MEADE.

Slanting Grain-Bin

A CONVENIENT bin, made to accommodate one or two loads of grain, can be built on one side of the alleyway within the barn. Being slant, the grain settles at the bottom, making it easily got out of the bin. By erecting it a little above the ground, it is made rat and mouse proof. The lid keeps out the chickens. A door can be placed at the upper end, outside the barn, where the bin can be loaded from the wagon.

FRED WEISS.

Clock That Feeds Hens

THIS clock is placed in a small box that holds it tight in place. Then nail the box in the top of the chicken-coop. Put a screw-eye in the scratching-shed roof, and tie the string that goes through the can into the funnel to the screw-eye to hold the funnel in place. The can sets right over the funnel, bottom side up, with a string that goes through the pulley and through the coop to the clock and around the alarm-key. Take the bell off the clock. There is a separate string that goes through the staple in the bottom of the box to the shut-off on the clock. When the alarm goes off, the key

turns around and winds up the string, which raises the can and at the same time shuts off the alarm when the can is empty.

To refill the can, wind up the alarm-key. That lets the can down in place. Cut away part of the top of the can so it can be refilled.

CHAS. R. ANDREWS.

Churning by Wind

I RECENTLY came across an ingenious device for doing away with some of the labor and drudgery of the housewife, and incidentally some of the worries of the small boy.

A lever is attached to the plunger-rod on the windmill, as shown in the sketch. A two-by-four will serve the purpose as a lever, and another, set in the ground a few inches and fastened solid at the top, as a crosspiece. This holds the lever in place when it is bolted securely in the center. Two other bolts, one at each end of the lever, connect it with the plunger-rod and the churn.

Turn the windmill loose, and enjoy the satisfaction of seeing it perform the work. The same device can be attached to a grindstone or any small machine, and if the circulation of air is sufficient to keep the windmill going, it will work successfully.

C. K. TURNER.

Self-Closing Door

THIS sliding door is best on a granary or on any building that is to be kept closed. The illustration is self-explanatory. The heavy weight that is fastened to the door and runs through a pulley is an aid in opening the door. It closes by itself. If the door is to be left open, just drive a nail on the side, and twist the rope around it. The weight will hold it there.

WM. GANGER.

Trench-Cleaner

TO A short piece of half-round post, securely tack on the curved side, with shingle-nails, a sheet of heavy galvanized iron about fifteen inches long. Bore a hole in the block at an angle of about forty-five degrees, deep enough to receive a long handle. This works very satisfactorily.

CHARLIE KODER.

A Poultry Gate

I FIND it very convenient to arrange a gate that hens can themselves open, when they are going one way, but through which they cannot return. A small gate is set inside of the large one. The slats may be made either of heavy wire or wooden rods fastened between two strips at the top and hinged on a piece of wire. When the hens are on the outside of the gate, they can enter by pushing their heads through the slats of the small gate. It rises and allows them to pass under the gate, then falls back. The hens learn very quickly to push the gate that they may get back to the yard.

HERBERT MOONEY.

Burglar-Proof

HERE are two methods for holding the door-key secure. The illustrations explain all: Fig. 1 is a heavy piece of wire bent like a hair-pin. Fig. 2 is also a heavy piece of wire bent in the shape shown. Place the wire over the shank of the knob and slip it through the hole or holes in the key after locking the door. You can then go to sleep knowing no the door. The key cannot be pushed out and so other keys cannot be inserted.

This device is of special value where the doors are loose. The wind in shaking the doors may easily jar the key out if no such thing is used. Again, when the door is open, this scheme if used properly will not allow the key to drop out on the floor, there, perhaps, to be lost.

J. E. ELLIOTT.

It Drills Easily

HERE is a plan of a post drill I made from an old mower: I took the bevel-gear wheel (A) and the shaft it runs on in the mower (B). I made a boxing out of a piece of hoop iron bent over the shaft and bolted on either side of B to the post C, which is a four-by-six four feet long.

Then take the bevel pinion (D) and the pitman shaft. Have the shaft (E) cut from six to eight inches long, with a half-inch hole drilled in the end one inch deep. Then have a quarter or three-eighths inch hole drilled in sidewise to come in the larger hole about middle ways. Thread the smaller hole, and fit a set-screw (F) in it, and you have a chuck that will hold a round or flat-side drill.

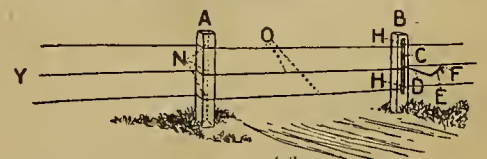
The shaft E should be secured by strap iron in the same manner as B. Now put a crank (H) onto A, and you have a drill.

My drill cost me only fifteen cents for blacksmith work and a little odd time. As the bevel pinion is put on by left-hand threads, it must be riveted on or turned backward.

BERT MASON.

Handy Wire Gate

THIS is the best gate for wire fences that I have ever used or seen. It is very cheap, can be opened quickly and is made for any width of gate. A and B are two posts, between which the gate is to be made. Staple as many strands of wire on the back side of post A, at points N, as you have strands in the fence. Then wrap the wire thus stapled half-way around post A. C is a roller about three inches in diameter,



to which are stapled wires O. H H are two iron pins driven into post B and extending out about four inches. D is an iron rod about eighteen inches long, which serves as a lever, with one end inserted in roller C and having a piece of chain E fastened to the other end. F is a hook on the wire. By drawing lever D and hooking F in a link of chain E, the wire in the gate can be stretched as tight as desired. To open gate, unhook chain E and carry roller C to point Y, where it will be out of the way.

SAMUEL H. APPELMAN.

To dehorn calves, clip away the hair and rub the button with caustic potash until the skin is a little inflamed and sensitive. Protect your hand from the potash. Dehorn before the calf is three weeks old.

We don't think that one can successfully graft or bud peach scions on cherry stock, either the wild or the cultivated cherry. We shall be glad to hear from any one of our readers who has ideas to the contrary.

To prevent hens from eating their eggs, arrange a false bottom in the nest, through which the egg will roll slowly out of sight when laid. There are several ways of doing this. By making the nests dark, the formation of this habit will be prevented.

Much garden-soil seems to need lime, and probably a complete fertilizer. Sour soils need lime. To test for sourness, cut deeply into the moist soil and slip into the cut a piece of blue litmus paper, pressing the earth against it. If the paper turns red, the soil is sour. The redder it is, the sourer the soil.

Try a small patch of soy-beans next season so as to learn whether or not they will do well in your locality. Canadian field-peas would almost certainly succeed, and sown early with oats would make an excellent hay. Send for Farmers' Bulletin No. 372, to the Department of Agriculture, at Washington, D. C., for full information regarding soy-bean culture.

To exterminate lice, mix three parts of gasolene and one part of ninety per cent. crude carbolic acid with enough plaster of paris to take up the moisture. You will then have a powder. Rub it into every portion of the hair of the horse after the winter coat is shed. Give another application eight or ten days afterward. Spray the stall with kerosene or some other liquid lice-killer, or your work will all be vain.

Ants living in colonies may be destroyed by dropping carbon bisulphid in holes, punched in the ant-hill and immediately covering it up with earth. Punch two or three holes, and put in a couple of table-spoonfuls in each hole. The gas arising will explode like gasolene if lighted, hence do not use except out-of-doors. Indoors, collect the ants on sponges wet with sweetened water. Then kill the ants with hot water.

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Garden and Orchard

The Boy on the Farm

By Berton Braley

THERE'S somethin' to do from the time yuh get up
Till the minute yuh tumble in bed,
From chasin' the chickens along with the pup
To drivin' the cows in the shed.
It's fun to go playin' around in the hay,
Or watchin' the honey-bees swarm;
There's somethin' to do every hour of the day;
It's great for a boy on the farm.

I love to be 'round when they're thrashin' the grain,
An' it's fun to ride home on the straw,
Or to set in the shed when it happens to rain
While the farm-hands just argue an' jaw;
Or 'long in the spring, when they first start to plow,
That furrowed-up dirt has a charm,
An' to walk in it, barefoot, is bully; some-how,
It's great for a boy on a farm!

An' then there's the horses a feller can ride
(Sometimes, when they're gentle an' kind),
An', gee, there's the tool-house with wonders inside;
'Most every old tool that's designed;
An' then there's the pigs an' the calves that they feed
With milk that is frothy an' warm;
I tell yuh I got all the fun that I need.
It's great for a boy on the farm!

The Value of Vegetables

VEGETABLES, as a class, do not contain a great amount of muscle-forming elements. The highest percentage is contained in the pea, bean and lentil group. Besides these, we have the truffle (nine per cent.), Brussels sprouts (five per cent.), spinach (three per cent.), French beans, mushrooms and cauliflower (two and one-half per cent.), and asparagus and cabbage (about two per cent.) All the vegetables have less than one per cent. fat. On the other hand, beet-root contains nearly ten per cent. of sugar, turnips about four per cent.; while all the rest contain one or two per cent.

All vegetables contain various valuable organic salts, without which life would be impossible.

One of the most valuable properties of these foods is the fact that they contain a very large quantity of heat and energy-giving material. The meats contain little of this, and most of the other vegetables are also lacking in these carbohydrates. On the other hand, peas contain from fifty to sixty per cent. of these energy-giving substances, lentils from fifty-six to sixty-two per cent., haricot-beans from fifty-two to sixty per cent. and French haricots from fifty-two to sixty-three per cent.

The cabbage family—comprising the cabbage, cauliflower, broccoli, spinach and other greens—is especially good for persons suffering from skin diseases of all kinds; also for those having anemia, scrofula, gout and rheumatism. All such greens should be eaten with caution, and thoroughly masticated before they are swallowed. If cooked, they should be placed in fast-boiling water, as this tends to shrivel up the outer coating of the vegetable and to keep the juices in the tender inside portions, instead of allowing them to boil out into the water so completely.

Many persons find vegetables hard to digest. If so, vegetables should be eaten sparingly.

Vegetable marrows and squashes are easily digested and contain a large percentage of water. Onions are noted for the large percentage of valuable salts they contain. They are especially good for kidney troubles.

Turnips and parsnips are apt to create gas in the intestinal tube unless eaten in reasonable quantities and thoroughly masticated. Carrots should be eaten when still young, for if old and fully grown, they are liable to be indigestible. Beet-roots, as said before, are noted for the large amount of sugar they contain. Artichokes are considered rather a fattening food, but, on the other hand, are considered beneficial for the removal of dropsical conditions.

The potato contains a great deal of starch, and its good qualities are so well known that they need hardly be emphasized. Potatoes are most valuable from the food point of view, when cooked in their skins, for they do not in that case lose many of their organic salts.

Mushrooms contain a great proportion of muscle-forming elements, but are indigestible unless eaten in moderation and well masticated. They contain also a good deal of starch, sugar and organic salts. One peculiar thing about mushrooms is that they are in a sense carnivorous, for, unlike the rest of the vegetable world, they cannot derive their nourishment directly from mineral elements and the air and water with which they are in contact. They, on the contrary, eat living animals and vegetable things of every character, or else decomposing organic material.

PERCY PRIOR.

Rejuvenating an Old Tree

IN 1910 I decided to see what I could do in the way of again making a seventy-four-year-old Russet apple-tree productive. It bloomed, but the apples and foliage were so infested with insects and diseases that for twelve years before 1910 it had not produced a bushel of No. 1 apples. In the spring of 1910 I first pruned it thoroughly, gave it fifty bushels of corn manure directly from the stable, one hundred pounds of muriate of potash and two hundred pounds of lime. I sprayed it just once, ten days after bloom had fallen, but



The old tree yielded well

we did the job well, putting on fifty-five gallons of material. In fact, we thoroughly sprayed every part of tree from trunk to end of branches with arsenate of lead and Bordeaux mixture. We fully intended to spray it again in two weeks, but did not. In the fall we picked twenty-four bushels of extra fine apples from it. In 1911 I again pruned it, gave it seventy-five bushels of sheep-manure directly from the barn, sprayed it with arsenate of lead and lime-sulphur, while the buds were yet dormant, using two and one-half pounds of arsenate of lead to about two gallons of lime-sulphur, adding water to make fifty-five gallons. I scraped off all the loose, rough bark of the trunk and the large limbs, whitewashed the trunk with self-boiled lime-sulphur, sprayed again about a week or ten days after all bloom had fallen, with two and one-half pounds of arsenate of lead. I used the lime-sulphur too, but much weaker than before, only using three quarts to make fifty-five gallons of spraying material, as I found that strong enough for the tender foliage in July. We put under this tree all the potato tops from about one and one-half acres of early potatoes. Likewise, we placed there two wagon-loads of weeds, briars, etc., mowed along the roadside. Then during the extreme drought in August we hauled twenty-four barrels of water and soaked the ground for fear the drought would ruin the tree or fruit. Soon after that we had plenty of rain. I was obliged to use twenty-one props, some thirty-five feet long, to aid the tree in raising its load of fifty-eight bushels and eight pounds of No. 1 apples.

The picture speaks for itself. Does it pay to spray?
W. F. UNTERZUBER.

GARDENING

BY T. GREINER

Rolling Onions Down

AN IDAHO reader asks when is the best time to "roll" onions down, and what is the best way to do it. In some soils, and under some weather conditions, onions sometimes take a notion to make rather large or thick necks, while in a good bulb, one that has long-keeping qualities, the neck is and should be rather small. In such an onion I like to see thrifty growth, and to have the tops stand up strong and straight until full size of bulb is reached. Then the tops will begin to turn yellow, fall over and finally wither away. The onion-plant that is bound to make a big neck and to turn out to be what is known as a scallion will do that, no matter how much you roll it down. Some growers recommend rolling a barrel (empty) over the onion-patch when the bulbs are approaching the stage of ripeness. I do not think this is necessary, and do not practise it. But I take pains to pull the onions promptly when getting ripe, and if possible in dry weather, leaving them out in the sun to dry down, and get them spread thinly in a dry and airy place when there is the least prospect of rain.

Cucumber Diseases

A Pennsylvania lady reader inquires about a remedy for some affection of her cucumber-vines. The leaves of cucumbers, melons, etc., are subject to the attacks of what is known as powdery mildew, or cucumber mildew, and probably other fungous diseases. Our knowledge of these diseases seems to be as yet somewhat limited. It is supposed, however, and perhaps with good reason, that persistent spraying with Bordeaux mixture will in some measure prevent the attacks. I would use about one pound of copper sulphate, one pound or a little more of lime and fifteen gallons of water, and try to reach the under surface as well as the upper surface of the leaf. Spraying with this mixture from time to time is a good thing anyway, and in times of bug danger, I would also use arsenate of lead, one pound to the quantity named, with it. It is possible, however, that the vines may be stricken with the "wilt" disease, which affects the whole plant, or at least a whole branch. In that case, some of the lower leaves may turn brown and wither away, while those further out on the branch have a more or less wilted appearance. The plant finally dies, and I am unable to suggest a remedy or preventive.

Grubs in the Strawberry-Patch

E. T., a Kansas reader, complains of white grubs in the strawberry-patch. The strawberries do well otherwise. "What could be done to keep these grubs out?" White grubs are the larvæ of the May-beetle and often quite destructive to garden crops, at least in new soil. They do not bother us much, no more than cutworms, in our old gardens where the soil is kept constantly dug over. The only safe way to plant a strawberry-patch is to get the grubs cleaned out before the plants are set out. Work the land, especially with the plow, and do not fail to plow deeply in late fall, or just before the freeze-up in winter, so as to disturb the grubs and expose them to destruction by birds and other enemies, as well as by cold weather. Then set your strawberry-plants in early spring, take good care of them so as to make good growth and plenty of runners; take a crop off the following season, and turn the patch over with the plow, planting a late crop, such as turnips, kale, rape, wheat, etc. In the meantime prepare another piece of ground for strawberries, setting the plants the same year that the other patch is in bearing, and continue in this manner. That will give to the grubs but little chance to injure your patch.

The happiness that is somewhere behind us will do to remember; the happiness that is somewhere in front of us will do to hope for; but the happiness that is within us right now will do to work with.

Lime Effects

Much of my success in growing big onions, many specimens weighing a pound and a half piece, I attribute to a free application of lime to the land in spring. Likewise, I believe that similar applications just before sowing the seed of the Portugal-onion early in August have helped me to get a remarkably fine stand and growth.

I have used manures right along, year after year. The land is rich. The fine and almost spontaneous growth of clover on any patch that is left to itself for a while would hardly show that there is any need of lime. Yet, owing perhaps to faulty drainage, the land often turns up rather soggy, with close texture. Lime seems to make it looser, and therefore more productive.

I think if I had used lime on my cucumber and melon patches, I would not have had to record such a complete failure. I shall use lime more freely next season.

Wheat or Straw?

On some of the best wheat land the crop runs to straw. This is because there are not enough available mineral foods to balance the manure or clover. A field test on such land showed that Potash increased the grain from 20 bushels on unfertilized soil to 31 bushels where

POTASH

was used, and to 37 bushels where Potash and phosphate were used. Both were profitable. Supplement the humus of such land with 200 lbs. acid phosphate and 30 lbs. Muriate of Potash or 125 lbs. Kainit per acre. Potash Pays.

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RIGHT PROPORTION OF HEAD TO STRAW

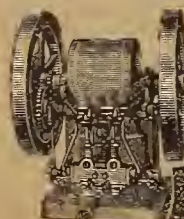
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The FARMERS' LOBBY.

A Live Coal From Off the Altar

By Judson C. Welliver

WOMAN suffrage has arrived. It's right at the front among the live issues of the day. It is going to become the law of the land. The battle is won for it; won, first, by the British women, who got the idea that anything worth having was worth fighting for, and thereupon proceeded to retire the ancient theory that women wouldn't and couldn't fight for anything; won since then by the American women who got busy putting business method behind their campaign for it.

It's just as well to accept the situation and, recognizing the facts, consider what it all means to the country and to the men and the women. It isn't possible yet for the women to vote in many States, but the thing is coming so fast that it is quite startling when you look into the details and learn precisely the progress made of late. I am writing this letter from Chicago, where the national progressive convention is on. It is already certain, though the platform has not been adopted on the day this letter is sent, that equal suffrage will be a plank in the platform, and there will be no equivocation about it. The fact that it's going into the platform isn't the most impressive thing about it, by half. What surprises me, more and more every day here among these progressive delegates, is the discovery of their unanimity in favor of it. Like a great many other supposedly radical things, it has had a powerful silent support for years, but it never found itself. One man made up his mind that he was for it, but he nursed the deluded notion that he was the only chap that was wise enough to have reached so sapient a conclusion. He thought everybody else would think him a cheerful idiot if he said anything about it, so he kept still. The woods got filled with people in just this attitude of mind. I was one of 'em for years; then I got to mentioning right out loud in meeting that I wanted the women to vote, and it was surprising how patient people were with me, how many said they agreed. But the thing hadn't a ghost of a chance until the women themselves got out at the intersection of Main Street and Central Avenue and announced that they wanted it. There was no disposition to force it on them, though that's my plan. I don't believe in giving the vote to women as a concession; I'd exact it from them as a duty to the community. You might as well talk about letting people be members of the community, and permit them to do so on condition that they would be good enough to pay their share of the taxes. How would that work? A lot of 'em would conclude not to bother about paying the taxes; they'd feel pretty sure that a sufficient number would pay, to keep the machinery of government and administration going, and that would give the benefits, of necessity, to the non-payers as well as the payers. No, any proposition of making the duties of citizenship optional is a failure. If I could have my way, I'd provide a capitation tax on everybody of twenty-one years or over; make it heavy enough to be felt; perhaps I'd make a minimum of one dollar a year and then add to that a percentage of the general tax that each individual paid; the whole to be remitted provided he voted, but compelling him to pay it all if he didn't take enough interest to vote. I guess that plan would fix these folks who think they're too exclusive, or too intelligent, or too ignorant, or too unconcerned about their government, or too busy with their business! It wouldn't be anybody's privilege to vote; it would be as much a duty as paying your taxes, and there would be a penalty for delinquency, on the same theory.

Just think that over. I didn't invent it, but I've found a good many who think it would be a right good idea. The women? Why, it would reach for them just the same as for the men. Think I'd have my model government run without the expression of the opinion of all the best people? Hardly. This is the generation of the child. Everybody is getting concerned about the baby crop, making it better than last generation; inducing the babies to live, and educating them, and making them useful members of society. We need child-labor laws, factory inspection, better education and better distribution of it; no end of things we want and are going to get for the babies and the children. Well, who's going to take so much or so intelligent interest in behalf of that propaganda as their mothers? Who knows as much about ventilation and light and sanitary conveniences and chalkless milk and

candy that isn't poisoned as the children's mothers? Then why not put their mothers on the job at the ballot-box as well as in the nursery, watching out for the interests of their infants? Yes, it's true that woman's sphere is the home; but she'll get over that enough to carve out another in the voting-booth. It's my observation that the women who do most of the talking about not wanting to vote because they can't take the time away from household duties are women who devote more time to pink teas than to babies, and are busier with bridge whist than with cooking.

But I didn't intend to lecture about this subject; merely to make a simple statement of the facts about the status of this movement, the progress it has made, the ground it is likely to cover in the near future and the probability that it will presently capture about the whole nation.

Six States now have full suffrage—women vote all the way from constable up to president. These States are: Wyoming, since 1869; Colorado, since 1893; Utah, since 1896; Idaho, since 1896; Washington, since 1910; California, since 1911.

Municipal suffrage is enjoyed by women in Kansas, since 1887. Then, too, the town of Ginter Park, Virginia, has had suffrage for tax-paying women, in all municipal affairs, since 1909.

Women vote on various bond-issuing propositions in Kansas, since 1903; in Iowa, since 1894, and in New York, since 1910.

Women vote at school elections in Kentucky, if they are widows with children of school age. The States that have general school suffrage for women are: Michigan, since 1875; Minnesota, since 1875; Colorado, since 1876; New Hampshire, since 1878; Oregon, since 1878; Massachusetts, since 1879; New York, since 1880; Nebraska, since 1883; North Dakota, since 1887; South Dakota, since 1887; Montana, since 1887; Arizona, since 1887; New Jersey, since 1887; Illinois, since 1891; Connecticut, since 1893; Ohio, since 1894; Wisconsin, since 1894; Oklahoma, since 1907.

In Louisiana the necessary measure for amending the constitution to give women general school suffrage has passed two successive legislatures, and as I am writing is awaiting the signature of the governor, who is for it and will sign it. That will submit the question to the people, and their ratification, of which there is little uncertainty, will make it a part of the constitution of that State.

It looks as if five States would acquire the full suffrage for women this year. Possibly one or two of them will defeat it, but the reports which the suffrage organizations receive indicate that the chances are very favorable in all five. They are:

Michigan, Kansas and Oregon, which will vote November 4th on the constitutional amendment. Arizona has initiated the proposition under its initiative and referendum provision and will vote this autumn.

Ohio, which will vote on September 5th on this, along with various other proposed amendments to its constitution.

In Nevada the necessary resolution for equal-suffrage amendment to the constitution has passed one legislature; it has yet to pass the next succeeding legislature, and then will go to the people at a referendum vote, and all indications are that it will carry.

In two States the women made and lost good strong fights for suffrage amendments. Missouri's legislature refused to be shown, and rejected the resolution. In New Hampshire a constitutional amendment to accomplish the purpose, having been submitted to the people, was defeated by them.

Here are some more highly significant facts:

The Republican state convention in Iowa gave a ringing and complete endorsement, in its platform, to the equal-suffrage proposition, and the next legislature will undoubtedly pass the necessary resolution; the Democratic state convention gave a half-hearted and equivocal endorsement.

In Pennsylvania—contemplate this, please, for it's the State of the Camerons, Quay and Penrose—in Pennsylvania all political parties have given platform declarations in favor of equal suffrage. That would have sounded once like hell singing psalms, but you can't be sure about Pennsylvania nowadays; it seems to be vying with California for headship of the Progressive procession. These States that get Progressive infection late seem to take it very hard. I don't understand why it is.

Talking about the Progressive inoculation causing a violent form of varioloid in the case-hardened old States reminds me of the fact that Portugal is in line, too. That country used to have about as rotten a government as Pennsylvania or California under the old régimes. I hate to say anything so mean about Portugal, for it's a small country and might not feel like resenting the insult; but candor compels the observation. Well, about the same time that California was pitching its old Southern Pacific machine into the junk-heap, Portugal was chasing its prodigal young king and his cabinet and a big bunch of decadent nobility out of the country and starting a republic. California, among its first acts after it has established a republican form of government, granted full suffrage to women; and it certainly is interesting that Portugal, likewise, soon after becoming a republic, did the same thing, though limiting the suffrage of women to those of certain property and educational qualifications!

Don't suspect that Portugal is unique among European countries in giving partial suffrage to women. Why, Iceland last year gave full parliamentary suffrage to all women of over twenty-five years. It might interest you to know that Iceland is getting to be a regular little Arctic New Zealand of political, social and economic progress. It has the biggest endowment of water-power of any country, almost, on earth; magnificent falls that never got harnessed and set to work because there was nothing to manufacture in Iceland except ice, and they didn't need to make that artificially. Some enterprising folks nosed around looking for something they might make, to utilize their great wealth of power. They found various things that they could manufacture profitably if they could get the power. So the country is now building dams and turbine wheels and turning its power with electricity, and threatens to be a significant manufacturing region before long!

Maybe the women don't know enough about business to be entitled to vote. I've been told so. Let me give just one retort to it: Fourteen years ago I lived in Des Moines, and the town started to buy its waterworks from the private corporation that owned them. The proposition involved issuing bonds, so the women got to vote on it. Their ballots and those of the men were put into separate ballot-boxes, and consequently could be counted separately. The town was to get the waterworks for \$850,000, which was cheap. Well, the women gave a snug majority of their votes for buying, the men gave a slightly larger majority against buying, and the proposition was voted down. Now, with the water-system badly run down and intrinsically worth very little more than then, the town is trying to figure out a way to scrape up \$2,500,000 to buy those same works! Occasionally it walks around behind the town hall and kicks itself earnestly for a spell, just to remind itself what a fool it was because the men didn't have as much sense as the women when that other vote was taken! Don't tell me the women haven't sense enough to vote. I've seen 'em try it.

Apropos of that Des Moines waterworks election, I can't leave out a story about a bright woman's notion of the awful bother of voting. The mayor of the town was John MacVicar, now a national authority in progressive municipal government. He was a young fellow with a pretty and clever wife and three babies. Mrs. MacVicar was powerfully favorable to the purchase proposition. About

eleven o'clock in the morning she sent for a neighbor to 'tend the babies, and went down town to vote. She had never done it before. Tripping into the booth, she spoke to the men in charge, all of whom knew her, was handed her ballot, asked a question or two, marked the ballot and deposited it in the box. There were a number of people waiting, but Mrs. MacVicar stood right in front of the box and showed no disposition to move on. The congestion of traffic finally compelled one of the officials to say:

"That's all, Mrs. MacVicar; you've nothing more to do."

"Oh, is that so?" demanded the mayor's lady. "Is that all?"

"Yes, that's all."

"And I've voted now, have I?"

"Yes, you've voted."

"And I don't need to stay and see it counted?"

"No, we attend to that later."

"And so you'd like to have me move on and give these other people a chance?"

"Why, you see, if you'll pardon me—" began the embarrassed officer of election. But he didn't finish.

"No, I really don't see," broke in the amateur voter. "It's too much for me. Why, when John goes to vote, he gets up at six o'clock, has a light and very early breakfast, rushes down town, and never gets home before daylight the next morning, and can't be found anywhere. I don't quite understand."

Then the mayor's lady joined in the laugh, and tripped out again, returning to her home.

Women have voted at municipal elections in New South Wales for forty-five years. They have done it in Victoria for more than forty years. Since 1902, women have had full suffrage throughout all Australia. They have voted at municipal elections, for various periods, in Ontario, New Brunswick, Manitoba and Nova Scotia, Canada; in Tasmania (which was started as a colony of convicts, and got civilized enough to have woman suffrage twenty-seven years before California got to it); in Norway; in Belize, the capital city of Honduras, Central America, and in a lot of other places. Oh, yes, and they are to have suffrage under the new Chinese republic, too. The same little ivory-colored ladies that we used to be sorry for, because their feet were bound up and not allowed to grow, will be coming over here ten years hence and marveling at our backwardness and condoling with our women.

Now, as to the effects of having women vote. Take it in the country. In the country where I live it's considered especially good form for the lords of creation to signalize their superiority by knocking off on election day and getting drunk. Not all of us, of course, but enough to make it the biggest day of the year for the bootleggers and the busiest for the constables.

Suppose, then, that the women voted. We hear a lot about rural civic centers and that sort of thing these times. Suppose that on election day the women, being also voters, and having some scruples as to the propriety of getting drunk and beating each other up, along with their lords and masters of the stronger and superior sex, should decide to have a new sort of election day. They'd have committees to provide lunch, plenty of hot coffee, a little entertainment of any sort that chanced to please, and would turn the schoolhouse into a neighborhood reunion and social center for the day. Doesn't it occur to you that the next day there would be a lot fewer swelled heads among the lords of creation than there usually are now?

Maybe, of course, there is something in the argument that 2,400 ancient darky advanced against woman suffrage. I asked him if he was in favor of it.

"Lawd, boss, Ah doan' know nuffin' 'bout what you-all's done talkin' erbout. We done got all de sufferin' we needs in ouah fambly."

"But," I explained, "I don't mean suffering. What I'm talking about is giving your wife a chance to vote. Don't you think it would be a good thing for your wife to have a vote?"

Uncle Peg thought it over a minute and then replied:

"Ef dat's it, caount Uncle Peg ag'in it. Dat wife o' mine, she done got all de money dat's good fer her naow!"

The truth is that the movement for woman suffrage is just one manifestation of the great world-wide movement toward democratizing all our institutions. It proceeds from the new [CONCLUDED ON PAGE 19]

Women won by putting business methods behind their campaign

Progressive delegates favored equal suffrage. No doubt about it

Mothers should have a hand in the things that have to do with the development of our future generation and citizenship

THE TURN OF THE PROF.

By William H. Hamby

Illustrated by Fred E. Lewis



PROF. HALEY was deeply absorbed in a scientific article in a late magazine when he became conscious of a booming, brag-gart voice just behind him, which sounded oddly familiar.

He took his eyes from the magazine for a moment and listened. They were three hours out of Denver, and the two men in the seat behind must have got on the train at the last stop.

"But the easiest ones to fleece," said the heavy voice, "are the fellows who always have their noses in a book. A college professor is even easier than a banker. It's easier than robbing a newborn babe of its rattle, for they don't even bawl when sheared."

He broke into a coarse, jarring laugh and brought a heavy hand down on the other's knee.

"I must tell you about skinning a professor up in Nebraska—one of the slickest little deals I ever pulled off."

Prof. Haley writhed a little, but continued to listen. He knew now—this was Balim Lucks, a pseudo real-estate man. And the story which he told with such glee to his casual traveling companion—didn't he know that, too? Could he forget the five years of saving it took to gather that five thousand which was to build a home for—her?

When Lucks finished the story of how he had cleared up the booky Prof., both men laughed uproariously.

Again Prof. Haley writhed in his seat, and the blood pumped hot into his head. It made him angry to have been duped by that lying rascal; it made him furious to remember how it had kept the dearest little girl in the world waiting these three years for him again to gather money for the home in which they were to start life together.

It was to hurry the gathering of that money that he had engaged to fill twenty or thirty lecture dates for a lyceum bureau.

Prof. Haley got off at Dodge City, where he was to lecture that night. Among the mail forwarded him from the college was a letter from Bob Warren in Missouri, which said in part:

Since I had the pneumonia last winter, my lungs have not been as strong as they might be. The doctor advises me to go to a higher, drier climate. I have decided to trade my farm for land in western

Kansas. There is a Mr. Lucks here, a new real-estate man from Nebraska, that has just the thing I want. I guess I'll trade with him. He wants to close the deal Thursday. I've just about made up my mind to do it.

By the way, while you are lecturing in Kansas, you might stop off and look at this land and let me know what you think of it, although I am sure it is all right. A man of Mr. Lucks' means and standing could not afford to misrepresent a deal. I am to get four hundred acres of that land and three thousand dollars in cash for my two hundred acres.

Cold sweat stood out on Prof. Haley. To think of Bob's being in the jaws of that shark—and Bob's farm was his only means of living—and Bob sick at that! Suppose they had neglected to forward the letter!

He hurried to the depot and wired: "Wait until I see the land."

This was Tuesday. Balim Lucks would get back to Missouri Thursday morning and want to close the deal at once. Looking up the numbers of the land, Haley found it was only thirty miles from Dodge City, and he would have time to see it that afternoon before the lecture.

He got a motor-car and went out and looked over the four hundred acres. He judged it was worth about twenty dollars an acre.

"How much did you get for your farm?" he asked.

"Get? I haven't sold it."

"Oh," said Haley, concealing his surprise, "I understood you had sold it to a man who came from Missouri."

"No," said the owner. "We agreed on terms, and he said he thought he would take it—would wire me Thursday—but he didn't pay anything on it."

"What was your price on it?"

"Seven thousand."

Haley knew that Bob's land was worth at least twenty thousand. Again he started to the telegraph-office in a sweat of apprehension. Suppose his telegram should be missent, or fail to be delivered.

But as he wrote the message an idea struck him. He tore up the telegram and went out thinking.

In half an hour he hunted the owner up again.

"I'll give you seven thousand five hundred for that land. Pay you five hundred down and the rest within thirty days."

"I'll go you," said the owner readily.

A brief contract was drawn, and the money paid over. The next morning Haley returned and had the papers all made out and properly executed.

Then he wired Bob: "Close deal Thursday if Lucks gives you the three thousand dollars in cash and a warranty deed on the spot. Unless he will, call trade off."

Prof. Haley knew Balim Lucks, and waited expectantly for the telegram, which came about three o'clock Thursday evening.

"Have closed deal, papers made out and signed. Bob." Haley smiled triumphantly and sat down and wrote a letter of explicit instructions to Bob.

Then he called up the former owner of the land on the long-distance 'phone.

"I expect," he said, "that fellow from Missouri will be out Saturday to buy that land of you. When he comes, tell him I'll sell. I'll be at Hutchinson Monday."

The professor was in the writing-room Monday afternoon when Balim Lucks came puffing into the hotel lobby. He saw at a glance the last forty-eight hours had been uneasy ones for Lucks. He wore his usual air of bluff and self-assurance, but in his puffy face were no lines of hilarity. He went directly to the desk, whirled the register around and ran down the page.

"Do you know where that fellow is?" he asked of the clerk, pointing to a name.

"Yes, he was around here just a while ago," replied the clerk, looking around the lobby. "Yonder he is." And although Haley had turned his face from them, he knew the clerk was pointing at him.

"Hello, partner." The real-estate man came up breezily. "Are you P. M. Haley?"

"Yes," and as the professor turned, Lucks gave his head a jerk and looked as though he had seen a ghost. Then covering his embarrassment with a heavy, forced laugh, he brought his big hand down on Haley's shoulder with a whack.

"Well, bless my soul if it ain't Prof. How did you ever come out with that little property I traded you?"

"Oh, so-so," said the professor coolly. "How is everything with you?"

"Fine," said Lucks. And after rambling around the subject for a quarter of an hour, he broke out: "Say, Prof., there's a little piece of west Kansas sand out here by Dodge City, jack-rabbit land, I've sorter taken a shine to. I understand you own it. Want to sell it?"

"Yes," replied the professor, "I would sell it."

"Of course, it isn't really good for anything," began Lucks confidently. "Never rains out there—and dry farming's all rot. I merely want it to trade on. What will you take for it?"

"Oh, I don't know," answered Lucks indifferently. "Probably be worth four or five thousand to me. You see, I want to give you a chance to get even with me on that other deal."

Prof. Haley shook his head slowly, thoughtfully. "I think it is worth more than that."

Balim Lucks bantered, ridiculed and argued, but raised the price without much effort until it reached eight thousand. There he hung.

"Why, man," he said when the professor still shook his head, "you'll never get your money out of it in the world. It just happens I know where I can turn it over, or I wouldn't touch it at all at that figure."

"No, I can't take that." The professor turned back to the desk and resumed his writing.

"All right," said Lucks, "the loss be on your head." And he walked away with a careless swagger, bought a cigar and stood by the desk with thumb in armpit of his vest and talked expansively to a group of drummers.

But out of the corner of his eye Haley saw he was restless. He went to the news-stand and bought a paper and tried to read. He went out to the café and tried to eat. But in half an hour he drifted back and sat down by the professor.

"I'll tell what I will do, and now this is my last. In order to close this thing up and get out of here to-day, I'll give you nine thousand cash for that land."

Again Prof. Haley studied a long time and opened his mouth as though to accept, but changed his mind and reluctantly shook his head.

"I'm done," said Lucks; "I can get plenty of other land for half that price and I don't need yours."

He took two more turns about the lobby, and Haley, still watching from the corner of his eye, saw he was scowling in a distressed way. He seemed much disturbed.

Directly a man, evidently a citizen of the town, came in and walked around the lobby a few times, looking at one man after another. He finally approached the real-estate man.

"Is your name Balim Lucks?" he asked, eying Lucks sharply.

"That's me," said Balim, biting the end of his cigar.

"I'm the sheriff," said the other man. "I have a telegram here from Missouri."

"Just a minute," Lucks glanced uneasily toward Haley and motioned the sheriff aside to confer with him.

The professor could not hear, but could see the ago-

nizing look on the real-estate man's face as he pleaded in an undertone with the sheriff and tremblingly kept wiping the sweat from his forehead.

The sheriff seemed reluctantly to consent to Lucks' suggestion, but kept a vigilant eye on the unhappy real-estate man.

In a few moments Lucks was back at Haley.

"Fellow just came in," he said furtively, "is interested in that land. He's real anxious, and rather than lose the deal I'll raise my offer to eleven thousand."

Haley turned back to his writing to hide a smile. "No," he shook his head positively this time. "I believe I don't care to sell that land at all just now."

But Lucks did not go away that time. He shuffled his feet on the floor, scraped his chair, cleared his throat.

"Twelve thousand then," he blurted out.

"No," again a positive shake of the head without turning.

Lucks got up and took another turn about the lobby, the man "interested in the land" threateningly close to his right arm.

He came back again.

"Say, look here." Professor Haley turned and looked at him coolly. He was pale, his flabby jaws sagged, beads of sweat stood out on his forehead and neck.

"What's your game?"

"I have no game." The professor shook his head innocently.

"Then why won't you sell that land?"

"I will—when I get my price."

"What is your price?"

"Twenty-five thousand."

Balim gulped and snorted and swore.

"What do you take me for?" he demanded angrily.

"First of all," replied the professor, smiling evenly at him, "I take you for a rascal; next, a sucker, and, last, a convict."

"A convict?" He grew a shade paler.

"Yes," nodded the professor. "You know what it means to sell land in Missouri to which you have no deed."

"But I'm not in Missouri," Lucks tried to laugh.

"No, but the governor issued a requisition this morning. The sheriff, I notice, is ready—unless you make good your title within an hour."

Lucks collapsed. "You've got me; come on to the bank."

The professor made out the deed, and the real-estate man succeeded in making a twenty-five-thousand-dollar draft good at the bank.

"Why did you put it at twenty-five thousand dollars?" asked Lucks sarcastically when the money was turned over.

"Why didn't you hold me up for fifty thousand dollars while you were at it, and do it right?"

"I only wanted what was coming to me," said the professor with another smile. "You see, this Missouri man's farm is worth twenty thousand dollars. You have already paid him three thousand, and this western land you said was worth only six. So I'll send him eleven thousand to make up the difference. That, with the seven thousand five hundred dollars I paid for the land, leaves me only six thousand five hundred, which makes up the five thousand I lost on you three years ago and allows a little for interest."

Lucks was for once completely disgusted with himself to even try to bluff it out in a good humor. He turned glumly toward the door of the bank.

"Oh, say," called the professor pleasantly, "when you get back to Missouri, tell Bob that you saw his half-brother—the easy Prof. from Nebraska."



"Is your name Balim Lucks?"



"Well, bless my soul if it ain't Prof."



"Tell Bob you saw the easy Prof."



"Say, look here. What's your game?"

Barred!

By Berton Braley

It's all right for Mother to scrub,
To clean every cranny and nook,
To sweat in the steam from the tub,
To wash and to bake and to cook;
For this is quite womanly toil,
The kind on which all of them dote;
But all of her charm it would spoil,
If Mother should vote.

It's all right for Mother to pinch,
It's all right for Mother to save,
To work herself on—inch by inch—
To the verge of a premature grave;
It's all right for Mother to raise
Every chicken and duckling and "shote";
But dreadful indeed were the days,
If Mother should vote.

It's all right for Mother to share
The work and the fret and the strain,
It's all right for Mother to bear
Her children in womanly pain;
She can plan, she can labor with men,
And it doesn't "unsex" her a mote;
But the world would be chaos again,
If Mother should vote!



Managing a Lyceum Course in the Country

By the Rev. M. B. McNutt

THE Fireside Editor has kindly requested me to write more about our lyceum course in the country, which I gladly do.

Every enterprise for rural community betterment must be based upon a real need if it is to succeed permanently. A given enterprise may not be popular at first, but if it meets a real need of the people, it will grow in their favor, provided it is well managed. Some of our folks, who at first looked upon a lecture as a dry performance—something to be endured—have come to appreciate the lectures quite as much as the concerts and plays. A country community needs the education, the entertainment and inspiration that comes through a good lyceum course.

A sad mistake that is often made is to use the lyceum course as a money-making institution. Where this is done, it means either that inferior talent is employed, or that the talent, if good, works for nothing or half pay. No course can succeed long with inferior attractions. Who wants to pay a quarter to hear a cheap concert for the privilege of giving ten cents to some charitable object, or what self-respecting community would wish to accept gratuitous entertainment from hard-working lyceum people on a pretense of aiding charity? Such business does an injustice to the entertainers and morally degrades the community. A charitable society in a neighboring town conducted a lyceum course last season, the net proceeds of which were to go to a worthy object. The course finished with a deficit. The management published a statement of the finances and scolded the town for not giving so noble a cause a more liberal patronage. This course deserved to fail, because it proceeded on a wrong principle.

A committee of our young men solicited our community in behalf of the suffering poor of Chicago during the severe cold weather last winter and gathered eighty-five dollars in a few hours. Besides this, the community contributed directly to many other benevolent objects during the past year. It closed its lecture course with a surplus of nearly one hundred dollars. Another country community attempted to make the business men of the surrounding towns pay for its lyceum course through advertising. But in one or two seasons the enterprise went under. It deserved to go under.

A good lyceum course is worth what it costs to any community, and the community ought to pay for it and will if the proposition is fairly put. Let the charity work be separate and for its own sake. Men like to get what they pay for, and honorable men pay for what they get.

When any community enterprise is put thus on a good, fair, business basis, the confidence and respect of the people are won at once, and success is assured. A group of young men from a Sunday-school class—say five farmer boys—make an ideal lyceum-course committee. And this is a splendid line of social service for them to undertake.

There are many good lyceum bureaus. The bureaus furnish illustrated announcements of all their attractions. From these, the committee selects what it wants. Sometimes a representative of the bureau meets with the committee, and sometimes a delegate from the committee confers with the lyceum headquarters in Chicago. In selecting our talent, we try to have a good variety, remembering that there are many different tastes to satisfy and, also, that there is spice in variety.

We have had lectures from the lyceum bureaus on the following subjects:

"Holland—by One Who Had Been There."

"This New Age," or "The Achievements of the Twentieth Century."

"The Needs of the Hour" (patriotic).

"The Golden Fleece."

"The Mistakes of Life Exposed" (humorous).

"How God Made the Soil Fertile."

"The Problems and Progress of a Great Nation" (patriotic).

"American Morals (The Sex Problem)."

By way of entertainments and concerts we have had male quartets, orchestras, jubilee singers and other musical combinations, and impersonators and magicians.

The four attractions we secure from the bureaus each season, including livery, advertising, etc., cost us from two hundred

to two hundred and twenty-five dollars. We are enabled to put on better talent each year as the course grows in popularity. A time will come when we will be able to get the best of everything.

The local community, of course, contributes the two home-talent entertainments on each course.

The course is made up in May or June. The committee then makes a thorough canvass of every home in the community for the sale of tickets, distributing at the same time the advertising which the bureau furnishes free. These circulars, containing pictures of the lecturers, members of the quartets, etc., are dated and fastened together in a neat portfolio. This makes a souvenir of the course and is a perpetual reminder of what is coming. It is also a part of the history of the community. About ten days before each attraction is to appear announcements are made in the local papers (which announcements should be paid for) and from the pulpit, and large posters are displayed at every crossroads.

When the evening of the concert or lecture finally arrives, everybody is eager to go to the kirk. The event over, a good account of it should be sent to the newspapers. Some such course as this is possible for any country town or community, and there is no end to the good it will do.

This life would be a small affair, if it were not larger than our understanding of it. But its school keeps the year around.

The Samaritan Farmer

By William J. Burtscher

A young barber who worked in a large city in Indiana saved his money and bought a motor-cycle. One day he was far out in the country trying the speeding capacity of his machine. He got into a rut, lost control of the wheel and met with a severe fall. The handle-bars struck him in the abdomen with sufficient force to bend the bars, and the internal bruises proved fatal within two days. The young man dragged his machine to the side of the road and sat down beside it. His clothes were torn. His hands and knees were skinned, and he was suffering intense pain.

A man came along with a wagon and stopped. "Hurt yourself?" he asked.

"A little," was the answer, "but I think I'll be all right directly."

"What's your name?" asked the man on the wagon.

"Never mind about that; I'll be all right in a minute." The barber wished to avoid publicity if possible.

"Running pretty fast, I reckon?" continued the man.

"Yes, tolerably."

"Well, it's a wonder to me that there aren't more accidents than there are. You fellows ought to know better than to run like you do."

The man drove on. A few moments later a man came along on foot—he was one of the farmers who had seen the accident from the field.

"Been hurt?" asked the farmer.

"Yes!"

"You look pretty pale. Shall I call a doctor?"

"No, thank you. Somebody'll come along directly and maybe I can ride back to town."

"Maybe you can, and maybe you can't. You come on with me. I live down this way. I'll hitch up and take you in to town at once. It might be dangerous to wait."

The farmer picked up the heavy motor-cycle. It was all he could do to push it. In a few moments they were hurrying to town. The young barber was taken to the hospital, where he soon died. The farmer never received a cent for his trouble; in fact, he had refused pay. But he feels that he has been a neighbor to a stranger in time of need.

He was a Good-Samaritan farmer, displaying the spirit of Christianity. What good does it do to remind the man who has sinned against the laws of man and reason that he has done wrong after he has come to grief? What a man needs in such a time is sympathy and attention.

Be just what you would like to be thought to be. You cannot deceive very long at best; why try it at all? Thumping a fellow on the back and shouting, "Hello, old man!" is all right, but you will hardly reach his heart that way. More likely to give him a crick in the back and raise his dander.

Out of Place

By Aubrey Fullerton

"EVERYTHING in its right place, and nothing else in its way" is a good old rule that has never been improved upon. A market-gardener who thoroughly believes in it himself demonstrated it in a new way to a young friend who was watching him at work one day.

He was weeding out his crop, carefully hoeing and cultivating the rows of thrifty plants. In one corner of the garden, among the carrots, some oats had taken root and grown tall and sturdy. The farmer, as he came to them, pulled up several of them and threw them out with the weeds. He did this without hesitation; but his friend thought him wasteful. "Why do you pull them up?" he asked. "Aren't they good plants?"

"Yes, they're strong, thrifty plants, every one of them. There's no better oats in any grain-field around."

"Well, oats are too valuable, I should think, to destroy that way."

"But they're out of their right place. If those oat-plants were out in the field yonder, I would never think of pulling them up, for they would make good grain. But here they are only weeds. I want nothing in this particular corner but carrots, and the oats will interfere with them. The plants are good, but they're in the wrong place; for, you see, there is a place for everything, and in any other place than that it does not fit."

This simple philosophy of the old market-gardener applies not only to plants, turned into weeds because of their being where they ought not to have been, but to people as well.

They, too, need to keep in their right places, or they will be very much like the oats that became weeds.

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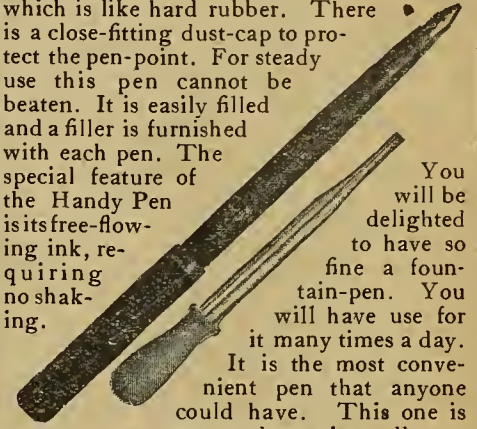
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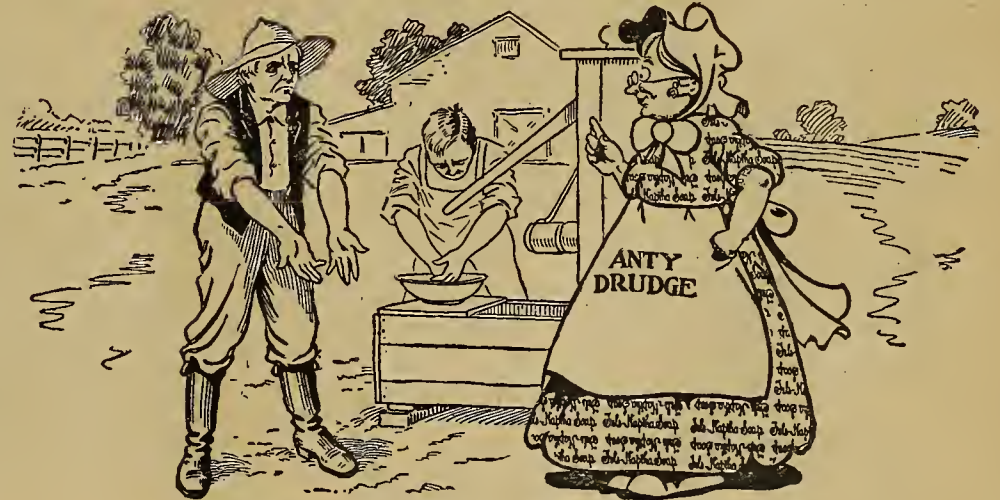
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Anty Drudge to Mr. Farmer

One Man—"Gee, but it is tough work trying to get my hands clean. No hot water and what good is this old soap without hot water? I may just as well not wash, for all the good it does. Someone ought to invent soap that can be used in cold water."

Anty Drudge—"Dear man, you have the invention right here. It's Fels-Naptha Soap. With it you need no hot water, just plain pump water, and it will take every stain off your hands. Tell your good wife to keep a cake of Fels-Naptha Soap beside the wash basin."

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Fels-Naptha Soap will practically do your weekly wash for you. Does away with the boiler and makes the hard rubbing on the washboard unnecessary. Fels-Naptha Soap saves your health, your strength, your temper—and the clothes, too. And if you have a washing machine, that part is done in a jiffy.

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For full particulars, write Fels-Naptha, Philadelphia

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There is a splendid article for boys about making model aeroplanes, written by a man who knows what boys want.

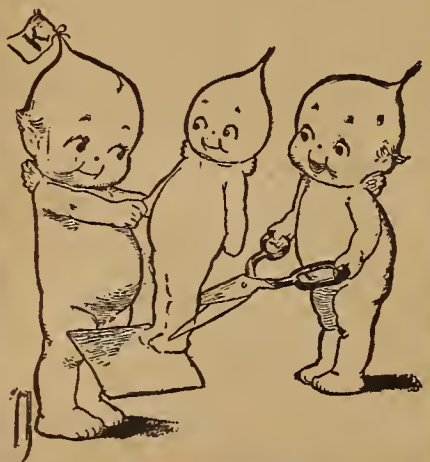
Sam Loyd's Puzzle Page offers thirty dollars in prizes to the brightest boys and girls who can guess his puzzles on page 82 of September's *Companion*. Why don't you try to win?

More Prizes. See page 33. Half a dozen prizes offered for half a dozen things that any boy or girl can do.

Ask Your Mother for 15 Cents for the

WOMAN'S HOME COMPANION

You can get your September copy now. Readers of *Farm and Fireside* can get it by mailing fifteen cents to the *Woman's Home Companion*, 383 Fourth Avenue, New York. Write your name and address, say you want the September number, enclose the fifteen cents, and see how soon the *Companion* Kewpies come to you.



A Batch of Queer Stories

By Arnot Chester

CHILDREN, I've got three queer stories to tell you. One about a hen, one about a colt and one about a little boy; and strange as the stories sound, they are all quite true.

The hen lived on a western ranch, and her name was Speckle. She was a large, handsome hen, and there was nothing strange about her, except that, somehow, she never could manage to raise a family. She did her best, and tried and tried over and over, to hatch out some chickens; in fact, she would sit faithfully on her nest until she was driven off of it and the spoiled eggs taken away from her. At last the farmer's wife felt so sorry for Speckle that she determined to reward her for all her patience and perseverance. So the next time Speckle tried to hatch some eggs, her mistress waited until she had been on the nest three weeks, and then one fine day she slipped one of Madam Speckle's own eggs out, and put in its place an egg from under another hen named Blackie, who always brought out her full brood nicely, so as to give poor Speckle a pleasant surprise. Now shouldn't you think she would have been delighted to see one dear little chicken at last? But, instead of this, when the chick pecked its way through the egg-shell and gave its first faint little "cheep," poor Speckle was so terrified she dashed off the nest with a loud "squawk" and flew up into the very top of the nearest tree, where she stayed, trembling with fright and refusing to come down even to eat, although her mistress did her best to coax her. And there the poor thing remained for two whole days, and then dropped to the ground, stone dead from sheer fright. Wasn't it odd?

Our second story is about a colt born on a farm in Iowa. The colt's mother died when it was a few days old, and the farmer and his family took pity on the little four-legged orphan and brought it up between them as well as they knew how. They nursed it so carefully that it lived and grew strong and hearty, and as it had always had people for its companions, it looked upon "humans" as its natural mates. Master Colt followed the men and the women and the children all about the farm, treading right on their heels and often on their toes as well, which certainly couldn't have been pleasant for them, though he didn't mean to hurt them, of course. He was fond of being in the house with the family, too, and he soon learned how to lift the latch of the door with his nose, and would trot into the kitchen as quietly as if it belonged to him, oversetting tubs and smashing crockery with his tail and hoofs as he went, for, like all colts, he was very awkward and ungainly in his motions. But the funny part of it is, he was afraid of horses. He didn't seem to know that he was a horse himself, and that all his relations were horses. Whenever a horse came near him and tried to be friends, he would get frightened and run for protection to his human companions. The farmer hoped to cure him of this absurd fear by putting him into a pasture with another colt of his own age, but when Colt Number Two came up to make his acquaintance, Colt Number One would show his teeth and chatter in rage and fear; for when they are angry, as perhaps you know, colts have a curious way of baring their teeth and opening and shutting their mouths as quickly as possible. What became of this foolish colt finally I can't tell you because the farmer sold him; but the last time I heard of Master Colt he was as much afraid of his horse relations as ever.

Our third story is about a little boy who lived on a homestead in far-away Australia. In that part of the world settlers are so scarce that often there are miles and miles and miles between one home-

stead and another, and each family is quite cut off from everybody else and is obliged to live entirely to itself.

This little boy was six years old, but though he had seen a few "black fellows," as the natives are called, he had never in his whole life seen a white man, except his own father. One day he rushed into the house in great excitement, calling out: "Oh, Mother! Mother! there's such a strange-looking thing standing at the gate! Come and see it."

"What sort of a thing?" his mother asked, thinking of some curious wild animal.

"I don't know," he replied, "but it's on a horse, and it looks like father."

And, lo and behold, it was a man, an English traveler, who was riding through the country.

So now you have a hen that was scared to death by a chicken, a colt that was afraid of a horse and a little boy who didn't know a man when he saw one.

And I leave you to decide which story is the queerest of the three.

Cousin Sally's Letter

DEAR COUSINS: Here we are again after spending our vacations—how? Some of you have stayed at home, and had no



"Oh, Mother! Mother! there's such a strange-looking thing standing at the gate!"

vacation at all, some have camped out in the woods or on the mountain-sides. Some have visited relatives in distant States. Others have indulged in pleasure trips to famous resorts, historic cities or have roamed the cliffs and beaches of the two oceans which bound our country, or you have bathed and waded on the shores of the Great Lakes which touch us on the north. Isn't it wonderful to think that, although you or I have not been ten miles from home all summer long, yet some of the cousins in our great family have gone almost everywhere vacation-hunters go?

But we're all back once more and ready to begin work again. Don't you feel all the better because of your vacation? I do. And with the thought of winter comes the thought of all the good things we can do. There are the nutting parties, the Halloween games, Thanksgiving dinners, Christmas and its own good times, the New Year's coming, the national holidays in February, to say nothing of the coasting, sledding, skating, and then, presto, it'll be spring again. But there are other things to be considered besides the fun of autumn and winter. There are lessons to be said well and honestly. There are the chores, the housework we can help with during the colder months of the year. There are the books to be read, the sewing to be done, the kindling-wood to be brought in daily. Autumn and winter won't be all "feasting and fun," as Red Queen said in "The Looking-Glass House," and my cousins can be serious, as well as gay.

So, forward, march! toward the things that have to be done. The days of the swimming-pool, the hammock, the warm, long twilights, are becoming things of the past. Autumn is coming, and autumn means work, the bringing in of summer's harvest, the fulfilling of summer's hope.

I hope each cousin will reap a harvest of sun-browned skin, clear eyes, a healthy frame, a determination to work harder, better, more nobly this autumn than ever. Vacation's over! Forward, march!

Affectionately, COUSIN SALLY.

Cousin Sally's School Contest for September

IT SEEMS appropriate to have a September contest that has something to do with schools. Most of my cousins will go back to school in September, although some of you have a school year which includes the summer months as months of study. Once upon a time I visited a school in Kentucky, not very far from Mammoth Cave. There I found over fifty jolly boys and girls studying hard from half-past seven in the morning until after five at night during August. And I wasn't sorry for them a bit. They were having such splendid times, playing during morning, noon and afternoon recesses in the beautiful woods that surrounded their school. Do you know, there were trees in those woods that they tell us were growing there when that keen-sighted sailorman on the masthead of the Niña shouted "Land! Land!" to delight Christopher Columbus.

But you're all wondering, I know, what I really started out to say. My article is going around as many curves as a West Virginia roadway or a Boston street, isn't it?

Well, as I was about to say, this is the time of year when most of you think of going back to school. Knowing that, and knowing also that you like contests, I put two and two together and made this:

Our September contest is to be a picture of the school-house which YOU attend. You must draw it, paint it or photograph it yourself. There will be four prizes for the best pictures painted or drawn and two prizes for the best photographs, making six prizes in all.

If you draw or paint the pictures, they must be drawn or painted entirely without help from anyone. On the back of the picture your

teacher must sign her full name and the name of the school you attend. This is to show me that she knows you drew the picture of the schoolhouse without aid of any sort. If you send a photograph, have her tell me on the back of it the name of the school and the fact that you took the photograph yourself with your own camera. You don't have to develop and print the pictures yourself.

Send all of the pictures and photographs flat, and protected by cardboard. All pictures must be in this office on or before October 1st. Don't send a picture larger than four by five inches, and address them all to Cousin Sally, care of FARM AND FIRESIDE, Springfield, Ohio.

Two New Puzzles

Will the puzzle brigade of the C. S. C. enjoy these new ones? Cousin Sally sincerely hopes they will. The answers will be published shortly.

A HOT TIME—A new pupil gave his name to the new teacher as Sam Hot, another as Doree Hot, another as Mol Waber Hot, and the last boy replied to the teacher's question with "O Hot Air," whereupon the teacher got hot and said, "Boys, my name is Mity Hot," and he proceeded to make it so for those "smart" boys. What was the teacher's real name? What were the boys' real names?

ENIGMATICAL PLANTS—A farmer planted the following plants. Can you name them? 1. A letter and what comes with summer. 2. A letter and what comes with winter. 3. A letter and not tense. 4. Where flour is made and to permit. 5. Something sweet and the staff of old age. 6. Made by a tight shoe. 7. One of the apostles. 8. Five hundred and what all the world loves.

ETHEL PAYNE.

Suggestions for the Fall Wardrobe

Designs by Grace Margaret Gould



No. 1984



No. 2067

No. 2067—Single-Breasted Norfolk Jacket
 32 to 42 inch bust. Material required for 36-inch bust, three and one-eighth yards of thirty-six-inch material. The price of this pattern is ten cents



No. 1986

No. 1984—Double-Breasted Shirt-Waist with Frill
 32 to 44 inch bust. Material for 36-inch bust, two and one-fourth yards of thirty-six-inch material, with one-fourth yard for frill. Pattern, ten cents

No. 1986—Tailored Waist with Large Armholes
 32 to 44 inch bust. Material for 36-inch bust, four and one-eighth yards of twenty-four-inch material, or two and one-half yards of thirty-six-inch material. Price of this pattern, ten cents



No. 1845
 No. 1826

No. 1845—Panel Waist with Guimpe
 32 to 40 inch bust. Quantity of material required for medium size, or 36-inch bust, two yards of thirty-six-inch material and two and three-fourths yards of twenty-four-inch lace. Price of pattern, ten cents

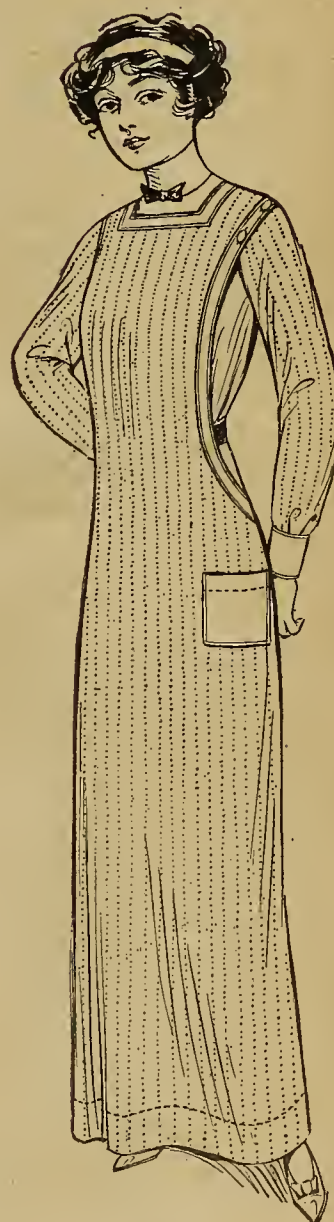
No. 1826—Six-Gored Skirt
 22 to 34 inch waist. Quantity of material required for medium size, or 26-inch waist, four and three-eighths yards of thirty-six-inch material. The price of the pattern for this skirt is ten cents

No. 2075—Surplice Waist: Large Armholes
 32 to 40 inch bust. For 36-inch bust, two and one-fourth yards of thirty-six-inch material, three-eighths yard contrasting material, one-fourth yard lace, two and one-fourth yards net. Price of pattern, ten cents

No. 2076—Two-Piece Skirt with Flounces
 22 to 30 inch waist. Length of skirt, 41 inches. Quantity of material required for medium size, or 26-inch waist, five and one-eighth yards of thirty-six-inch material. Price of this pattern, ten cents

No. 1702—Princess House-Gown
 34 to 46 inch bust. Quantity of material required for medium size, or 36-inch bust, eleven yards of twenty-four-inch material, or seven and one-fourth yards of thirty-six-inch material. Pattern, ten cents

No. 1450—Work-Apron: Adjustable Sleeves
 32, 36 and 40 inch bust. Material required for 36-inch bust, six yards of twenty-seven-inch material. The sleeves are buttoned in at the shoulders, but may be omitted if preferred. Price of pattern, ten cents



No. 1450

No. 1702



No. 1801—Men's Nightshirt

Cut for 14½, 15½, 16½, 17½ and 18½ inch neck measures, corresponding with 36, 40, 44, 48 and 52 inch breast measures. Material for 40-inch breast measure, six yards of twenty-seven-inch material. Price of pattern, ten cents



No. 2067



No. 1984



No. 1986



No. 1801



No. 1702



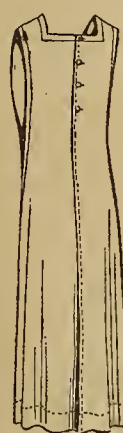
No. 1845
 No. 1826



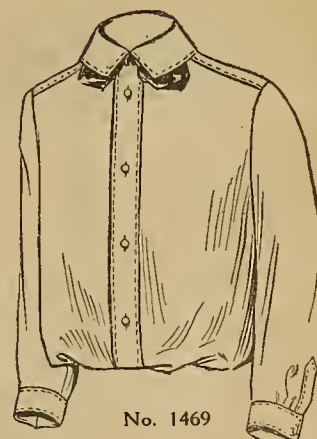
No. 1469



No. 2075
 No. 2076



No. 1450



No. 1469

Order patterns from nearest pattern depot: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado

No. 1469—Boys' Blouse with Yoke
 6, 8 and 10 years. Quantity of material required for medium size, or 6 years, three yards of twenty-four-inch material, or two yards of thirty-six-inch material. Pattern, ten cents

The Embroidery Book

Is a Complete Book of Christmas Gifts. Fully Illustrated.

These are some of the things it offers

For Father: Necktie, tobacco-pouch, calendar, collar-bag, eye-glass polisher.

For Mother: Shirt-waist, shopping-bag, guest-towels, center-piece, jabot, belt.

For Brother: Dresser set, scarf-pin case, twine-bag, razor-case.

For Sister: Dainty lingerie, jewel-bag, traveling set, chafing-dish apron.

For Little Sister: Dutch collar, piqué coat, sun-hat, pin-cushion.

For Baby: Carriage robe and pillow, bootees, blanket, kimono, bib.

For the House: Pillows in crash and monk's cloth, table-linen, stringers, towels, pillow-slips.

All of these things and many more are to be found in the Embroidery Book, Volume IV., and the Embroidery Book Supplement. The price of the Embroidery Book alone is ten cents. The price of the Embroidery Book Supplement alone is six cents.

The price of the Embroidery Book and the Supplement together is twelve cents.

Address:

The Embroidery Department
WOMAN'S HOME COMPANION
381 Fourth Avenue, New York City

Two Economical Accessories

For Busy Housewives

WHEN breakfast-caps first came into vogue a year or more ago, they were considered faddish and extreme by the conservative woman, who rarely chose to use them. But feminine opinion regarding them has changed; not only are they dainty and most becoming, but they are proving themselves a boon to the busy mother who, with a dozen tasks to perform in the early morning, has little time to devote to her toilet, even when every fiber of her being revolts against an untidy appearance. A dainty breakfast-cap solves the problem of early hair-dressing. The cap is donned in a minute, and she whose hair is hid beneath one of them looks attractive and well-groomed, even though she had had no time to use comb or brush. And as the caps are so easily made, the natural result is that one or more is now included in every woman's wardrobe, and adds much to it.

Breakfast-caps are made of all the wash materials that are dainty and graceful. In our illustration is shown a cap that is made of an all-over shadow lace, but lawn, sheer linen, organdie or any similar material may be substituted. Pieces of old wash dresses may be used, those with lace or embroidery inserts proving particularly good. For a cap of average size, a round piece eighteen inches in diameter is needed. It should be finished all around with lace or edging, about two inches wide, sewed on flat. Of this edging, one and three-fourths yards will be needed. Behind the edging the joining is covered with a beading made of lawn or net, half an inch wide, and stitched down along each edge. The ends of the beading are buttonholed and stand apart, and white ribbon hat-elastic is run in, drawing the cap into shape.

The cap should be trimmed with No. 7 ribbon in some becoming color. For the cap illustrated, one and one-half yards were used. One yard was cut off and knotted loosely throughout its length, two inches left between the knots each time. The knots were tacked along the beading after the elastic was run in, with a little looseness between, to allow for the stretching of the elastic. The remaining half-yard of ribbon was

knotted into a thick bow and placed over the second knot from one end of the ribbon band.

No pattern of this cap is sold by the Fancy-Work Department. There is a very pretty cap, No. 2060, sold by the pattern department for ten cents. It was illustrated in the issue of FARM AND FIRESIDE for July 20, 1912.

In our first illustration we present a collar of novel idea. It is cool as well as attractive in appearance and, what is even better, it does away with the perpetual laundering of neckwear that is so great a bugbear to the woman who does her own housework, and even to that other woman who, having her washing done, finds how quickly the strongest neckwear is torn to shreds.

The collar illustrated is made of a double thickness of black taffeta, the edges stitched together in a seam on the inside, then turned and pressed, after which the neckband is put on. When finished, the collar is two and three-fourths inches deep.

Black taffeta collar and plaited jabot

The frills at the front of the collar are of white net, edged with shadow lace two and one-half inches deep. One yard of lace is needed for the frill at each side. The strip of net is straight on the edge along which the lace is run, but the other edge is cut slanting, so that the net is four inches deep at one end of the strip, and seven inches at the other end. When net and lace are joined, the strip is laid in plaits running toward the lower end, each plait about an inch wide, one plait over the other. The top edges of this plaiting are turned under to form a V toward the center, and the piece is fastened to one end of the neckband. Both frills are alike, and when they are in place, tiny buttons



The pretty cap for morning wear

are spaced along the neck edge and down the front. These buttons carry out the color-scheme of black and white, in that alternate buttons are of clear glass, those between of black taffeta. Four black buttons and three glass buttons are needed. The frill may be detached and laundered. Iron it out straight, then plait and press the plaits into shape. Always remove the buttons before washing. No patterns of this collar are obtainable.

Some of the New Books

PROTECTION or Free Trade, by Henry George. This is recognized as perhaps the most complete presentation of the doctrine of absolute free trade ever made. Years ago the book was made a part of the Congressional Record, and hundreds of thousands of copies were franked out to the people. Henry George, Jr., son of the author, and now in Congress, is ready to frank copies of a new edition of the book to all desiring it, for two and a half cents a copy to cover the expense of printing and handling. Address Henry George, Jr., House Office Building, Washington, D. C.

Swine, by William Dietrich. A practical manual of hog-raising by an acknowledged authority. Sanders Publishing Company, Chicago.

Weeds of the Farm and Garden, by L. H. Pammel. A very useful book for those who desire to study weeds—and all farmers and farmers' children should. Pages, 280. Orange Judd Company, New York.

Field Book of Wild Birds and Their Music, by F. Schuyler Mathews, specifically states itself to be for the eastern part of the United States. However, since some birds are found in many sections, the book may be said to have no geographical limitations. It is pocket size. It

gives the songs of the birds just as they are sung, by notes. The book is very practical. Price, \$2.00 net. P. P. Putnam's Sons, New York.

The Horse, by David Buffum. Outing Publishing Company, New York. A volume of 160 pages of horse lore by an authority well known to our readers. This book is in the main a collection between covers of a series of articles on the breeding, care and use of the horse which appeared in FARM AND FIRESIDE. We suspect that many who read them will desire to own them in book form, and any horseman may well add this little volume to his collection. It is common-sense horsemanship by a real horseman. Seventy cents.

Insect Pests on the Farm, Garden and Orchard, by E. Dwight Sanderson, Dean of the West Virginia College of Agriculture. Dean Sanderson is certainly as high an authority as we have on this subject, and his work is one which covers the ground thoroughly. For instance, the book contains a perfectly satisfactory treatment of the "green bug" in wheat—mostly a Southwestern pest—and an equally good one of the peach-borer of the eastern orchards. It is a valuable handbook for schools and practical farmers everywhere; \$3.00. Published by Wiley & Sons of New York.

The Gift Club



Jean West
Secretary

HOW I do wish that I had a magic carpet like the "Little Lame Prince" so that I could spread it out and go to see every FARM AND FIRESIDE girl in this big and beautiful country of ours. In the twinkling of an eye, away I'd be in Idaho for a jolly little chat with Minnie K. I couldn't stay long though, for I'd have to jump back into my magic carpet and float away to Wisconsin, and from there to Illinois, and so on until I had visited every place and talked with every member of The Gift Club.

If wishes could only come true! But next best I have this little corner of FARM AND FIRESIDE all my own, and here I can talk to you and thank you all for the splendid things that you are doing in the Club and encourage and congratulate you on your successes. Isn't the Club wonderful? As some of the girls say, it seems hardly possible that we can afford to give away so many delightful gifts in return for the little bit of work that our girls do for us.

If you have never before heard of The Gift Club or read about it, you are quite likely to puzzle your brain to know what it means. Now let me tell you. It means that you can get almost anything you want for yourself or your home, if you join The Gift Club and follow the plans that I have laid out for our members. The "work"—it seems a joke to call it work—is very easy, and our Club members find it delightful. I just wish that you could read their letters. There are no dues whatever in The Gift Club, and you will not have one cent of expense. This Club of ours is truly a "Gift Club." It makes no difference whether you are married or single, a schoolgirl or a grandmother. The Gift Club has a place for you, and I am very eager to have you claim it.

"And what are some of these splendid gifts?" I hear you ask. Just come here and peep into my Gift Cupboard while I hold open the door. See, there on the first shelf are all our silver, spoons and knives and forks. Aren't they pretty? And above them on the second shelf I keep the jewelry. Ah, I thought you would be interested. The rings are beautiful, and so is this locket and chain. And do you see those brooches and the bracelets? This little baby set is just the thing to give to a new baby. There are heaps of other gifts tucked away out of sight that I wish I could show you—shirt-waists and skirts, leather hand-bags and music-rolls, fountain-pens and stencil outfits, clocks, table-cloths, napkins, doilies, handkerchiefs, vacuum cleaners, etc. I can't begin to tell you all about the treasures of that Gift Cupboard in this letter, but I shall be happy to write you and explain things more fully if you will allow me. Remember, it will not commit you to a single thing to write and find out. Just a line on a postal will do. Better write to-day before you forget.

Jean West

Secretary, Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.

A Barnyard for Rainy Days


By Von Alix

MOTHERS are ever on the alert for some little pastime to amuse and instruct the wee tots. Rainy-day work is so welcome always. This little barnyard is quite interesting. It teaches the names of animals, and quite a bit of humane treatment toward them can be instilled into young minds by means of it. Whenever you come across an animal picture, save it; if colored, all the better. One can use elephants and camels in this barnyard. When the rainy day comes, if the children can safely handle scissors, let them cut them out. This keeps idle hands out of mischief. The idea is to get the animals to stand up. For this feature, cut little pedestals, the size you may need, out of thick pasteboard.

The barn is a great big hat-box, lying on its side. Many an imaginative little boy will drive his flock into it, and out of it, never tiring of the play.

The Old Song

Verse & Pictures by John Rae

JUST listen to the young folks sing—good singin', too, I'd say. New-fangled songs sure hev got lively tunes, But somehow they don't seem to git the melodies to-day That hitch with nights like this and shinin' moons. Up there on the verandy they're a-makin' lots o' noise. That ragtime piece was ketchy I'll agree, But somehow I sh'd rather hear that crowd o' gals and boys A singin' soft "Then You'll Remember Me." Well, now—that's better! *That sounds good*—they're startin' "Old Black Joe."

How songs like that will set yer thoughts to roam! I seem to see us gathered 'round the organ in the glow O' lamplight in the settin'-room at home. There's mother—best that ever was!—a playin' "Hazel Dell," And sister Susan "takin' second" strong, And Jethro, Sam and Uncle Ben, sweet voices, too. Me? Well, I kind of hummed to help the air along. Then "Swanee River," "Old Dog Tray,"—ma's choice was "Aura Lee;" Sam favored "Pull for Shore," and as for Sue, She'd rather sing "The Mohawk Vale" than eat,—does yet—dear me! She says, "That song is always good ez new." Sometimes Nell Haskins she'd be there a joinin' with the rest, And *then*, no matter what the tune or words, The songs all sounded sweeter, and to me, at least, 'twas jest Like warbelin' of angels or of birds. Well, nine o'clock had come along and "time to git to bed," One special evenin' that I can't forget, And Sue she says, "There's one more song a runnin' in my head, It's one that *should* be Henry's fav'rit pet." Then whispered, "Seeing Nellie Home," so's only I could hear, That's just what I was *hankerin'* to do! I took the hint. To make the story short, within the year Nell Haskins she was Misses Henry True!

Let young folks sing new songs, say I; *old* songs suit *old* folks best. My fav'rit? Seems 's if I was asked to tell, I'd say that "Seeing Nellie Home" for *me* beats all the rest— And maybe, if you asked her, so would Nell!



"I seem to see us gathered 'round the organ"

Why Not?

By William J. Burtscher

WOMAN should be allowed to vote, first of all, because she wants to. She never has wanted anything yet that was not good for her and the human race after she got it. She wanted the same privilege of attending universities that man had, and got it, and nobody has regretted it. Higher education is good for her, too, but she had to fight for it.

Woman is man's equal mentally, and knows the how and why of voting as well as he does. She is man's inferior physically. Lacking the strength of body to protect herself, she should be allowed to do so through her strength of mind. She is man's superior spiritually, and would be more apt than he to vote as she prays.

Woman's place is in the home. Of course it is! That gives her a right to have a voice in the selection of the men who are to make the laws that affect the home. She is the heart of the home. Man is the head. If heart-quality is good for the home, it certainly is good for the nation.

Woman is man's helpmeet. That's old as the hills. Well, if man is not big enough to run a home, or a church, or a business without her, is he big enough to run a government without her? Yes, she is the wife of a voter, and the mother of voters, and could have influence over their voting if she could vote with them.

Her desire for suffrage is more than a mere fad. And even if that were all, it would do no harm to let her try it. She would soon drop it, as she has dropped other fads, and as man has dropped some of his fads.

A Live Coal From Off the Altar

[CONTINUED FROM PAGE 13]

consciousness that all the people are partners in the scheme of things, and that it is a duty and an obligation, not a right and a privilege, for them to do their share in running the social machine just as well as possible. If it has been a good thing to give the ballot to half the people over twenty-one years old, wouldn't it be still more democratic, and therefore still more a good thing, to give it to all of them? No community that ever got woman suffrage ever dropped it. The women in Denver elected Ben Lindsey to the juvenile bench in that town, after he had been denied a renomination by both the old parties; nominated him as an independent, put up a whirlwind campaign, and won; won because they were women and knew that Lindsey had been making that court do a great work for their children. The women are credited with carrying the recall of Mayor Gill of Seattle. What for? Why, Gill had got himself elected on a promise that he'd run a decent town; after he was in, he opened it wide, and it was about the swiftest place on the map. They invoked the recall, and at the special election the votes of the women took him down from the mayoralty, and put in his place a man who did the thing he had promised and the town wanted. Any special harm in that?

In California, which, by its great victory for suffrage two years ago, really provided the big impetus that is now pressing this issue to the front everywhere in this land, the votes of the farmers are said to have done the business; they gave a handsome majority for the ladies, and overcame an antagonistic majority that the city and town vote produced. I'm told that if suffrage wins in Ohio it is likely to be for the same reason. And I hope it wins; not because I want to divide up my vote with my wife, but because I want her help in using it right.



A real love story

Life's thrill is in it; and tenderness restrained; and ideas, real ideas!

Zona Gale wrote it.

The woman is "a slight white thing with a jewel gleaming in her hair, and behind her the great tapestry of night and the world."

The man—he doesn't so much matter—the story, that is uncommonly fine.

Yours among other splendid features

THE WOMAN IN THE ROOM

in the September

American MAGAZINE

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Get a Watch and Fob

Boys: Here is a chance to obtain a handsome and useful watch, and a fine leather fob with a gilt metal charm engraved with your own initial letter FARM AND FIRESIDE guarantees you satisfaction.

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

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

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



How to Get the Watch

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

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

Write a Postal To-Day to THE WATCH MAN

FARM AND FIRESIDE, Springfield, Ohio

The Housewife's Club

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

To Prevent Soft Coal from Smoking—Once upon a time the cucumber-pickle brine was emptied accidentally upon the soft-coal heap. It was noticed that the coal smoked less and made less gas. Afterward more brine was poured purposely upon the soft coal; this experiment proved so exceedingly satisfactory that all soft coal used for fuel is treated with brine. The coal burns better, it does not smoke and makes more heat, while seeming to consume less rapidly. This discovery seems so valuable to us that we would like to pass it along to the many who are obliged to burn bituminous coal.
Mrs. R. S. M., South Dakota.

A Kitchen Hint—My cook-book hangs on the wall in front of my molding-board, and I was bothered to keep it open at the right place until I made this discovery: I nailed two little blocks of wood on each side of the book when open, then made two buttons out of a grape-basket cover and screwed them onto the blocks, leaving the screw loose enough so the buttons turn easily without tearing leaves of book. The blocks are for the purpose of raising the buttons away from wall and making room for the leaves. I painted blocks and buttons same color as my pantry so it is ornamental as well as useful, and useful it is, for I have no more trouble keeping my place.
Mrs. F. W. B., Massachusetts.

To Clean Soot from Carpet—Cover the carpet thickly with dry salt, and you will be able to sweep it off without leaving smears or stains.
B. J., South Dakota.

Kindling Fires—Corn-stalks make the very best of kindlings. They may be gathered from the feed-racks after the stock have eaten what they will and cut into proper lengths and stored in a convenient place. A handful of crumpled paper, and a dozen or so corn-stalks will start any fire. Soft bricks, broken in small pieces and kept in an old can with enough kerosene to thoroughly saturate them, make splendid kindlings for coal-fires. To use, lay the ordinary kindlings, put on one or two bits of saturated bricks, a little coal, then a few pieces of the brick and more coal, and there will be no trouble about the fire not burning.
Mrs. C. S. E., Mississippi.

To Care for a Range—To care for a range, wet a cloth with kerosene and go over it once a week. The same cloth can be used to wipe the top after each meal. Once a month go over the range with linseed-oil. It will never need blacking if cared for in this way. Worn-out stockings make good stove-rags.
Mrs. A. C., Indiana.

Convenient Calendar—My calendar is not as ornamental as it is useful, for it saves me much labor and time. It consists of a number of cards with numerals, 1, 2, 3, etc., corresponding to days of the month. On No. 7, for instance, I find "Send birthday letter to Helen D." 17: "Send missionary package to Mrs. A. by Mr. Jones (when he comes after supper)." 24: "Get Dad's things ready for the convention." 27: "Send check for \$123 to bank." 30: "Be sure to send for new suits for the boys." Then I have a list of the letters to be written on another card. Pictures and addresses of pretty patterns found in papers and magazines and to be sent for are on another. Recipes for making pickles, cakes, etc., on another. Lists of goods to be purchased in the local stores or sent for to the cities are on another, and so my calendar grows and is a joy forever, as it saves me time and worry.
Mrs. A. D. L., South Dakota.

If you desire to mend a broken dish or any kind of chinaware, and no cement or glue is at hand, an excellent substitute is white enamel paint. With a small brush coat the broken edges lightly with paint, press them together tightly, then set the dish aside for several hours to allow the paint to dry.
Mrs. E. V. C., Washington.

Recipe for Mending Cooking-Kettles—Talk soft putty, and fill the hole, and make smooth, and then put it in the oven or where it will get thoroughly dry. It will mend any kind of kettle or dish. I have used this for several years and know it is good.
Mrs. E. V. C., Washington.

Cleaning White Paint—Mix whiting and warm water to form a paste. Dip a clean flannel rag into the mixture, and rub the paint lightly. Thoroughly rinse with cold water, and the white paint will come out like new.
Mrs. J. A. D., Nebraska.

Stand on Wheels—I find one of my greatest conveniences a stand on wheels or casters. It was easily made, but the steps and strength that it saves makes it invaluable. Take an ordinary washstand or small parlor table, and bore a hole in the bottom of each leg, large enough to insert a caster. Around the edges of the top strips of wood about one inch in width should be fastened to prevent any articles from slipping off. The whole might then be painted a desirable shade. It is so easily pushed that it takes but little strength to move it from the dining-room to the kitchen, even though it be loaded with dishes. Of course, there are numerous other uses, but only the housewife who has one can know them.
Mrs. H. T., Indiana.

Pickling Recipes, Old and New

By Helen A. Syman

Piccalilli—One peck of green tomatoes, one dozen green peppers, one quart of onions, one ounce of whole cloves, one ounce of mustard-seed, two quarts of vinegar and two pounds of brown sugar. Slice tomatoes and peppers, sprinkle with salt, and let them stand overnight. In the morning, drain off the liquid, chop onions, mix all together, and let simmer for an hour.

Pickled Onions—Make a brine of boiling-hot water and salt; pour it over small button onions while boiling-hot. Let them stand twenty-four hours, then pack into quart glass jars, allowing two long red-hot peppers and six whole cloves to each jar of onions. Pour boiling white-wine vinegar into the jar of onions, fill to overflowing, and seal tight. These are fine and will keep for years.

Watermelon Pickles—Pare five pounds of rind, and cut it into desired sizes. Boil until tender, and drain well. Make a syrup of three pounds of sugar, one pint of vinegar, one-half ounce of cloves and one ounce of cinnamon. Pour this, scalding-hot, over the rinds. Let it stand twenty-four hours, then drain and reheat the liquid, and again cover the rinds. Repeat this process three times, and then place in jars, and seal as you do any fruit.

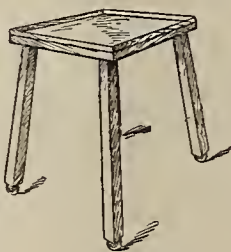
Sweet Pickled Prunes—Pick over, wash and soak four pounds of large prunes for

twenty-four hours, then steam for twenty minutes. Boil together for ten minutes two pounds of sugar, one pint of vinegar, one ounce, each, of whole cloves and stick cinnamon and one-fourth ounce of ginger. Add the prunes, simmer very gently until tender, then can and seal.

Ripe-Tomato Pickles—Take six pounds of ripe tomatoes, add three pounds of sugar and one quart of vinegar. Boil together fifteen minutes. Spice to suit the taste with cloves and vinegar.

Chopped Pickle—To one peck of green tomatoes add three quarts of onions and two quarts of peppers. Chop all fine, separately, and mix, adding three cupfuls of salt. Let them stand overnight, and in the morning drain well. Add half a pound of mustard-seed, two tablespoonfuls of ground allspice, two of ground cloves and one cupful of grated horseradish. Pour over it three quarts of boiling vinegar. Put in jars, and seal tight.

Pickled Cucumbers—Wash and wipe six hundred small cucumbers and two quarts of peppers. Put in tub with one cupful of salt. Heat to the boiling-point three gallons of cider vinegar and three pints of water. Add a quarter of a pound, each, of whole cloves, whole allspice and stick cinnamon and two ounces of white mustard-seed. Pour over pickles.



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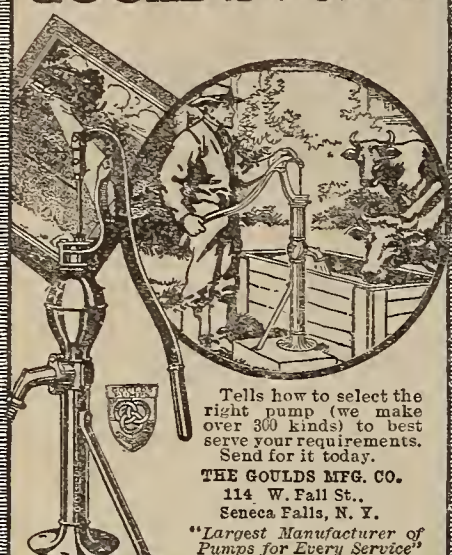
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ESTABLISHED 1877

SATURDAY, SEPTEMBER 14, 1912



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With the Editor

OUR own Captain Smith says in a recent market letter, "one acre of corn in the silo is worth ten acres of stalks." And if anyone in these United States knows, it is Captain Smith. He is a feeder from Feedersville. He weighs all his feed because it pays to know the weights. He feeds for profits, and not for fun. And the fact that he practises what he preaches is proven by the work I saw him at when last I visited his farm near Sioux City, Iowa. He was building a silo—reinforced concrete—over forty feet high, and something like thirty in diameter. It wasn't quite as big as the Colosseum at Rome, but it would make more silage. And the Captain had the corn not only to fill it, but to fill another of the same size which he still had to erect.

Now, if one acre in the silo is worth ten in the stalk, Iowa in January is a more mournful sight than the Desert of Sahara. For the Desert of Sahara is a waste, but Nature, not man, does the wasting. But in Iowa—and all through the corn belt—the great fields of dry stalks stretch away mile after mile in a man-made waste of feed that ought to be turned to food.

And it might be by effort on the part of the corn-belt farmers. I don't suppose there are hands enough in the corn-belt States to cut the corn, shock it and husk it from the stalk as is done in those regions where it is a secondary crop. But because a man can plant, tend and grow more corn than he can shock, husk and house as fodder is no reason for this awful waste.

When we thought the silo a good thing for the dairy farmer only, there was no wonder at the failure of the well-to-do corn-raiser to build siloes. He didn't want to go into dairying. But the silo is now known to be good for the feeder of cattle or sheep as well as the dairyman. Captain Smith is a beef-producer, not a dairyman. He took four hundred Hereford calves last year, which he bought in the sand-hills of Nebraska, and fed them so successfully that a car-load of them took second prize in the biggest division at the International Stock Show in Chicago.

These steers had not even been curried. They came out of the Captain's feed-lot just as they stood. He shipped them in for sale at the yards without any frills or extra care, expecting them to go to the packers. The commission firm to which he shipped thought so well of them that it put them in the show—and they took second. Another car-load from the same shipment, and from Captain Smith's four hundred, took third. One steer took a prize in the individual steer competition. Other car-lots took prizes at the Sioux City fair. And they had all been fed for profit, and not for show. Five or six cents a pound was all these prize-winning steers had cost their owner when they went to the International. So you see the Captain is some feeder. If he thinks so well of the silo, it will pay men who are not quite so sure of their knowledge of the cattle business to look into the matter.

THE fact is that the silo nearly doubles the capacity of a small farm to carry stock. Silage is good for cattle, either feeders or dairy stock. It is good for horses. It is good for hogs—especially if it has peas or beans in it. It is good for hens. It is good for sheep. It ought to be the basis of the feeding operations of every corn-raiser. The slowness of farmers in building siloes is one of the best illustrations in the world of the waste that comes from blind following of precedent.

Of course, farmers are not the only mossbacks—though they are sometimes awful mossbacks. But there are others. Some millionaires—like Mr. H. C. Frick, for instance—are in the same class. I spent a few days recently in the coke region in the vicinity of Connelsville, Pennsylvania. There I saw a sight that is still more mournful than the stalk-fields of Iowa. I saw literally thousands of coke-ovens so made as to waste all the good there is in coal, except the coke. Mr. Frick wastes the coal of western Pennsylvania by means of the beehive coke-oven. This ingenious, wasting machine roasts coal, sending out great clouds of smoke and gas, and radiating enough heat to turn all the wheels in a dozen Pittsburghs, and all the gas and its contents, and all the heat is wasted. Moreover, the coal is destroyed, never to be replaced, and the air poisoned and contaminated by the smoke and gas.

Now this smoke, gas and heat are each and all of them worth money. I was told that a chemical company had offered to put in good ovens, take the coke company's coal and burn it for nothing, if allowed to keep for itself the by-products of the smoke and gas. In effete Europe the beehive coke-oven is unknown. Out of the vapors from the making of coke is obtained by good ovens nitrogen for fertilizers, coal-tar and many other valuable things.

But did the coke company accept the offer of the chemical company? No more than the corn-belt farmers heed suggestions to build siloes. "We are interested in coke, and nothing but coke," replied the coke company. "We are doing pretty well as we are, thank you! Whose business is it if we are satisfied, or if we waste our own coal?"

And so the smoke rolls on over the otherwise green hills of Pennsylvania! Aside from making the country look and smell like a branch of the infernal regions, and destroying millions of tons yearly of the fuel which I am persuaded God put in the earth for the human race, rather than for Mr. Frick's coal and coke company, it isn't anyone's business.

Now millionaires may afford criminal silliness like this, but farmers can't. And the corn-stalk loss from lack of siloes in Iowa, Illinois, Indiana, Missouri, Kentucky, Kansas, Nebraska and South Dakota is probably equal to the coal loss in the coke industry in Pennsylvania and West Virginia. The farmers are interested in corn. They know that in the form of silage the corn will all be eaten up, but they don't act on their knowledge. They are doing pretty well as they are. So they go on from year to year wasting, wasting, wasting. And this in the face of the fact that all users of siloes believe in them.

Silage is not a balanced ration. It is rich in fats, carbohydrates and starch, but is lacking in protein. Stock fed on it need something else to balance the feed up. Something like soy-beans, for instance. These are easily grown in the corn belt as a grain crop. Or, if the farmer prefers to keep on with his present rotation, he can buy cottonseed-meal or oil-meal or some other concentrate. This will add richness to the manure, and make the farm richer. The farm that imports feed is always a good farm—if it feeds up all its own roughage.

Silage is made with machinery. The silo simplifies the labor problem. Of course, if everybody at once began feeding all the corn in the form of silage, it would glut the market with something, perhaps—but is there any danger of that? Why, in the dairy regions of Wisconsin, even, the silo is found on scarcely half the farms! Verily, large bodies move slowly.

Robert L. Smith

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FARM AND FIRESIDE



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Vol. XXXV. No. 25

Springfield, Ohio, September 14, 1912

PUBLISHED
BI-WEEKLY

Out of sixty White Leghorn hens trap-nested at the Maryland Experiment Station only five laid two hundred eggs per year or over. All of these five laid their first eggs in November. Of those which laid less than one hundred eggs a year, only 3.7 per cent. laid in November, while nearly half began laying in January. One hen made her best record when three years old. Thirteen did best their second year, and all the rest did best during their first laying season. Moral: If you can't trap-nest your hens, watch the pullets that lay early in the fall, and breed from them. Sell all which begin laying as late as January. And don't keep three-year-olds.

Artificial Stimulation of Growth

IT IS reported that Doctor Gibson of Edinburgh has by the addition of thyroid extract to a boy's diet caused him to grow seven inches in height in six months. The boy's health is said not to have been impaired in the least. Such stories are not to be accepted as facts in the absence of exact proof, but this account is thought-provoking. What causes growth, anyhow? It is the power, possessed in youth, of assimilating more food than is required by the upkeep of the body. Probably it is at bottom a matter of cell-stimulation through nervous force. It is quite thinkable that some artificial means may sometime be found for producing such stimulation. Perhaps Doctor Gibson has really found such a stimulant in thyroid extract.

The interest which stockmen, breeders and poultrymen would feel in such a discovery is plain. If by feeding thyroid extract to young animals they could double their rate of growth without injuring their quality, the process might add to profits. To be sure, no growth can be made except through the assimilation of feeds, but rapid growth makes profits by cutting down the time between "crops" of animals.

Even the rumor is interesting. The thyroid gland is the source of thyroid extract, and is situated near the top of the windpipe. It has no duct, and its function is uncertain. All these ductless glands are being studied diligently now, and it is from a similar one that adrenalin, the greatest astringent known to surgery, is derived. Dr. Gibson's alleged discovery is less incredible because of the fact that thyroid extract has been used in the treatment of goiter, and has been known to stimulate growth in cretins and dwarfs. The new thing is its use to carry growth beyond the normal, and at so astonishing a rate. Whether or not it can be produced cheaply is an interesting question. Here may be a problem for the synthetic chemist.

Prevention of Hail-Storms

EXPERIMENTS are being made in France for the purpose of testing the statement that, if the electricity is drawn from storm-clouds by good and adequate conductors, hailstones will not form. If they do not form, they cannot fall. The "protection" is in the form of very large copper rods, the higher the better, each rod ending in a sheaf of copper blades with keen points. The theory is that these points attract the electricity, and the rods ground it. Church-steeple, high towers and other high objects are utilized for the support of the rods. It occurs to us that the grain-elevators which are found along every railway-track in our own grain regions might be used. One in every town in a region well supplied with railways would about fill the French requirements. The fact that electricity is a powerful factor in all weather phenomena is generally accepted, and the treatment of this matter by the French government under scientific advice takes it out of the realm of the absurd or negligible. A big lightning-rod in every town would be a cheap form of hail insurance.

"Drained" Lands of the Everglades

WE HAVE been asked a great many questions as to whether or not the lands now in process of drainage in the Everglades of Florida are safe investments for prospective home-makers. We have advised our readers to wait until the lands are ready for the plow before investing. Frankly, we have had doubts as to the success of the project. Many engineers have all along maintained that the slope from Lake Okeechobee to the ocean is not sufficient to carry off the water which the State and private drainage projects contemplate drawing off. These engineers say that most of the land involved can be drained by pumping, which under present conditions is impracticable, and by no other method. It is also urged that the shores of Florida's great peninsula are gradually rising and that the problem will from decade to decade get more difficult. And now comes that high authority, the *Engineering News*, with a powerful attack on the whole project. It makes the statement that the State of Florida is proceeding without any sufficient knowledge of the matter, and that no lands should be sold until after

Russia may be competing with America in cotton one of these days. It is estimated that there is enough territory in Russian Turkestan to supply the Russian market with cotton and leave some for export. If that be true and if they carry their ideas into effect, America will not have so smooth sailing. The foreign nations say our cotton prices are too high. They propose to find out in a most practical way.

The average price of cement in the United States last year was eighty-nine cents per barrel. It is said that this low price has forced many manufacturers of the commodity into bankruptcy.

Demonstration and Experiment

THE experiment work of the stations has already by many years outrun the demonstration of the things discovered. A man cannot be blamed if he does not put into effect an agricultural truth of which he merely reads. He knows that his conditions may be quite different from those described. What a man reads of he may or may not have faith in. What he sees is more convincing. The farmers about Sioux City, Iowa, had been told and told again of the varieties of winter wheat which were adapted to their conditions, but it took a field successfully grown near a mill where many could see it to inspire them to the actual change from spring wheat to winter wheat. Better methods of corn-growing and cotton-growing were preached to the farmers of the South for decades, but when Dr. S. A. Knapp began sending his demonstrators to get men into the actual work of growing these crops under scientific conditions, the truth "took" and better methods began to be adopted, and

are spreading. Demonstration is what we need now, rather than research. Not that research should stop, but unless it can be supplemented by field demonstrations where we can all see them, it might about as well do so. Therefore, this new activity in demonstration farms and county and other local demonstration workers is welcomed as a good thing. Among these, the Ohio movement is interesting. The experiment station at Wooster, in connection with the Bureau of Plant Industry at Washington, has appointed a State leader—Mr. L. H. Goddard of the Wooster Station—and authorized him to act with any county in the State in the way of placing a county agent in any county which will come up to the requirements—which are easy of fulfillment. This ought to mean the actual working out of a lot of field demonstrations right before the farmers' faces and eyes. If it brings demonstrations by the farmers' own hands, it will be successful—otherwise not. We think it will do this.

Apple-Growing in the South Seas

PEOPLE bitten by the apple-bug—and most Americans seem to be—may well take down their trustworthy atlases and look for Tasmania. Older people will remember it as Van Dieman's Land. It lies south of the continent of Australia, and is a fine apple country. It also is in the throes of an apple boom. There are now over twenty thousand acres in apples in the island, and plans now laid contemplate increasing the orchard acreage to thirty thousand. The net profits from a Tasmanian orchard in full bearing average about \$150 per acre per year. Land may be obtained from the government for \$2.40 per acre. A well-managed orchard will begin to give returns the fifth year. When the trees are three years old, the orchard is valued at about \$300 per acre, and old orchards sell for a thousand dollars an acre. Almost a million bushels were exported last year, and the output will be much greater this year. Midsummer there is in January. The "foreign market" will not belong to us exclusively, by any means.

Five Indications of a Farmer's Prosperity

As Heard by the Rural Mail-Carrier

1. The whistling of the hired man.
2. The droning hum of the cream-separator.
3. The contented grunting of hogs.
4. The cackling of hens.
5. The chug-chug of the gasoline-engine.

Let us have more of these sounds.

the drainage plans have been submitted to a commission of competent engineers. People who see great volumes of water flowing out through the canals already cut may be tempted to trust their eyes rather than the computations of disinterested engineers, but this is scarcely the part of wisdom. The wise men will wait for more knowledge, and for actual establishment of conditions making cultivation possible.

Made-to-Order Rubber

EVERY owner of a motor-car, and every man who wants one but hesitates at the cost of tires (and that includes pretty nearly everybody!), will be interested in the fact that German and British chemists seem to have solved the problem of making rubber. As everyone knows, our present supply comes from trees grown in the tropics. The invention of the automobile has caused such a demand for it that the price has risen to a height which makes every rubber article expensive. These chemists have found out how to make it—of as good a quality as that made by Mother Nature in the sap of the tree. Opinions differ as to the possible cheapness of this "home-made" or "synthetic" rubber. The learned doctors who have invented the process declare that it can be produced of quite as good a quality as the commercial product for sixty cents a pound, with a possibility of reduction to twenty-four cents. Those who have stock in tropical rubber plantations should not smile. They should remember the fate of the indigo planters. Indigo used to be made from the indigo-plant, and fortunes were acquired in indigo plantations. One day, however, a German Herr Professor put some chemicals together and made synthetic indigo. The plantations went out of business. Fortunes were lost. But the world was the better for cheaper indigo.

So it may be with rubber. So it probably will be. We farmers will be the better for the change if it comes; for much of synthetic rubber is starch, and the starch is derived from the humble potato.

Celery on \$1,000 Land

By George M. Chapin



SOMEWHERE in this broad land of ours there may be acres richer and with greater productive possibilities than those that form the Sanford celery delta along the St. John's River in middle Florida, but if there are such, they have yet to be discovered and made useful. Nowhere else have the results of intensive and intelligent cultivation of responsive acres been more satisfactory, from the dollars and cents viewpoint, and nowhere have they been more uniformly remunerative year after year.

The discovery of hidden wealth in these Sanford lands was due to two things. One was the series of freezes in the winter of 1894-95, which satisfied the old-timers that citrus culture in the northern middle part of the State was too uncertain to be a safe venture and that other and less tender crops must be found. Florida orange-growers get very nervous when the thermometer ranges near the twenty-six-degree mark (above zero), but the celeryman sleeps easily until the temperature shows signs of dropping below eighteen degrees, a very rare occurrence anywhere in the State.

The second thing was the discovery that underlying this section is an apparently inexhaustible body of water that may be reached from seventy-five to one hundred and twenty-five feet below the surface, which under natural pressure rises through artesian wells several feet above the surface, available for irrigation and for all domestic purposes. Vegetables require moisture often when the natural rainfall of Florida does not supply it, and artificial irrigation makes good the demand.

The soil here is a dark sandy loam, mellow and easily worked. By capillary attraction it carries moisture in uniform distribution, like a sponge, available for plant-growth. From two to four feet below the surface is an impervious substratum of clay that holds water like a rubber blanket. The climate is tempered by the St. John's River and by numerous little lakes and streams, which control the temperature, winter and summer, within surprisingly small limits. This combination of natural conditions—a rich soil and the possibility of controlling at all seasons the amount of contained moisture, together with a generally favorable climate,—gives this section advantages that energetic men have seized upon and improved, and within the last dozen years they have made Sanford one of the richest cities per capita in the entire country.

Something more than ten thousand acres here are overlaid by this artesian water-supply. Less than one half this acreage has been put under cultivation, but the cultivated area is being extended rapidly.

The raw land is held from \$125 to \$200 an acre, and it is sold readily at these prices with the guaranty that flowing water may be had through driven wells.

Above the initial cost of the land, which is usually covered by a heavy growth of palmetto, pine trees and other vegetation, the cost of clearing varies from \$50 to \$80 an acre, an average close to \$60. The soil is easily worked, but lettuce and celery cannot be profitably cultivated the first season after clearing, better not until the third year. The natural soil has an acidity which must be worked out by cultivation and by lime and good fertilizers. Therefore, the wise planter, following the advice and experience of those who have made success here, will plant Irish potatoes, sweet potatoes, cabbage and other vegetables that will thrive on new ground. From any of these crops he may net in the first and second seasons a large share of the original cost of the land.

The System Drains as Well as Irrigates the Land

Some growers insist that it is not possible to grow vegetables with any certainty of success anywhere in Florida without artificial irrigation. This is undoubtedly an exaggerated claim, but it is a fact that the sub-irrigation system is used universally in this section to secure the best results. The unit of this system is five acres. For each field of this size an artesian well is driven and is cased with a two or a two and one-half inch iron pipe. The well is capped to control the flow of water. The natural flow from a well of this size is ten thousand gallons an hour, and the pressure carries the water about four feet above the surface. The discharge is carried into a main supply-pipe four inches in diameter, running through the center of the field and with a slant that carries the water by gravitation to the drains at the lower end of the field. Tapping the main at intervals of twenty feet is a series of lateral tiles, three inches in diameter, dropping gradually to the opposite sides of the field. These laterals are not cemented, but are laid with palmetto fiber over the joints to keep out the dirt and to allow the seeping of the water into the soil. There is an arrangement of valves and cut-offs so that the water may be applied to any part of the field or kept from those parts where it is not needed.

Even more important, if possible, than the irrigation value of the system is its usefulness for draining the land. In case of heavy rain, the supply of water is cut off at the well, and the rainfall in the soil runs off through the laterals into the drains. So perfectly does

this system perform its drainage duties that it is possible to go on the land and work with plow or hoe within an hour after a heavy downfall of rain. The system is an essential feature in working Sanford lands.

The cost of this irrigation-drainage system, including the well, is one hundred dollars an acre. In exceptional cases it may run slightly above this figure. The cost of the land, therefore, ready for planting lettuce and celery is from \$300 to \$325 an acre, and an expenditure of two years of labor, but the value of the crops raised during these two years may make the land a source of income almost from the start.

Land ready and proved up is held and sold at \$1,000 an acre and more. It is at least supposable that the buyers, being experienced planters, knew the worth of what they bought.

High-Priced Land Means Intensive Culture

In the preparation of lettuce and celery for the ground, the seed is planted in beds, and the young plants are transferred later to the open fields. Lettuce-seed is brought from the North, most of it from Boston and eastern Massachusetts. It is put into the beds early in September. The young plants are transferred to the fields some sixty days later, and the harvest usually extends through the first three weeks of December. The plants are set in rows thirty inches apart and six inches apart in the rows, although some planters put them fifteen inches apart both ways over the land.

Lettuce is packed for the market in hampers, or wooden baskets, each holding four dozen heads. There is objection to this form of package, however, on account of its inconvenient shape for shipping in car-load lots and because of the difficulty of inspecting the contents. A square or rectangular crate will probably be used in later seasons.

Based upon careful observations extending over a series of years, the average yield of lettuce to the acre here is four hundred and fifty hampers. The average cost of raising and marketing, including fertilizer, labor and hampers, is \$100 an acre, or a little more than twenty-five cents a package. The average price received per hamper f. o. b. Sanford is \$1.25, leaving approximately one dollar a hamper. These figures, it must be understood, apply to the operations of experienced growers, who employ the most modern methods and get the best results. The averages for the entire community would reduce the net profits somewhat. Celery-seed is brought from France. It is put into

the beds late in August or in September and is ready for transplanting sixty to ninety days later. Where the same land is used successively for lettuce and celery, and this is the usual and most economical method, the latter crop is planted between the rows of lettuce then maturing. The latter crop being harvested, leaves the land to the celery. This is ready for the harvest, under ordinary conditions, from the middle of February to the latter part of March and sometimes into April. It is packed in crates. Sanford growers have been using three sizes of these packages, but uniformity is being urged. The size most in favor is eight by twenty by twenty-seven inches.

The crates are made up in the field from lumber sawed to dimension, and the celery is taken from the ground and packed direct, after being stripped—the outer leaves being pulled off. It is then ready for market. The only grading is according to the size of the head or bunch, three, four, six and eight dozens to the crate. The sizes most favored in the market and consequently bringing the highest prices are the four and six dozens to the crate.

Of course, the proper bleaching of celery is essential to its market value. Formerly the method of bleaching was to draw the soil up around the stalks ten days or two weeks before marketing. It was found, however, that this rotted the heart of the stalk and therefore was impracticable. The plan now adopted is to place boards, one foot wide, on each side of the row, holding them in place by stakes driven into the ground. Second-cut cypress, one inch thick, is used for the purpose. The original cost of the lumber necessary to bleach one acre of celery is about \$250. The same lumber is used for eight to ten years, and often several times each season. Within the last two years experiments have been made with heavy water-proofed paper in rolls. This material is much more economical and produces good results.

The average production per acre at Sanford by the most successful growers is eight hundred crates of celery. The average cost of raising and marketing is thirty



Paper is now used successfully in bleaching the celery

cents a crate, or not far from \$250 an acre. The average price received at Sanford during a number of successful years is \$1.25 a crate, leaving a net profit of \$760 an acre.

Fertilizing is an important element in this cultivation. Usually three tons of commercial fertilizer are used for each acre, at a cost slightly above \$100. From one half to two thirds of this is applied to the land at the beginning of the season while it is being prepared for lettuce. The rest is put in with the planting and cultivation of the celery. The most important elements required are ammonia, potash and phosphoric acid, the potash especially to increase the crispness and carrying qualities of the celery.

The total freight shipments of lettuce and celery for the season of 1911 were 1,576 car-loads, and the gross returns averaged \$720 an acre. These shipments were in addition to those forwarded by express. As a rule, celery is the more profitable crop.

The Florida Vegetable-Growers' Association is a local organization formed in 1909 for the mutual benefit and protection of the growers at and near Sanford, with the expectation that its membership will expand to wider limits. About sixty per cent. of the vegetable acreage of the section is included in its membership and rather more than sixty per cent. of the growers themselves. The marketing of Sanford crops has been regulated and improved through the agency of this association. Shipping facilities have been bettered, and the settlement of claims for loss and damage in shipping have been simplified and hastened.

Sanford growers sell their products through consignment to brokers in outside markets, on direct order from dealers in other cities and States, or direct to buyers at Sanford, who pay cash on delivery of the goods at the shipping platform. Through the association every member may inform himself daily of current prices quoted in all the principal markets of the country; he may know how many car-loads of vegetables are en route to each of these cities and when they are due to arrive. From this and other information he may determine for himself the value of his own product and regulate his selling accordingly.

Each Grower Learns the Market Prices Each Day

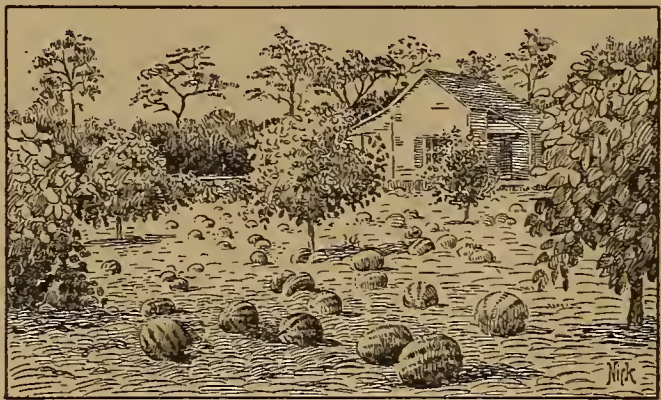
The larger proportion of the lettuce and celery of last season was sold direct to the buyers at Sanford, and the advantages of the plan and the large absence of risk are making it grow in favor. The product goes forward in refrigerator-cars by fast freight, occupying forty-eight hours to New York and corresponding time to other cities. For the icing of these cars the entire output of a large plant is used during the active shipping season. The express rate to New York, so claim the shippers, is altogether too high. It is seventy-eight cents a crate.

Reference has been made in this article to the growing of celery and lettuce only in this Sanford section. The cultivation and harvesting of these crops occupies only seven months of the year. But don't think for one moment that these enterprising farmers stop with this.

There are other crops with which many Sanford growers follow their celery, which are raised with much less effort and with no additional fertilizer. Some of these and their average per-acre selling production are: cucumbers, \$100 to \$300; sweet potatoes, \$100 to \$150; eggplant, \$100 to \$300; Irish potatoes, \$150; tomatoes, \$250. Corn produces as high as fifty bushels to the acre and sells for ninety cents. Cauliflower, cabbage and several other crops might be added to the list of big payers. Some remarkable successes have been made through intensive cultivation of several different crops. One grower had an acre of peppers under canvas last season. From this acre he sold more than \$3,600 worth of the spicy vegetable, and his net profit was seventy-six per cent. of the gross income.

But there is another side. There are lean years as well as fat ones here. There have been seasons when some of these crops failed. There is no section, north

or south, where the farmer never meets reverses, and Sanford is no exception to this experience. However, with a growing season that covers twelve months every year, there is no excuse for a complete profitless year on Sanford lands. The experience of the men who have been living on these farms proves this statement, the truth of which, perhaps, might otherwise be doubted.



Oranges and citrons fail when there is frost



Boards, for bleaching, were more satisfactory than dirt

What the Everglades Mean to the Farmer

By Day Allen Willey

WHENEVER any big plan to aid the nation is suggested, there are always doubters as to its success. The moistening of the desert by irrigation, the development of water-power, all have had their critics, as well as have the land-drainage schemes in the South and Southwest. In the case of irrigation, the belief spread that the water would soak through the sandy soil, and it would not produce crops, but the 1,300,000 acres now producing food staples, tilled by 25,000 farmers, show the fallacy of this belief. The same feeling has been shown to the idea of draining the millions of acres in South Florida. How could water be removed from land apparently as flat as a western prairie and that land be turned into farms without pumping machinery, which would make the reclamation an impossibility because of the expense?

Ignorance of the true conditions is usually the cause of the attacks on such developments. As to the success of irrigation in creating new farm-lands, ignorance no longer exists, but it still remains as it has remained for years in regard to the Everglades, because the knowledge of actual conditions is but little known.

The question as to whether the Everglades could be changed from waste land into land for farm homes was answered over twenty years ago. Capitalists who had built railways in dry portions of Florida had their engineers make an instrumental



An Everglades canning-factory with cultivated land in the background

"From an analysis of the existing conditions it is apparent that in order to reclaim the Everglades as a whole it is necessary to control the level of the water in Lake Okeechobee. A narrow strip along the east edge may be reclaimed in pieces by building a substantial embankment on the western border and cutting drainage ditches into the small streams that flow into the Atlantic Ocean, but this plan would not provide for the reclamation of that part of the Everglades adjacent to Lake Okeechobee, which is considered to be the richest and best portion. In order to reclaim this part, it must be protected from the overflow of Okeechobee. So long as this lake receives the drainage from a watershed seven and a half times its own area, it will continue to inundate the Everglades at each recurring high water, unless some plan is devised to control the discharge."

Water for the Dry Season Must Be Stored in the Lake

"Since the elevation of Lake Okeechobee is twenty and one-half feet above sea-level, it is evident that by digging canals of sufficient capacity to tide-water it can be practically drained of all its water, or its surface can be lowered to any height desired. In order to preserve the fertility of the Everglades and make them productive, enough water must be stored in Lake Okeechobee to supply the deficiency during the dry period, and the excess must be removed in such a way as to prevent damage by overflow. This can be accomplished by a system of outlet canals, provided at the upper end with gates to regulate the flow of water in them. The best location for these canals depends upon the cost of their construction, and the character of the land along their course to be reclaimed, and their value as a means of transportation. The proper size to make these canals will be determined by the amount of water to be discharged by them and the most economical cross-section of canal to excavate."

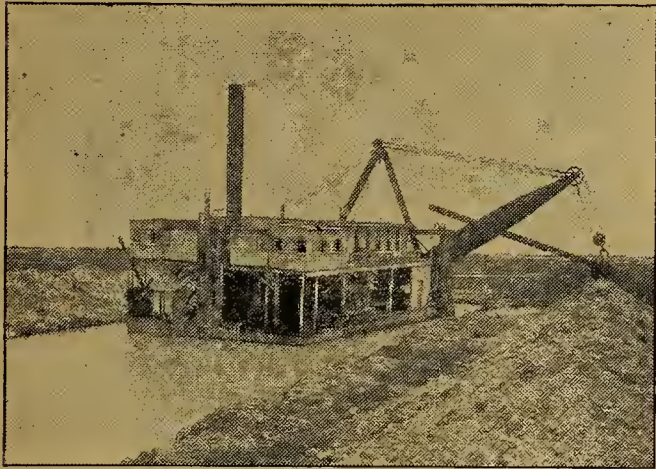
Based on this report, the State let contracts to a Baltimore dredging company and work was begun. The first canal recently completed from the lake to the New River has a current of three miles an hour, as proved by gages. Its dimensions are the same as the four other main canals being completed, sixty miles in length, sixty to seventy-five feet in width and eight feet deep—large enough to float one-thousand-ton barges. Entering the three hundred miles of main channels will be six hundred miles of ditches, now being excavated by motor-driven machinery which cut twelve hundred feet of trench, six feet deep and four feet wide, in a day of ten hours.

It should be added that the company excavating the State canals had their engineers go over the routes

surveyed by Broward and Wright, and these were verified before the excavation, which is now being performed by a fleet of ten modern dredges, was begun. The contracting company made sure that natural drainage would free 4,000,000 acres from the water, the rock rims that retain the floods being cut through to a level that allows all the flood-water to flow into the sea through the canals that are below the earth surface of the Everglades.

The State of Florida, however, is not the only worker for drainage. Several independent companies have bought lands still under water and are excavating canals and ditches independently of the State project. One of the companies, called the Fellsmere, is preparing 115,000 acres for farming. The engineers of this company examined the tract and decided it could be drained naturally. Curiously enough, the stockholders of the land company also control one of the largest contracting concerns in New York for building railways, bridges and buildings. They are using their own dredges for excavating and are successfully making ditches with their own mechanism.

To get a true idea of the soil in connection with his pure-food work, Dr. H. W. Wiley went into the Everglades to make an examination of the depths, the composition and the chemical properties of the soil for fertility. He used solid-steel rods in measuring the various depths and hollow



One of the rock-cutting dredges at work

examination by surveys, from the lake whose flood-waters submerge the land to rivers flowing into the sea. The report stated that the incline from the lake was enough for natural drainage. The capitalists saw a chance to obtain a large area of South Florida at a trifling cost if they could secure the submerged land from the State, if they kept the reports secret. If made public, the buyers would have to pay a much higher price. The reports were withheld while lobbyists worked with the State government to obtain the land, but failed.

Engineers Say the Water Will Flow Off by Gravity

The fact that water covering the Everglades would flow off by gravity was finally revealed to Napoleon Bonaparte Broward, a civil engineer, scientist and explorer. By measurements he found a slight incline of the land toward the sea and Gulf of Mexico from the lake. Broward was so sure of the fact that he was appointed by the State Drainage Commission to excavate the two canals in the eastern section of the State to extend from the rim to two of the tidal rivers. Engineer Broward designed and had his men construct the dredges, but before the canals were completed his death occurred.

This pioneer work, however, led the State Land Commission to believe that the land could be freed from the waters. To have an authoritative investigation, Broward had been elected governor for his interest in the drainage plan. Governor Jennings, who succeeded Governor Broward, was a firm believer in Broward's idea. He suggested that the State ask the government to send an engineer to resurvey routes of the canals proposed. For two years Engineer J. O. Wright and his corps of assistants ran their lines and made measurements, the report of which was made to Secretary Wilson of the Department of Agriculture. The sections of the report bearing on the ability to naturally drain the land are these: "Immediately north of the Everglades lies Lake Okeechobee, the largest fresh-water lake wholly within the United States except Lake Michigan. At mean level it contains an area of 468,860 acres. At high stage its surface is about twenty and one-half feet above tide level, and at low stage about nineteen. The lake is quite shallow, the deepest places not exceeding twenty-two feet at low water, and the average depth being about twelve feet. As the lake rises in the rainy season, its waters inundate this flat country, and the shore line moves out in places several miles, so that the area of the lake is much larger at high than at low water."



The Lauderdale Canal—the Everglades on either side

rods for taking specimens of soil for analysis. His conclusions in his own words are these: "Passing through Lake Okeechobee, we come to the largest body of muck lands in the world. The northern shores of Lake Okeechobee are fringed with a very little muck, but as you approach the southern border the muck deposits become deep and wide, until finally they merge into those vast deposits of muck which form the northern border of the Everglades. The exact extent southward of this body of muck is not known, but it has been accurately surveyed for a distance of about fifty miles and found to be of excellent character throughout the whole of this distance."

Dr. Wiley Examines the Florida Soils

"The origin of the muck soil is, of course, vegetable matter. There are no data for estimating the length of time required for the formation of these muck deposits. In regard to the depth of the soil, it varies from the merest covering at the edges near the sand to from fifteen to sixteen feet in its deepest portions. The greater part of the muck lands will vary from three to six feet in depth, while along the Okeechobee the average depth is much greater. The soil varies in color from almost jet black to black brown. The subsoil lying under the muck in the upper region around Kissimmee is pure sand. The Okeechobee muck, however, is underlaid with a thick stratum of shell-marl containing pebbles very rich in phosphorus, and this rests upon a coralline or limestone formation. This limestone formation is very porous in structure, full of cavities of varying sizes, capable of being ground with extreme ease and thus prepared for application to the soil for fertilizer."

"The muck soils of Florida are markedly deficient in mineral constituents. The presence, therefore, of so large a body of limestone, mingled with phosphatic pebbles, is a matter of no mean importance when the agricultural future of these lands is considered. A few of these pebbles were picked up at the head-waters of the Caloosahatchee and examined for phosphoric acid. The mean percentage of phosphoric acid found was .697. This region had not been prospected at all for phosphate deposits, but it would not be surprising if they were discovered to exist here in great abundance."

On some of the drained land already three crops in a season have matured successively, such as celery, tomatoes and potatoes, to be crated, placed on barges, [CONCLUDED ON PAGE 15]



A field of February squash on drained land



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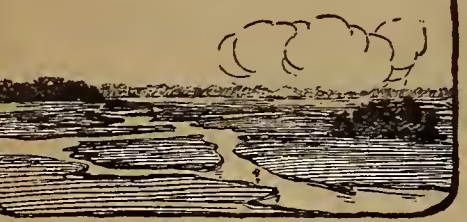
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Crops and Soils

Advantages of Barn Husking

WE BEGIN husking corn in the field as soon as it is dry enough in the fall, and continue until enough has been husked to start us on the winter. The remainder is drawn to the barn and husked out there during the winter. We employ this latter method with increasing favor, and each year finds us leaving a larger amount for winter husking in the barn. It is well, however, to do some husking in the field during nice weather, as this gives a reserve in both the fodder and husked corn in case bad weather should delay husking for a short period during winter.

Though quite low in feeding value, we assign corn-fodder a prominent place in our winter feeding stuff. Highly carbonaceous, it is an economic feed where a wide nutritive ratio is desired, as with full-grown male breeding animals or the "scrub" team that is roughed through the winter and requires only a maintenance ration. Where very succulent feeds are used, corn-fodder, as a roughage, adds consistency to the manure, making it much easier to handle. For these reasons we believe corn-fodder well worth rigid methods of preservation.

Weathering from the time of cutting to that of husking greatly impairs the fodder around the outside of the corn-shock. When husked in the field, this injured fodder is mingled with that on the inside of the shock and then set up in a fodder-shock, where a large amount of the bright, good fodder comes on the outside of the shock, exposed to the deleterious effects of the weather until hauled in. When the corn-shock is drawn to the barn and husked, this latter loss is obviated.

When we husk in the barn, the fodder is not bundled unless, as is seldom the case, we wish to hoist it into the mow, but is set up loosely on the barn floor. If husked in the field, this fodder would all have to be bundled and the shocks tied, requiring a considerable expenditure for twine, besides the additional labor.

Husking in the field, even with the most painstaking methods, means the loss of considerable fodder through shattering of the leaves, the part we most wish to preserve. After several loads have been husked on a tight barn floor, the fragments may be raked together and placed in the feed-troughs, thus practically eliminating this source of loss.

In throwing the corn up in piles as it is husked in the field, considerable corn will be lost through shelling. In barn husking, this shelled corn will be where it can be swept together and collected for feed.

For several years we have been constructing a temporary crib on the barn floor for winter husking. The loads of corn were drawn along one side of this and, as husked, the ears were tossed directly into the crib. Most of our feeding is done in or near the barn, so the convenience of a frequently replenished supply of corn so near at hand is worth much. Furthermore, the major portion of the labor attendant upon hauling and cribbing corn is eliminated.

Barn husking, moreover, allows the farmer to devote more of his time in the fall to ditching and such work as is impossible to perform in the winter, and then, when cold weather makes outside work disagreeable, the corn husking may be done inside the warm barn.

By thus more equably distributing the farm work throughout the year, much trouble is obviated by retaining the farm help during the winter period, when otherwise it would be unavailable. P. C. GROSE, Ohio.

The Cedar Waxwing

IT WAS with much pleasure, this last May, that I witnessed one of the most tender and loving examples of bird affection imaginable. It was the kissing performance of a pair of waxwings. Not once or twice, but many times did they cross their open beaks in that loving manner, showing that birds, too, have the same method of expressing themselves to each other as do we humans. Outside of tame pigeons, I have never seen it indulged in to such an extent as did these two birds. But charity for each other, and according to good authority even for the young and helpless birds of other species, are the strong traits of the waxwing. I have never observed an act of selfishness among them. The wonder is that they get enough to eat, for each bird is always passing what it receives to its neighbor as they sit perched side by side on a limb.

Waxwings usually remain in flocks and so are quite common wherever found, for rarely will they separate and drift far from each other.

That they enjoy the first ripe fruit we cannot deny; but where Russian mulberries are planted that will ripen with the cultivated berries, they will forsake the latter and feed entirely upon the former. They, like all birds, prefer the wild fruit. Wild



cherries, sour-gum and cedar-berries, in season, form their diet; in winter, when berries fail them, they subsist upon frozen apples that still hang upon the trees. They also feed, to some extent, upon insects; and their young, like the nestlings of other birds, are fed on an almost exclusive diet of insects. H. W. WEISGERBER.

Indiana Spring Wheat

A READER in the northern part of Indiana who does quite a little grain farming asks whether spring wheat can be grown there successfully or not.

Purdue Station, as well as stations of the neighboring States, have experimented more or less extensively in the production of spring wheat, and especially some years ago when there was a considerable amount of spring wheat grown in this part of the country. The results have invariably shown that, on the average, spring wheat is not nearly as profitable as winter wheat wherever the latter can be grown, and this territory includes all of the State of Indiana and the country extending at least one hundred miles farther north, even including the larger portions of the province of Ontario in Canada. At the Purdue Experiment Station, Lafayette, Indiana, new tests of a few of the leading varieties of spring wheat have been carried on during the last few years and comparisons made with winter wheat under similar conditions. On an average, the spring wheat has yielded barely half of the yields secured from winter wheat, even though we have had some bad seasons for the latter on account of extreme winter-killing.

The chief reason why winter wheat does better than spring wheat in this territory lies in the fact that the climate is too warm for the latter during the ripening period, which is thereby shortened, causing low yields and usually shriveled grain. Winter wheat in this territory ripens about the first of July, while spring wheat is two weeks later, and during this period there is always a considerable amount of hot weather. There is this also to be said, that winter wheat, making a part of its growth in the fall and starting early in the spring, has a longer season of development than spring wheat could possibly have, unless it matured still later, and that would be no advantage.

There may be conditions in some parts of northern Indiana and southern Michigan where spring wheat will average better than winter wheat because of soil conditions which make it hard for winter wheat to withstand the winter. In these cases the ground should be plowed in the fall, left rough through the winter and the seed-bed prepared in the spring by disking and harrowing. The seed should be sown just as early as possible.

Among the varieties which seem most likely to succeed are the Marvel, Minnesota No. 169 Blue Stem and Minnesota No. 163 Fife. A. T. WIANCKO.

RIGHT HOME

Doctor Recommends Postum from Personal Test

No one is better able to realize the injurious action of *caffeine*—the drug in coffee—on the heart, than the doctor. Tea is just as harmful as coffee because it, too, contains the drug *caffeine*.

When the doctor himself has been relieved by simply leaving off coffee and using Postum, he can refer with full conviction to his own case.

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"I wish to add my testimony in regard to that excellent preparation—Postum. I have had functional or nervous heart trouble for over 15 years, and a part of the time was unable to attend to my business.

"I was a moderate user of coffee and did not think drinking it hurt me. But on stopping it and using Postum instead, my heart has got all right, and I ascribe it to the change from coffee to Postum.

"I am prescribing it now in cases of sickness, especially when coffee does not agree, or affects the heart, nerves or stomach.

"When made right it has a much better flavour than coffee, and is a vital sustainer of the system. I shall continue to recommend it to our people, and I have my own case to refer to." Name given by Postum Co., Battle Creek, Mich. Read the little book, "The Road to Wellville," in pkgs. "There's a reason."

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

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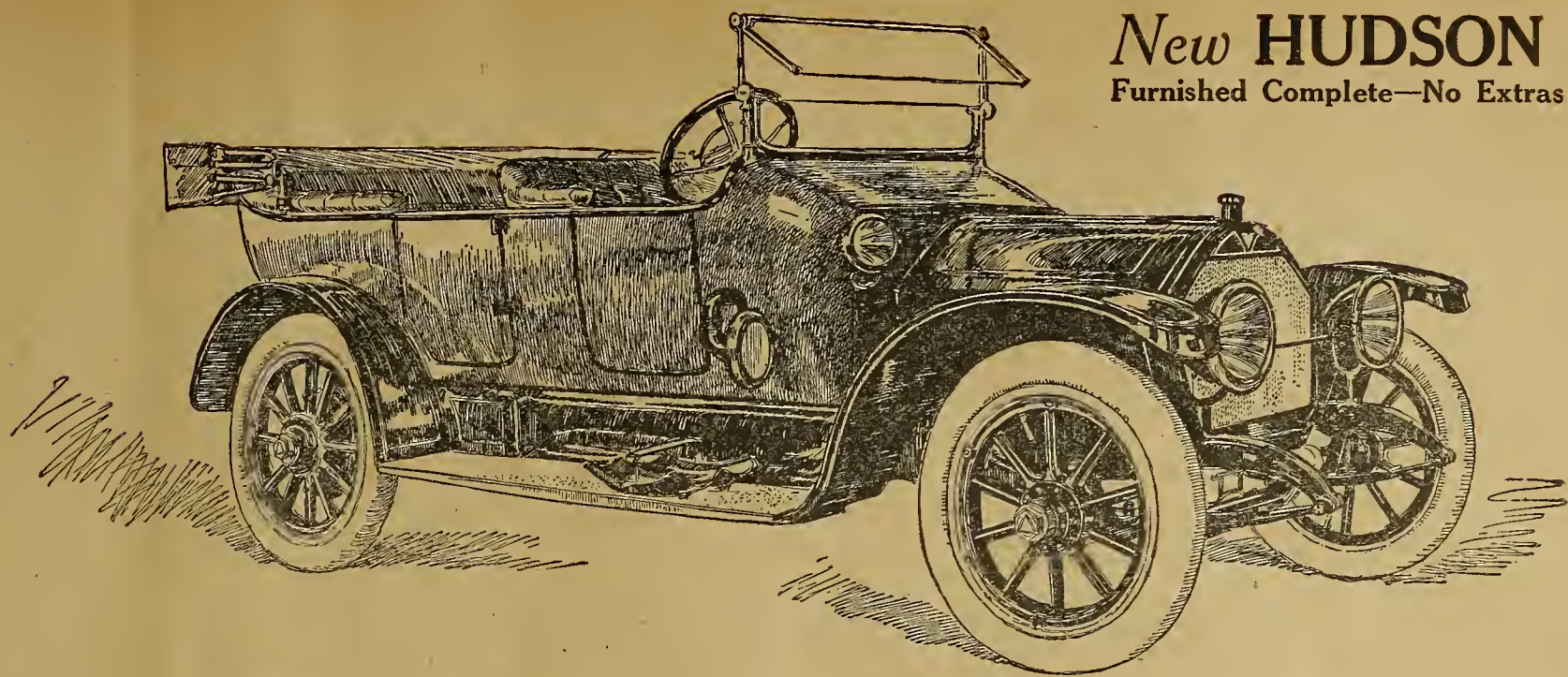
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Imagine what strides, what advancement, men of such experience are bound to offer in the car which all have joined in perfecting.

It is all in the one car. It expresses as nearly the limit of four-cylinder construction as has been reached.

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Even if you are impatient to have a new car now, don't you think it better to see the *New HUDSON "37"* before you buy?

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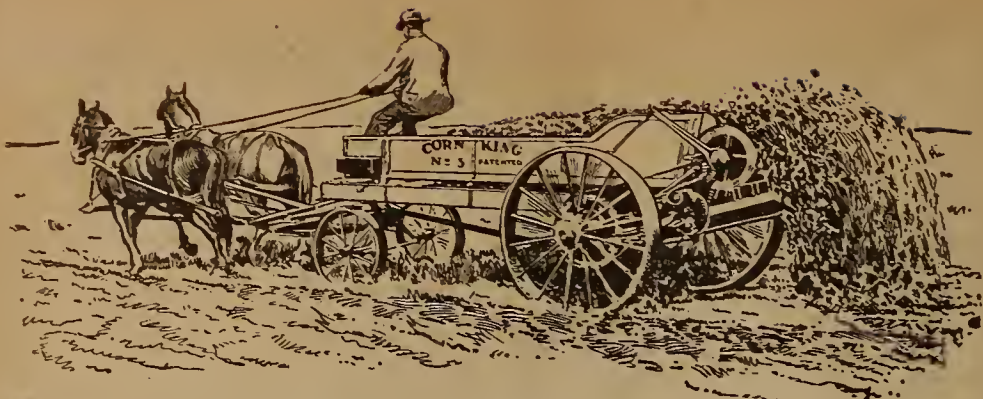
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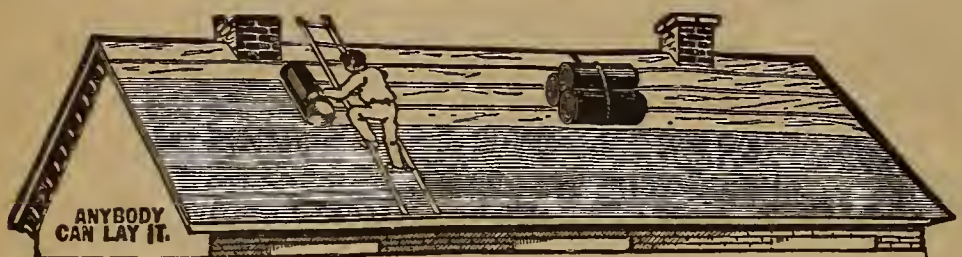
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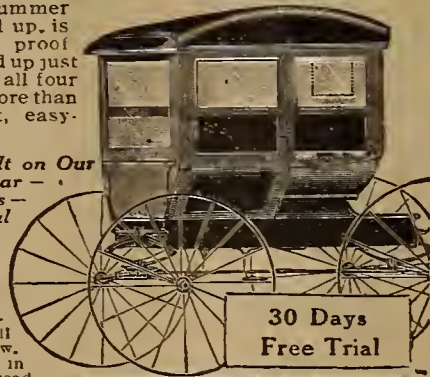
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Garden and Orchard

Planning the Orchard

THERE are farmers all over the eastern part of this country, but outside of already established fruit regions, who might profitably engage in orcharding on a modest commercial scale, but who hesitate to do so because of an insufficient grasp of the problems involved in such a venture. Those who have never had any occasion to plan or plant an orchard themselves, having perhaps even known of some ill-planned and half-hearted orchard venture in their own neighborhood, are naturally inclined to shun what looks like a risky enterprise.

Much of the printed advice in regard to orcharding is of a too general nature to be of real practical value to a beginner, and the very multiplicity of systems advocated in regard to setting out of trees tends to confuse rather than help him.

It is with a view to be of service to such that I make the following suggestions, which are based on my own experience and which I hope may be the means of persuading a few to take a new grip upon the problems that they must deal with to make life in the country more worth while, more profitable and thereby more attractive to themselves and those about them. Especially do I invite the young men to look into the possibilities that are open to them. I do not aim to give a recipe to be followed blindly. Common sense will tell the reader where he must use his own judgment.

Size of Orchard

Before one can intelligently set out an orchard one must consider various questions that involve a study of market requirements, labor problems and actual orchard operating; to make sure that he builds up a piece of mechanism that will operate at the critical time with the least possible friction and do the work for which it is planned.

Suppose the reader has set his mind on having a peach-orchard. At first thought the size of the orchard would seem to be a matter of no practical consequence. But it is well to plan large enough so that labor can be used to advantage and so that your enterprise will be worth while and always seem large enough to command your very best effort.

Five acres, I would say, is as small as you should plan your orchard; eight or ten acres will be better perhaps. That will be enough, however, on which to learn your orchard A B C. After you have learned that you will be prepared to spread out, if you like.

Selecting the Profitable Varieties

Naturally the next consideration is to decide upon what kind of peaches you shall plant, how many of each variety and what must be your guide in making a proper selection.

These are really vital questions, and much of your later success depends on your choice now. Neither can you afford to delay considering the problems that have to do with the marketing operations, because if you disregard your market now it will certainly be a cause of considerable annoyance and direct loss later on, that might easily have been avoided by a little forethought at planting-time.

The chief reasons for having a number of varieties are to assure a constant supply for your market for a period of from six to eight weeks, if possible, and to make good use of the special labor which you will have to employ.

The man who can ship to his market regularly every day, or nearly so, throughout the whole shipping season is sure to make an impression on his customers and create a demand for his own particular brand of goods, which uniformly sell at a higher price, while the intermittent or occasional shipper is apt to be overlooked and has to be satisfied with second attention. The difference in dollars and cents is considerable.

No two varieties should lap over, as you may find it impossible to get the help to cope with such a situation as would result. If you have men enough to go over, say, two hundred and fifty trees a day comfortably, and you should find that the next following variety of two hundred and fifty trees needs picking before you have finished with the former, you would not only be overtaxed in the orchard, but confusion would result in your packing-house, with all kinds of costly consequences. If you do not pick the fruit when it is fit, thinking that you may leave it on the trees a few days longer, you invite even more serious trouble, and you will surely hear from your selling end when your overripe peaches reach their destination. Hence the need of having the varieties in proper succession.

Now as to which of the varieties should be used, that is a local question and must be worked out by each one according to his location. In making up a list, your experiment stations will be able to give you good advice, both as to which varieties are suitable to your condition as well as to their commercial value. I do not doubt that they can also

give you appropriate ripening dates. From four to six varieties should be enough.

Here in Dutchess County, New York, and on my own place, I have found the following very satisfactory:

For early: *Carmen*—picking from August 10 to August 19.

For medium early: *Champion*—picking from August 21 to September 3.

For main crop: *E'berta*—picking from September 5 to September 14.

For medium late: *Stevens*—picking from September 18 to September 27.

For late: *Salway*—picking from October 4 to October 12.

These figures are from my record of 1910, but they vary only a few days from year to year.

The reader will notice that the first three varieties fit together beautifully. After *E'berta* is gone, we get a few days' grace, which come very handy at this time to get the corn cut and to pick early apples. After *Stevens*, we have a few days to pick Greenings. If one has considerable winter apples, one might omit planting the very late peaches altogether. My own chief reliance is on the first three varieties mentioned, which provide us with peaches practically every day for a full month.

The quantity of each kind to be planted is also somewhat of a local problem, except that it is safe to say that *E'berta* will be your main crop peach and you should have rather more of these. My planting of the varieties mentioned is about: twenty per cent. early, twenty per cent. medium early, forty per cent. main crop, twenty per cent. late.

Enough has been said to indicate to the prospective orchardist along what lines he should make himself familiar with his problem. By putting himself on solid ground through a wise choice of varieties and by anticipating later problems as much as that may be possible, he may next proceed to the actual laying out of the orchard.

E. O. MUESER.

Making Turnip Kraut

TO MAKE kraut, I use a cutter that I made myself. Such cutters are not on the market. My grandfather brought one over with him from the old country in 1865, and it is now the property of my uncle. I made mine

just like it. Anyone can make one. Take a saw-cutter that is adjustable (they cost about twenty-five cents). Then take an old hand-saw blade, and cut out a piece about five eighths of an inch wide; then file both edges sharp. Take a cold chisel, and cut up the saw-blade piece in three corner sections (see Fig. 1). Then you have the knives ready to insert in the saw-cutter.

Then drive the small blades (A) in the wood just in front of the knife (B). Drive the small end in the wood so each blade will stand with the sharp edge against the sharp edge of the large knife and just to the top of knife, as shown in Fig. 3. The small knives should be about one-eighth inch long, as shown in Fig. 2.

In cutting the kraut, the turnip will be cut in strings about three-sixteenths inch square and the length of the turnip. If you have large turnips, the kraut will look like cabbage kraut. Select the largest turnips. Wash and pare them. Then take the turnip in the hand, and work the same as you would to make slaw on the cutter.

Then put some nice cabbage-leaves in the bottom of a barrel. Put one-half bushel of kraut in it, and sprinkle in about one handful of salt. Then beat down solid with a maul. Repeat until you have made the amount you desire. Then put a heavy weight on it, and in one or two days it will work just as cabbage kraut does. If it fails to work, pour on fresh water till it is covered, and it will work in less than ten hours.

This kraut can be prepared for the table just the same as cabbage kraut. It makes a fine dish boiled with the rinds of side meat.

J. S. DORSEY.

We have fastened small rakes on behind the wheel-hoes. They are made of No. 8 wire, the wires being eight inches long and fastened into a block of wood five by one by one and one-half inches. This affair loosens the ground after the hoes cut a slice of ground. This extra working over keeps the soil in a fine, loose condition that conserves moisture during dry spells.

Stumps in Pastures

IT is a matter of importance to go over the pastures and chop off low down, or dig up all sharp (or dull) snags, stumps, etc. Horse or cattle, running in frolic or fright, are liable to fall upon such, or inflict dangerous injury to hoof or limb. The finest horse my grandfather had—the pet of the whole family—fell upon just such a small stump, because of smooth shoes on a frosty turf, and injured himself so severely that he died in an hour. Several others which were allowed to run to water or pasture along a steep hillside, fell on frozen ground and were killed. Horses cost too much for the farmer to be careless. CLIFFORD E. DAVIS.

GARDENING
BY T. GREINER

The Rake for Weeding

TO PUT the finishing touches on the garden, make it look neat and tidy, and at the same time kill small or just starting weeds by the thousands and perhaps hundreds of thousands, a good sharp steel rake is about the most serviceable tool. I use it a few days or a week after the ground among the wider planted vegetables, such as staked tomatoes, cabbages, eggplants, and the like, has been stirred up and the ground pulverized with the cultivator or hoe. In the hot summer and early-fall days, weeds spring up quick and grow fast. Let us have the least little rain or sprinkling, just enough to moisten the very surface, and in a few days we see the ground covered with these small weed-plants. As long as the ground is still mellow, or loose on top, the rake will do good and quick work. If the surface has become hard or packed, then, of course, hoe or cultivator must be used first. Among staked tomatoes, eggplants, cabbages and trellised lima beans, we can easily keep the patch free from weeds and attractive looking by the use of the rake alone.

No Weeds Are Wanted

Tall weeds will now make their appearance among tomatoes growing without support. They are an eyesore to me when gathering the fruit, and I always stop in that occupation long enough to pull up the conspicuous weeds I find among the vines. In that respect, the staked tomatoes have a great advantage. They are so easily kept clean. We can go through the rows with horse cultivator, running it quite close to the stalks, until the very end of the season. And in a small patch we can keep all weeds down with little effort by using the garden-rake.

Raising Good Cabbages

A reader complains that for some years he has been unable to grow good heads of cabbages on account of a disease causing the leaves, beginning with the lower ones, to turn yellow and drop off. Some relief may be found for this and various other cabbage troubles, I think, for another year at least, in applying a good dressing of lime to the garden this fall. A still better way would be to secure, next year, good, healthy plants and set them in a new patch, preferably a rich piece of recently turned clover-sod. Cabbages are gross feeders, and it takes manure or fertilizers, of the latter especially potash (muriate), to produce big heads and a big crop. On most farms such a piece of land can easily be set apart to raise such a valuable crop as late cabbages.

Plant-Growing a Business

The nice chance of making some pocket-money by growing cabbage, celery and perhaps other vegetable plants on a suburban lot, which I recently mentioned in these columns, has apparently made some of our readers open their eyes. But it was very far from my intention to induce anyone to give up his regular business which affords him a living and buy a place of two or more acres in order to be able to grow such plants for a livelihood. "Could a man be sure of making at least eight hundred dollars from one acre of plants?" I am asked. Nothing sure about anything, surely not about the returns from any farm or garden crop. There are professional plant-growers all over the land, and they have to meet competition as in anything else. In rural neighborhoods, or in the suburbs, however, there is often a limited demand for good plants at prices far above the advertised rates of the professionals. If you have an eighth of an acre, more or less, of spare land, it may be well to try, carefully and on a small scale at first, what you can get out of a bed of vegetable-plants. That is a safe proposition. The other is not.

Seed Sweet Corn Worth Looking After

It's easy to save seed-corn of the early sweet varieties, such as the Golden Bantam, now by general consent the most popular of that class of corn. It ripens early, and gets dead ripe long before the end of the season. But what you should do is to save some of the biggest ears on stalks that have two or three good ears. Mark these stalks by tying a string or ribbon on each ear selected so that every one in the family gathering corn for the table understands that those ears are not to be used. When dead ripe, braid the ears together, and hang them up in a dry place out of the reach of rats, mice, squirrels or other lovers of corn. We handle our mid-season varieties, the Early Champion, Metropolitan, etc., in the same way. They also get ripe fairly early, and the kernels get hard and beyond the danger of injury by early frosts. In our climate we have to take great pains if we want to have seed-corn of the late sorts (such as Evergreen, which is still our favorite) that can be relied on for seed. We

must plant early. We must gather the ears (taken from most productive stalks) before they are touched by frost, and we must take special pains to dry them so that they will neither mold nor be exposed to frost before they are thoroughly dry. But in view of the prices we have to pay every spring for seed sweet corn, and of the fact that the seed-corn we buy so often fails to show strong vitality, or to a large percentage will fail to grow altogether, it pays us well to go to all the trouble necessary to grow and save our own supply. And if there is any surplus, the neighbors are always ready to take it and pay the price.

The man who buys stock in the average rubber plantation seldom gets enough rubber or dividends to buy imaginary tires for his imaginary auto.

It is wise to believe in good-luck signs because of the hope and pleasant expectancy they bring. Bad-luck signs are valueless and meaningless.

The professors say that education means a drawing out of the mind. When the time comes give the boys a half-day every week to educate the gophers and woodchucks out of their holes before they begin their annual depredations on the crops.

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The Steel Shoe Man

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And I have done it by simply applying common sense to the greatest health problem that confronts the working man to-day—I have created a shoe that is comfortable, dry, sanitary and economical. Therefore, I know of no better way to extend the reputation and sales of these wonderful shoes than to honestly and fairly offer them to every working man on this free, open, home try-on-plan—because they are just what I say of them, they are honest, dependable under every test, and once you have them on your feet, you will never again work in another kind of shoe.

Every Pair Saves You From \$10 to \$20

Because, each pair will outlast three to six or even eight pairs of best quality all-leather workshoes. There are no repairs—

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

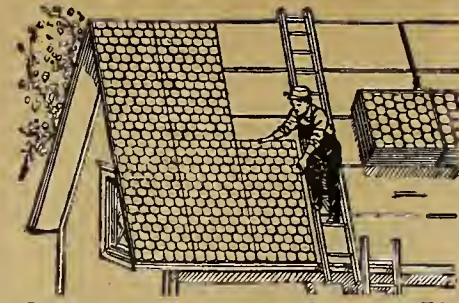
No Broken Down Arches

You know from your own experience that as soon as the leather sole becomes wet and slightly worn, the arch gives way and flattens out—your instep is immediately endangered and the very life and service of your foot is imperiled. The steel arch cannot break or get out of shape—it is a continuous, elastic, restful support, always remaining exactly the same during the entire life of the shoe.

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Farm Notes

The Nose-Bag and Wisdom

By G. Henry



OW this is no argument that a horse knows more than a man, but—

A farmer sent his hired man to town with a load of hay. The hired man was provided with nose-bags to feed oats to his team. One of the bags had straps so short that when the man fastened them the horse's nose was shoved too deep down into the bag, and the horse (without check-rein, thank goodness!) deliberately hooked the end of the wagon-tongue into the mouth of the bag, and tore the bag loose from his head, and ate the oats from the ground.

The straps on the second nose-bag were so long that the hungry horse could not get at the oats at all, so he kept tossing his head, thus throwing the oats into his open mouth. Here are two horses which knew more than their driver.

A man was plowing. He had fastened the reins across his shoulders in the usual fashion, leaving both hands free to guide the plow. But the reins were all skew-gee on his shoulders, and kept pulling his horses "gee," whilst he yelled "haw"—and this man reported to the owner of the horses: "Them horses are dum fools!"

All right! When a collar hurts, the average horse winces upon being asked to throw his weight into the collar. Later, he becomes what we foolishly call balky, perhaps—and finally he fights like an army mule when someone tries to put a collar on him. That's knowing something!

I am personally acquainted with a horse which simply hates a certain blacksmith who once upon a time nailed a bad-fitting pair of shoes to his feet and inflicted sore feet upon this horse for all time to come.

There are men in this world of ours cruel enough to fasten a horse with a heavy rope in a stall and then beat the horse WITH A CHAIN. But such men have "bad luck," for forever afterward if the horse which has received this sort of discipline hears a chain rattle he will bolt in terror, whether hitched to a mowing-machine, a carriage

with children in it or a heavy wagon loaded with produce. This is either horse sense or horse revenge.

A fine horse doesn't know so much as an inferior dog, but a horse has some sense. Perhaps if we would remember this we would get along better with the motive power on the farm. Some wise men resort to flattery to gain the good will of horses.

The farmer whose wife is a good house-keeper should always emulate her in the manner of his stablekeeping.

There is no wisdom in toiling hard to keep up a home for which one fails to do his part to make it joyous and homelike.

Use of Scales in Feeding

THE best and practically the only way one can tell whether his animals are making proper gains or not is by the use of scales.

A friend of mine who gave me the data used here tried this on a colt last year. The colt weighed 130 pounds when foaled and was weighed every week for the first six months, with the following results: Three and three-fourths pounds average daily gain first month, three and one-fourth pounds average daily gain second month, three pounds average daily gain third and fourth months, two and one-half pounds average daily gain the fifth and sixth months.

At ten months the colt weighed 870 pounds and had made a daily gain of about two and one-fourth pounds, which is very good for a grade Percheron.

The colt was allowed all the whole oats and bran it would clean up until five months old. Her mother was worked nearly every day, and the colt sucked four times a day from eight o'clock in the morning to five o'clock in the afternoon. At night both mare and colt were turned out to pasture.

The winter ration consisted of a mixture of five pounds of whole oats, two pounds of shelled corn, and five quarts of skim-milk daily. A small amount of silage and mixed hay for roughage were also fed.

From the observations made by this man it will be seen that the average farm colt should make a daily gain of at least two pounds per day. Also, that good colts can be raised when the mares are working. From previous experience in using scales in feeding, this farmer says that a colt should weigh at ten months one half of its weight at maturity.

W. A. DOPKE.

It Means Money to You

SECRETARY of State Knox, on January 23d. Scaled David Lubin, Delegate of the United States to the International Institute of Agriculture at Rome, Italy, that he could be absent from March 15th to May 1st, in order to attend the Southern Commercial Congress in Nashville, April 8th to 10th, and later hold a series of conferences in various States to explain the Raiffeisen system of cooperative rural credits that enables the peasant farmers of Germany to do a cooperative banking business of over \$1,600,000,000 a year. Mr. Lubin came, and his visit to America has resulted in unlimited enthusiasm on the part of all who have considered the merits of the banking system he recommends. When the system becomes effective in America, farming will be on a firmer and more encouraging basis.

EDITOR.

The Raiffeisen System is now being seriously considered by important organizations in the United States, and such consideration must ultimately lead to its adoption, if not in the precise mode in operation in Germany, then with some modifications to meet the needs of the American people.

There is ample warrant for this forecast in the facts before us. On the one hand we see the American people confronted by a new economic condition, a condition due to the merging of capital and of mental energy. Compare Trow's New York City Business Directory of forty years ago with one of to-day, and notice the difference in the ratio between firms and corporations; the increase in the number of corporations at the present day will be startling. Nor is this increase, as you know, confined to New York City, but it prevails throughout the United States.

What does it mean? It means that there has been a change—an evolutionary development, if you please—that has shifted, and is shifting, the economic status of all the people. Nor is this change merely a passing phase; it is no more a passing phase than is the change from the individual industrial system to the factory system. Experience has demonstrated that the merging of capital and of mental energy is as profitable in the commercial world as labor-saving machinery is in the industrial world.

The potent efficacy of this system of merging, of the trust, has been demonstrated conclusively; so conclusively that there is no room for any retreat from it. On the contrary, as it continues on, the tendency of the trust is toward the removal from its path of present crudities, and thus it is progressing onward by leaps and bounds toward its ultimate development.

"Stay! Stop! Dissolve!" are the protesting cries raised against this system; protesting cries raised by the consumer; protesting cries raised by the farmer. "The corporations, the mergers, the trusts, are

eating us up," they cry. "If they are to live and grow, we are doomed to perish. Therefore, let them die that we may live."

These protests are as idle as the wind. Any mere protest is as futile toward checking the onward course of this movement as it would be for a boy to stand on a railway track with extended arms to stop an express train rushing toward him at full speed.

Analyzing these two protests, the protest of the consumer and the protest of the farmer, we see that they may be traced back to one common cause: the lack of effective organization in the farming industry.

It is the product of the farm which, in the main, forms the stock in trade of the trust. Before the trust can dictate the price at which it will sell, it must first corner the goods, it must first obtain possession of the farmer's product, and on terms and at prices which will permit of the cornering. These terms and prices are rendered possible by the present ineffective and incomplete organization of the farmer, which leaves him defenseless against the inroads of the organized trust.

And thus the farmer is handicapped, and with him, of course, the consumer. It is, in short, a case of pressure; pressure exercised by the organized on the unorganized.

What is the remedy? Obviously the organized will by no means dissolve at the mere dictates of the unorganized. Therefore, in the defense of their interests, it becomes an imperative necessity for the American farmers to organize their industry, and to organize it effectively.

"But we are organized," say the farmers. "A large proportion of the fruit and dairy interests are organized, and large bodies of farmers have purchasing and marketing organizations of their own."

What European Organization Means

Well, let us see. Under the Raiffeisen System the farmers of Germany did a cooperative banking business, without mortgages, at an interest rate of five per cent. per annum and less, amounting to over one billion six hundred million dollars for the year 1909, and this under only one of the three great cooperative credit systems operating in that country. Can the American farmer point to any such showing? By no means! And right here is where the American farmer is weak, and where the European farmer is strong.

In the United States, so far as money is concerned, finance and commerce are organized and agriculture is unorganized, thus paving the way for the trusts in agricultural products. In Europe, on the other hand, cooperative agricultural credit is so strongly organized that it makes the cornering of the farmer's products, and consequently the dictating of prices, a practical impossibility.

Why? Because the Raiffeisen System of cooperative banking enables the European farmer to convert the potential dollars represented by his assets and his character into available, mobile dollars. It is the mobile dollar which counts, which is effective. The mobility of its dollar renders the trust the active and dominant factor in the United States; the immobility of the American farmer's potential dollar renders him the passive and dependent factor.

And so long as the American farmer is a passive and dependent factor, he cannot hope to profit by the incomplete cooperative methods he now employs. Whatever economies these may produce are neutralized so long as he does not free himself from the defect above indicated; they only serve as additional sources of revenue to be raked in by that arch croupier, the trust.

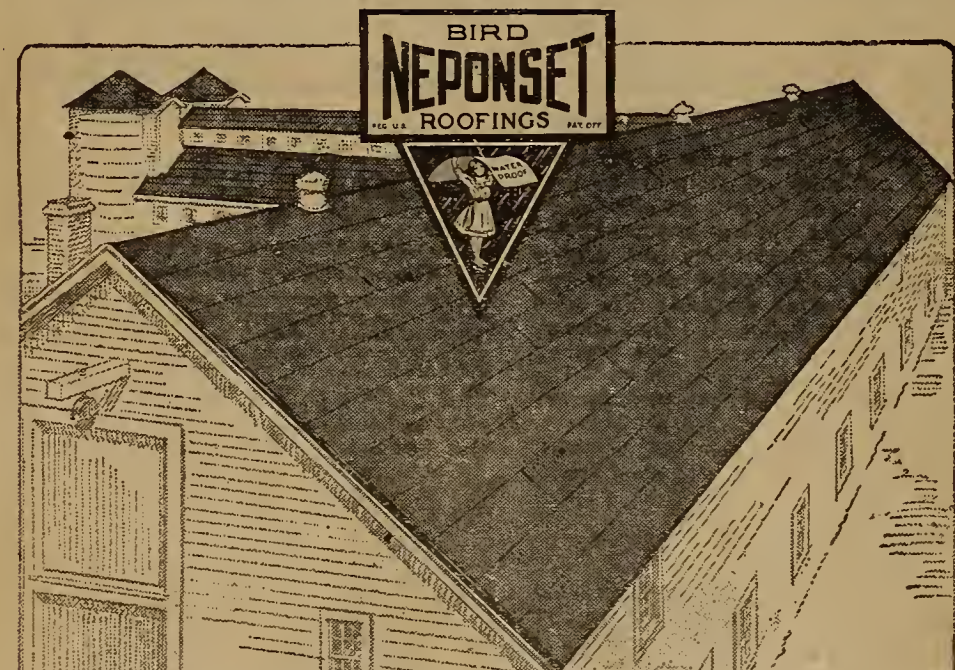
Of course, it will be understood that the success of cooperative banking associations implies the adoption of legislative measures which will render their operation effective. It also implies the rigid exclusion of any untrustworthy or unsound units.

And now, finally, let us ask the question: what of the assets and character of the American farmer? Has he the potential dollars available in his assets? Has he, in addition to this, the character, the standing, requisite to free these potential dollars and convert them by some such means as the Raiffeisen System into available dollars, into mobile dollars? Let us see!

It will be readily admitted that in character the American farmer stands as high as the merchant; and so far as his assets are concerned it will be seen that they are not lacking, for the census of the United States for 1910 values the farm property of the American farmer at \$40,991,449,090, and the value of his annual production now comes very close to \$10,000,000,000 a year.

We therefore see that the American farmer has an abundance of the raw material—character and assets—which, if placed in available form by some such mode as the Raiffeisen System, would render him a fighting entity in the field of economic combat; a fighting entity with sufficient power to effectively protect his interests, with sufficient power to enable him to forge ahead on progressive lines as a peer among the most progressive. When this shall be done it will establish that balance of power between the various factors in the economic life of the American people, which is essential to the welfare of a free and enlightened democracy.

DAVID LUBIN.



Not a Leak in 13 Years

John R. Tupper, now of Florence, Ala., built a lumber shed at Iowa City, 13 years ago, and roofed it with

NEPONSET PAROID ROOFING

This year he returned to Iowa City and saw the shed. This is what he says about it: "The building is now partly pulled down and the roof has sagged. There are low parts where the water stands after a rain, but the water evaporates without going through the roofing. No attention has been given to the repair of this roofing for 13 years, and still it does not leak."

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Live Stock and Dairy

Twenty Deer on Fifteen Acres

IN A half-developed hill country a few agricultural "side-lines" may mean the difference between farming at a loss or at a profit. Chalmer Roseberry, of Stella, Missouri, has half a dozen of these "side-lines," and the most unusual of them—deer farming—has in recent years proved the most remunerative.

There was no demand at all for deer in the Ozark hills when, a little over twenty years ago, as a boy of sixteen, Roseberry penned off one and one-half acres for a fawn which a neighbor gave him for a pet. The first fawns that the young deer farmer sold a few years later brought twenty dollars a pair; grown deer thirty dollars a pair. The demand for the animals for parks and circuses and country places recently has got far ahead of the supply, and Roseberry's common, or Virginia, White Tails are fetching fifty to sixty dollars for a pair of fawns; seventy-five to eighty-five for a pair of adults.

Because he always has regarded the deer as a merely incidental source of income, he has reserved only fifteen acres for them, and this will not conveniently support a herd of more than twenty or twenty-five. He has finally acquired enough confidence in the investment to propose now to increase the tract to forty acres and fence it with cement posts and woven wire.

The advantages of deer farming have been summed up by Roseberry in epigrammatic fashion:

"So far as feeding goes—since that's the question that seems to bother most folks



"Why, man, they're civilized!"

most—I'll tell you that a deer will eat mighty nearly anything that a goat will, except tin cans and paper. The greatest expense connected with the business is the cost of fencing. Attention? A deer requires less attention than any animal living, unless it's the 'Irish' goat or razor-back hog."

Part of the tract on the Roseberry farm is field, part of it timber-land. For winter pasturage he sows the field with wheat or rye; for winter roughage it is reserved in summer to grow cow-peas. The ear of corn apiece that Roseberry feeds his deer every day is not a matter of necessity so much as an evidence of interest in what he still regards as pets.

The secret of taming the animals is to take them from the does ten days after birth and feed them on cow's milk from a bottle for two or three weeks in a pen of poultry-netting before they are allowed to range again in a larger enclosure. This is the only really troublesome feature of the work; and it is necessary to insure that the animals don't grow up to become a terror to their neighborhood, as one old buck of Roseberry's did. Frightened at a passing traction-engine one day, the buck leaped a seven-foot picket-fence and had everyone taking to cover, and even the country school dismissed until a lasso artist came to the rescue. And the lasso artist confessed to having a pair of rather shaky knees for a while when the buck was charging.

The animals that are well tamed, however, are as docile as cattle.

"Tame?" one of Roseberry's hired hands used to say in answer to inquiries. "Why, man, they're civilized! Look here—"

And, haggling off a liberal hunk of plug-tobacco, he would offer it to one of the fawns, who would proceed to chew it up with much relish. CHARLES P. CUSHING.

I knew of a horse that was well started along the balking line when its owner found that there had been a short tack left in the collar. He hadn't noticed it when he bought it. The horse pulled a while, then gave up. It isn't always "orneriness" that makes them stand still.

A Need for Good Horses

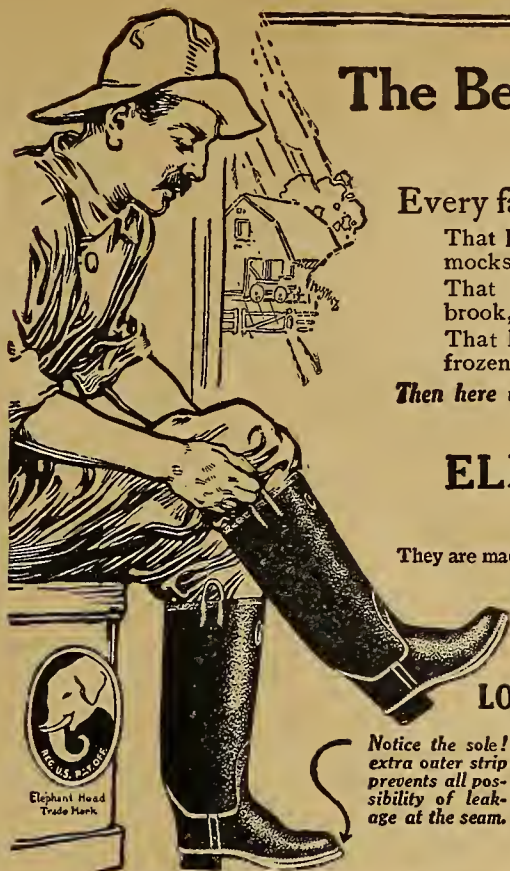
THE farmer who breeds or buys a lot of ewes does so primarily with a view to raising lambs and, in the second place, to converting the ewes, when they cease to be desirable as breeders, into mutton and wool.

He who owns cows uses them first for dairy and breeding purposes, and as soon as they cease profitably to "fill the bill" in those respects, converts them into beef, or sells them as they are.

But how often does the owner appear quite unable to see any use for the most valuable individual animal on his farm, possibly a well-bred mare? He sees no value in her other than as an item in his cultivating machinery. Possibly it may strike him that he would like a colt by her, but he often fears, through ignorance, to endanger her usefulness or her health if he puts her to the additional labors of maternity. He does not know that, if properly used, he adds to her value in both these respects. He has not studied the matter, perhaps.

If, however, after consulting his neighbors, he determines to try for a colt, he knows no better than to mate her with the nearest and cheapest stallion that comes handy, without paying any special attention to that stallion's breeding or fitness for crossing with his pet mare.

I remember when once upon a time I was standing at his stable-door in a small Illinois town, talking to a man who had several stallions, a well-appearing farmer



The Best Boot For the Farmer

Every farmer wants the rubber boot

That Fits Right, when he tramps over hummocks, or spades a ditch.

That will not leak when he has to wade a brook, or slosh through a low meadow. That keeps his feet warm, even in the cold, frozen yard at dawn.

Then here it is:

Woonsocket ELEPHANT HEAD Rubber Boots

They are made to fit any foot, just as carefully as a fine shoe. They are given extra reinforcement at all wearing points. Positively waterproof under the roughest kind of working conditions. Wade and tramp all day through brooks, mud and slush and still your feet are warm and dry. Lined with thick, warm, high grade wool.

LOOK FOR THE ELEPHANT HEAD

Back of every boot bearing this trademark is nearly half a century's boot making experience. Your dealer can supply you—order your pair today. Ask for Woonsockets.

WOONSOCKET RUBBER CO., Woonsocket, R. I.

The Scourge of Hog Cholera

cost the hog raiser millions last year. In their utter despair of being able to suggest remedies, the publishers of the farm press have thrown open their columns to free discussion of hog cholera, by the hog raisers themselves. Experience after experience only seems to prove the hopelessness of obtaining a cure. The only promise seems to be in preventives. Many testified that by use of tonics to build up the condition of their animals and powerful disinfectants they had prevented the disease, in some instances even when whole herds had been swept away in the immediate neighborhood. Such testimony was not uncommon last Fall in the farm papers.

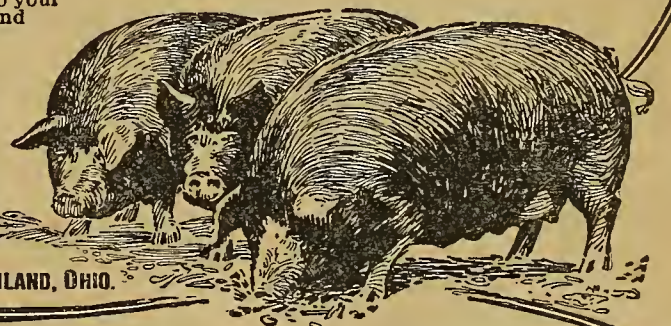
DR. HESS STOCK TONIC

gives tone to the entire hog system, acts gently on the bowels, helps the kidneys do their work in throwing off poisonous waste material, and it expels worms. And remember, many cases supposed to be cholera are only intestinal worms. **Dr. Hess Dip and Disinfectant** is a powerful germicide which, when sprinkled in the bedding, feeding places, and a little in the hog wallow and in the drinking water, will kill the germ and remove the cause of infection.

Our Proposition—Feed Dr. Hess Stock Tonic to your herd, disinfect the premises with Dr. Hess Dip and Disinfectant as directed (begin before your hogs are sick), and if your hogs die from cholera, every cent will be refunded. Secure the goods from your dealer whom you know. You can't ignore this proposition. We are reliable, have been doing business in your community for 20 years.

Dr. Hess Stock Tonic in 25-lb. pails costs you \$1.60, 100-lb. sacks, \$5.00. Except in Canada and extreme West and South. Only costs 8 cts. per month for the average hog. Dr. Hess Dip and Disinfectant is put up in 5-gallon cans. If your dealer can't supply you, write us.

DR. HESS & CLARK, ASHLAND, OHIO.



DR. HESS POULTRY PAN-A-CE-A is a tonic that overcomes the debilitating influence of moulting.

Tones up the egg organs, invigorates the older fowls, gets pullets ready for early laying. In fact, it makes healthy, thrifty poultry. Also cures gapes, cholera, roup, leg weakness and the like. Costs practically nothing. One extra egg pays for all the Pan-a-ce-a a hen eats for three months.

1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the extreme West

INSTANT LOUSE KILLER KILLS LICE

"Pittsburgh Perfect" Fence

Special Open Hearth wire containing *throughout its texture* a newly discovered ingredient that successfully resists the destructive influences of corrosion—that is the kind of wire now being used exclusively in the present-day "Pittsburgh Perfect" Fencing.

The surface of the wire is also heavily coated with pure zinc galvanizing, making a fence far superior to any other in *durability*—the most important feature to economical fence buying. "Pittsburgh Perfect" is the only fencing manufactured of wire made by this new (secret) process, and not a cent is added to its cost to you. Stay and strand wires,

Welded by Electricity

at every contact point, forms a *one-piece fabric* of unequalled strength, conforming perfectly to uneven ground without loss of full efficiency.

Every Rod Guaranteed Perfect

SEE YOUR DEALER—or write for catalogue fully illustrating and describing "Pittsburgh Perfect" Fences for every FIELD, FARM, RANCH, LAWN, CHICKEN, POULTRY and RABBIT YARD and GARDEN.

PITTSBURGH STEEL CO., PITTSBURGH, PA.

Makers of "Pittsburgh Perfect" Brands of Barbed Wire; Bright, Annealed and Galvanized Wire; Hard Spring Coil Wire; Twisted Cable Wire; Fence Staples; Poultry Netting Staples; Standard Wire Nails; Large Head Roofing Nails; "Pittsburgh Perfect" Fencing.

THE WELD THAT HELD

FROM DEBT TO \$20,000

Use **SHARPLES Tubular Cream Separator Exclusively**

That, and more, is what J. F. Armstrong & Sons, of Austintburg, Ohio, have done. Like other shrewd farmers, they have succeeded because they know profit is of far greater importance than first cost.

Like others making most money from dairying, the Armstrongs chose the Tubular in preference to all others because the Dairy Tubular contains no disks or other contraptions, has twice the skimming force of other separators, skims faster and twice as clean, and pays a profit no other can pay. Mr. Armstrong says:

"Austintburg, Ohio, May 29, 1912.
"The Sharples Tubular Separator has done fine work all the time."
"J. F. ARMSTRONG."

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Want a free trial? Want to exchange your present separator in part payment for a Tubular? You can do either. Get quick reply by asking for Catalog 112

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WEST CHESTER, PA. Branches: Chicago, Ill., San Francisco, Cal.; Portland, Ore.; Dallas, Tex., Toronto, Can.; Winnipeg, Can. Agencies Everywhere

DEATH TO HEAVES

NEWTON'S Heave, Cough, Distemper and Indigestion Cure

Put up in Screw Top Cans. Cures Heaves by correcting the cause, which is Chronic Indigestion. The original and only scientific remedy for Heaves. Sold by druggists for 22 years; used in veterinary practice over 30 years. One to three \$1.00 cans cures heaves. Money refunded if results are not satisfactory after using two cans.

Free booklet explains about the Wind, Throat, Stomach and Blood. A Grand Conditioner and Worm Expeller. Economical to use; dose is small. Safe for the colt, adult or mare in foal. \$1.00 per can at Dealers' or express prepaid.

THE NEWTON REMEDY CO., Toledo, Ohio.

MINERAL HEAVE REMEDY

In use over 50 years. CURES HEAVES

\$3 Package will cure any case or money refunded
\$1 Package cures ordinary cases.
Postpaid on receipt of price.
Agents Wanted
Write for descriptive booklet

Mineral Heave Remedy Co., 425 Fourth Ave., Pittsburg, Pa.

15 95 and Upward AMERICAN SEPARATOR

FREE TRIAL FULLY GUARANTEED. Easy running. Easily cleaned. Whether dairy is large or small, obtain our handsome free catalog. Address **BOX 1058 AMERICAN SEPARATOR CO. BAINBRIDGE, N. Y.**

Pratt's Poultry Regulator is a great help to moulting hens. Insures quick moult, vigorous health and plenty of winter eggs—25c, 50c, \$1.
"Money back if it fails."
Poultry Book FREE.
PRATT FOOD CO.
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It is to your advantage to mention Farm and Fireside in writing to advertisers. Farm and Fireside folks get the very best attention.

DE LAVAL CREAM SEPARATORS

USED EXCLUSIVELY BY 98% OF THE WORLD'S CREAMERIES

The only separator that is good enough for the creameryman is equally the best cream separator for the farmer to buy.

The De Laval Separator Co.
New York Chicago San Francisco

drove up with a nicely bred and impressive-looking Clydesdale mare hitched to the back of his wagon. While he and the horseman went into the stable, I looked the mare over and thought to myself: why, here's a man who owns a little gold-mine. I wonder if he knows it? Curious to get this query answered, I followed them into the stable, somewhat, as I thought, to the disgust of the horseman, who, however, said nothing; and I heard the following conversation:

HORSEMAN—"Well, it's all the same to me which you use, but here's the hoss I should recommend. He's a Clydesdale, same as your mare, and he has all the points she is short of. I paid a long price for him two years ago; he's just six now; and as she is about two thirds bred, and a good one, she will be apt to throw you a colt you may be proud of. He comes rather high—I always get fifty dollars for his service, but as you are a neighbor, and as I would like to have a colt by him in the neighborhood that would do him justice, I'll give you the chance for twenty-five dollars. He'll cost you less to rear than a scrub and pay you well."

FARMER—"That is more than I can afford just now. I was told you could give me the service of a good horse for ten dollars."

HORSEMAN—"Well, yes; I have a mighty good hoss you can use at ten dollars cash down, and you can bring the mare back, if needed. Joe," to his stable-man, "bring out Grey Eagle. He is getting a little old, and though he's a thoroughbred Percheron, I got him cheap because the importer was hard up. He has done me good service at my other place in Indiana."

So Grey Eagle came out, a good-looking, lively chap, full of fire and glee. I put him down as at least twenty years old and wondered much to myself, if the proposed union came off, what sort of a baby would come to bless the maternal instincts of the mare from the "land o' cakes." The bargain was concluded, but what the results of this too typical example of injudicious horsebreeding were I never knew. But I do know that the method followed was not the best to pursue if one desires to reap a share of the rich harvest to be found in the breeding of farm and draft horses. JOHN P. ROSS.

Inspecting the Farmer's Cattle

THE recent talk of an investigation by Congress of that part of the work of the Department of Agriculture which has to do with the inspection of meat at the great packing centers has caused many people to wonder just what the Bureau of Animal Industry aims to accomplish in this matter and how this inspection is conducted. The proposal to investigate having been "laid upon the table indefinitely," it is not probable that anything more will be heard of it—at least for the present. One's curiosity, however, as to the nature and scope of the system of inspection remains to be satisfied.

Just prior to the recent attempt of Representative Nelson of Wisconsin, to force a congressional investigation of the work of inspection of food-animals the writer made an extensive tour of the packing-houses at the Union Stock Yards, Chicago, in company with one of the head officials in charge of this work. Every phase of the process was explained in detail, and every effort was made on the part of the inspector to give his visitor an adequate understanding of the work the government is doing to protect the health of the people.

Cattle, hogs and sheep, shipped by the farmers to the Union Stock Yards are given two inspections by the government. The first, or anti-mortem inspection, simply weeds out such animals as may arrive in an emaciated, crippled or sick condition. These animals are not purchased by the packing-houses. They are disposed of to rendering-plants for use in fertilizers.

The sound and apparently healthy animals go from the pens to the killing-plants, where, almost as soon as the life is out of the body, the second, or post-mortem, examination begins. Most of the diseases to which cattle and hogs are subject cannot be determined on a large scale and in a rapid manner until after death. Hence the necessity of having the government inspectors present in the packing-houses, working side by side with the employees of the packing companies.

It is interesting to follow the process of inspection through its different stages. Take a hog, for instance. Hogs are killed by sticking, or severing, the carotid artery in the neck. A few moments after this occurs, the hog is in the scalding-vat, where all hair and bristles are removed. As it comes out of the other end of this tank, it passes before a "header" who almost severs the head from the body. At this point the first government inspector steps in and examines the glands of the neck. If the hog is tubercular, these glands will probably indicate it. If any suspicious signs are present, the animal is marked for further inspection.

Hanging head down, the animals are carried along on an endless cable past workmen who open up and disembowel them. In each case the entire intestinal tract is passed to another inspector, who, by running his hands through it, can detect the presence of infected glands and other indications of disease. In case any trouble is found, the entrails go to the rendering-vat while the body of the hog is marked for still further examination by another group of experts.

The bodies of hogs that have been marked as diseased or suspicious finally bring up in a room by themselves, where a force of inspectors examine each one minutely and determine its fate. Some of them in which the suspicions are not confirmed are turned back to the packers; others, where the disease is very slight, are passed for lard only—the heat to which the fats are subjected in this process being a guarantee of a sterile product. The greater number, however, are condemned and are thrown from the tables into iron push-carts to be taken to the rendering-vats.

So rigid is the inspection maintained by the government that it is not allowable to move these carts when containing portions of diseased animals save in the presence of a government employee. He follows each and every cart, sees that its contents are put into the rendering-vat, seals the vat when it is full and makes certain that sufficient noxious materials, such as offal or chemicals, go into the vats along with the condemned animals to make the product after rendering unfit for any article of food. From the contents of these rendering-vats the packers manufacture fertilizers, soap, candles and a number of other non-edible products.

With cattle much the same process of inspection is carried out. As the bees are brought onto the dressing-floor of the great abattoir, the hide is first removed. Nothing more is done to the animal until a government inspector disembowels the animal and searches the entrails for diseased glands and other unhealthful indications. If he marks the animal as suspicious, it goes to other inspectors for a more thorough and leisurely inspection. Here again some of the animals are returned to the packers, but only in case the suspicions of the first inspector are not confirmed.

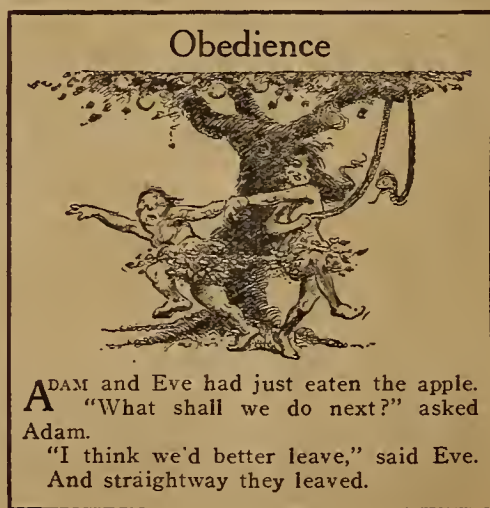
Tuberculosis is the Great Animal Scourge

The great scourge in animals, as in man, is tuberculosis. One per cent. of the cattle and two per cent. of the hogs are found to be suffering from this disease at the great slaughtering-plants where federal inspection is maintained. In fact, so great is this scourge that eighty-seven per cent. of all the condemnations are for it alone. Sheep, however, are almost immune from this disease. Dr. L. Enos Day, who is in charge of the pathological laboratory at the Union Stock Yards, Chicago, states that he has seen but two cases of tuberculosis in sheep in fifteen years. No cases were reported from 919 inspected slaughtering-plants during the year 1910.

It is interesting to note that hogs from regions where the farmers engage in dairying are much more largely tubercular than hogs grown in corn-feeding regions. The reason is plain. The milk from a single tubercular cow will contaminate a large part, if not indeed all, of the milk that is returned from the factory to the farms to be fed to the hogs. Cattle that are raised on the ranges and feed-lots of the West are less liable to be tubercular than those that come from the dairy regions of the Middle West and the East. For this reason the animals slaughtered at the great stock-yard centers probably do not indicate the true percentage of bovine tuberculosis the country over.

A great deal of diseased meat is consumed by an unsuspecting public. The government has no power to inspect meat that is killed for local consumption. Federal inspection is maintained only in plants that do an interstate business. It requires a skilled veterinarian to tell whether an animal is fit for human consumption. The inspectors in the government service are all graduates of veterinary colleges and have won their places through competitive examination under civil service rules.

Because of the difficulty of determining diseased conditions that are harmful to the consumer, the farmer and the local butcher are not always able to tell whether the animals they kill are fit for food. That this is true is evident from the last report of the chief of the Bureau of Animal Industry, which states that most of the meat condemned by the government upon inspection would ordinarily be sold for food if it were not for that inspection. Inasmuch, however, as tuberculosis is one of the chief dangers to guard against, the farmer who kills his own meat will do well to send to his congressman for Farmers' Bulletin No. 473. The illustrations of tubercular meat given therein are excellent. O. E. CROOKER.



ADAM and Eve had just eaten the apple. "What shall we do next?" asked Adam. "I think we'd better leave," said Eve. "And straightway they leaved."

Silage Underground

AS is the habit with the average farmer, who waits until it is too late to do some certain thing, so was it with us. Our neighbors were putting up siloes, but we never got into the notion until it was getting late, in fact too late to put one up. We concluded that we must have silage to feed, but what were we to do? We had an old cistern under the barn that had not been used for some years, and it was perfectly dry, too. Here is the hint to the story.

We plastered up some of the cracks that had come in the side walls and began to look for a silage-cutter. Everyone was busy. Besides, it took a large engine to run one, and quite a lot of hands. To fill up this cistern looked like a big job to us.

We looked and waited, until it was too late to use the corn as ensilage. Really we were beginning to think that after all we were going to do without silage. However, we were trying to cure up a lot of cow-peas that we had planted and were having poor success, mostly on account of the wet weather. We likewise had one plot of about two acres that were sown very late, and which the fall rains had caused to grow very rank. They were quite green, and the frost was likely to appear at any time.

What we were figuring on was to get the feed as cheap as possible, or, in case the project did not work, to be out of as little as possible in either work or money.

Our Method Was an Inexpensive One

We had a three-horsepower engine. We found an old rotary cutting-box in the neighborhood. Putting both of these in the barn, we proceeded to cut the peas with the mower. We raked them up, loaded them on our wagon and hauled them to the barn. They were mighty heavy to handle, but we got them to the machine and ran them through, and that with our regular farm force. We had one man—the biggest-footed man—in the cistern to tramp the silage down thoroughly.

All the silage had to do was to fall out of the end of the cutter into the silo. Therefore, very little power was required. I am satisfied that a one and one-half horsepower engine would have run it satisfactorily. As the top of this cistern was smaller than the bottom, there was not much surface of the silage to spoil.

The cows did not seem to relish it very well, but the horses, and especially the hogs, both the fat ones and the shoats, ate it quite readily. I cannot believe but that this peasilage is the very thing that the hogs need to furnish them protein.

We would not be a bit surprised in a few years to see many siloes built wholly, or almost so, under the ground, with a patent elevator or hoist that will bring up the silage at the will of the operator.

OMER R. ABRAHAM.

* * *

The practice of building higher siloes, to increase the pressure of the silage, and, in consequence, the holding capacity of the siloes, has steadily gained converts for some years past, until now it is common to find siloes towering to a height of forty feet or more above the feeding-floors. The climbing made necessary by these has induced some farmers to sink the foundation a number of feet below the ground. Some are now going ten feet or more below the surface.

Knowing how well the silage keeps below the ground-level has caused many to consider the placing of siloes entirely or quite underground. There are three possible disadvantages in this that should be considered:

1. Danger to life from suffocating gas (carbonic acid) that may gather in the silage.
2. Water in the bottom of the silo, unless the walls are water-proof.
3. The labor of hoisting the silage to the level of the feeding-floor.

This Method Best for Small Farming

The gas danger seems to be the most serious drawback that need cause the farmer to hesitate about building a silo below the ground-level. He must arrange a convenient hoisting power for getting the silage up for use, where heavy feeding operations are carried on. He must also make his silo bottom and walls impervious to water, unless the soil naturally drains below the depth of his silo bottom. Otherwise the water may seep in and spoil the feed.

While yet in the experimental stage, the underground silo seems to offer a practical solution of the problem of providing silage in small quantities for dairymen keeping only a few cows, and owners of a small flock of sheep, some growing shoats, or a few hundred hens.

An underground silo, unlike the silo built above the ground, can be made even four or five feet in diameter and as deep as necessary, without the danger of damage from wind or the freezing of the contents. Where only a small quantity of stock is kept or the silage is used for feeding poultry, the hoisting of the silage for feeding is a matter of small consideration. It is also not difficult to change the air in a silo of the size mentioned by means of a light fan for replacing the air, and thus to avoid danger from the choke-damp. B. F. W. T.

CAREFUL DOCTOR Prescribed Change of Food Instead of Drugs

It takes considerable courage for a doctor to deliberately prescribe only food for a despairing patient, instead of resorting to the usual list of medicines.

There are some truly scientific physicians among the present generation who recognize and treat conditions as they are and should be treated, regardless of the value to their pockets. Here's an instance:

"Four years ago I was taken with severe gastritis and nothing would stay on my stomach, so that I was on the verge of starvation.

"I heard of a doctor who had a summer cottage near me—a specialist from N. Y.—and as a last hope, sent for him. "After he examined me carefully he advised me to try a small quantity of Grape-Nuts at first, then as my stomach became stronger to eat more.

"I kept at it and gradually got so I could eat and digest three teaspoonfuls. Then I began to have color in my face, memory became clear, where before everything seemed a blank. My limbs got stronger and I could walk. So I steadily recovered.

"Now after a year on Grape-Nuts I weigh 153 lbs. My people were surprised at the way I grew fleshy and strong on this food." Name given by Postum Co., Battle Creek, Mich. Read the little book, "The Road to Wellville," in pkgs.

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

Poultry-Raising

Silage for Hens

FARM AND FIRESIDE is glad to present the matter of silage for poultry from a new angle. There seems to be no doubt that the farm flock can often be supplied with succulence and bulk feed to good advantage, as described in the following article, from the regular supply for cattle. But the farmer wintering a hundred or more fowls, and keeping only a few head of cattle, hogs and sheep, may get better results by cutting the silage very short, even if the cost is greater.

The non-freezing underground concrete-lined silo, four to six feet in diameter and deep enough to supply the stock kept, seems best adapted to those wintering a few animals and some poultry, or for the poultry specialist.

Our experience in feeding moist, succulent feeds to poultry has shown that a trough placed outside a partition, to which the birds must reach while eating, will prevent waste, soiling and musing of the feed.

Last season FARM AND FIRESIDE contained an article by T. F. Click on "Corn-Silage for the Chickens." As we are feeding silage without the special arrangements which Mr. Click has, perhaps others may like to learn of our methods.

Theoretically, each busy hen should have as perfectly balanced a ration as the dairy cow, but inasmuch as practical working stanchions for hens are yet to be invented and as Bidley insists on picking her own food, a balanced ration can be reached only approximately.

One of these approximate rations which is giving us excellent satisfaction is corn-silage, cottonseed-meal, Ajax flakes, bran, cracked corn, mixed screenings, whole corn

It seems to me that Mr. Click's method is impracticable except for someone operating a large poultry-plant. Silage must be fed at the rate of two inches per day, except in the coldest of weather. A two-inch feed across his forty-four-inch silo would give about two bushels of silage. Using his figures of one-half bushel for 240 hens, it would require a flock of 960 hens to take care of his silage fast enough to prevent spoiling. We are feeding all the hens will eat, which is nearly twice as much per bird as Mr. Click feeds from a forty-four-inch silo for about five hundred birds. I may be mistaken, but I believe the cost of setting and running a silage-cutter is too great to be profitable for a flock of that size, and 960-head flocks are non-existent except among professional poultrymen. Also in this latitude, where silage is most needed, a silo forty-four inches in diameter would freeze solid to the center.

However, I believe that on farms already possessing silos for general feeding silage is a profitable feed for chickens.
B. R. BROWN, South Dakota.

In the foregoing description of feeding and caring for seventy-five hens—a representative farm flock—how forcibly the point is brought out that a "dairy" of hens requires a balanced ration, just as much as does a dairy of cows.

Many farmers who are careful to provide a balanced ration to the cow let the farm hens get along on a steady diet of corn or barley from November to May.

Long Cold Chisel

A cold chisel cannot always be used for cutting nails, since the end is too wide and will not slip between boards where it is mostly wanted. We took the half of a three-leaf buggy-spring and made a very satisfactory one several years ago that we are using yet. The spring can be broken by placing it between two beams and pulling around on one end. We easily sharpened ours on the carbundum grinder and it does the business whenever we want it. The whole thing is about fifteen inches long, though that might be different if you wanted a longer one.
R. E. ROGERS.

If some horses had the power of the recall, they would hasten to change rulers.

The Roofing that Needs No Painting



Amatite ROOFING

THE Amatite mineral surface will hold its own against the weather for a long time. You don't have to look over your Amatite Roofs to see whether they need painting every year or two.

The cost of paint, therefore, is done away with—all that trouble and nuisance and bother is gone. Simply lay your Amatite, nail it down, take away your ladder and forget that you have a roof.

A sample of Amatite will be sent free on request, together with a handsome little booklet, giving details. Address our nearest office.

Everjet Elastic Paint

A low-priced black paint—tough and durable. Stands heat so well that it can be used on boilers. For wood or metal, "rubber" roofings, fences, iron work, farm implements, tanks, etc.

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Greater Profits in California

Ten to forty acres of irrigated land in the fertile San Joaquin Valley will give you a net income equal to 100 or 200 acres of ordinary farm land.

In this wonderful sun-kissed valley nature helps the husbandman in a marvelous way. It is always growing weather. You do not have to contend with long, cold winters. Little or no shelter is required for stock. It thrives outdoors the year 'round. Alfalfa cuts five or six times a year and furnishes food for cattle, horses, hogs, chickens and bees. It is always in demand and commands a good price in the market.

A few years develops grapes, peaches, apricots and oranges to money makers which beat the best wheat-field you ever had.

You can start with little because after the first year the profits from your alfalfa and dairy cows (bought on time from the creamery) will meet all payments. You will be out of debt before your fruit comes into bearing. You will have a home and farm worth \$250 or more an acre bringing you an income of at least \$40 an acre, and when the fruit is producing it will be much more. These are average results. Extra energy and foresight get rewards in proportion.

It's a well settled country with good roads, good schools, telephones, rural delivery, creameries and established irrigation works. Why rent when you can buy here on liberal terms and low interest? Let me send you our book about the San Joaquin Valley. Bear in mind I am not selling land. The Santa Fe employs me to make the facts known about the great opportunities for homeseekers here.

This San Joaquin Valley book is free. Write

C. L. Seagraves, General Colonization Agent,
A., T. & S. F. Ry., 2377 Railway Exchange, Chicago.

Harvey Bolster Springs

Prevent damage to eggs, garden truck, fruits, live stock on road to market. Make any wagon a spring wagon. Soon save cost—produce brings bigger prices—wagon lasts longer—horses benefited—thousands in use—"my wagon rides like auto" says one. Get a pair at dealers. If not at dealer's write us. Insist on Harvey's. 40 sizes—fit any wagon—sustain any load to 10,000 lbs. Catalog and fistful of profits free. HARVEY SPRING CO., 729 17th St., Racine, Wis.



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Geo. Ertel Co.,
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All forms of poultry do well on silage

and wheat. Now all this is not so complicated as it seems, but quite easily accomplished on the average dairy farm.

The silage comes from the dairy barn and is fed in troughs placed on small feeding-floors in the scratching-sheds—for each seventy-five fowls a ten-quart pailful scalded with sufficient boiling water to fill the spaces in the silage and allowed to cool to a palatable temperature. The great variety of grain is obtained in quite an ordinary manner. When the seed-grain is fanned for the fields, the screenings are all shoveled into a single bin—for future chicken and sheep feeding. It usually contains oats, speltz, rye, millet and a little corn and soy-beans. Wheat-screenings are usually sacked and fed separately.

The ground grain is simply robbery from the dairy barn, being Ajax flakes, cottonseed-meal, bran and cracked corn mixed in proportion suitable for heavy-milking cows.

The mixed and ground grains are fed to the hens dry in a hopper, in the proportion of one part mixed screenings and one part ground grain from the cow-barn.

Wheat-screenings and shelled corn are scattered in litter on the floor.

The silage is fed in the morning, and the whole corn and wheat late in the afternoon, the quantity of corn varying with the weather. The hens eat up practically all of the corn before going to roost and spend a good share of the following morning scratching out the wheat. The hopper is filled whenever it becomes empty—about once a week—and is open for the hens at all times. They do not eat too much, as the grain is light and chaffy. Hens show enough preference for their other foods not to overeat of dry bran and Ajax.

Mr. Click mixes his ground grain and silage into a mash, but his silage is cut fine, especially for hens. Ours being intended primarily for cattle and sheep is enough coarser to make it wasteful of the grain when mixed as a mash. However, the hens eat it all, except the riper husks, the larger pieces of stalk and the cobs. Whenever possible, we substitute hot separator-milk, either sweet or sour, for the water on the silage.

Usually they need no other drinking-water, but clear warm water is furnished as required.

No meat-scrap is fed, the cottonseed-meal and skim-milk helping to supply the lack of the summer's insect ration. The succulence of the silage is also helped by potato-parings and by an occasional squash or pumpkin.

I shall not give our egg record, for weather conditions on the Dakota prairies are such as to make winter egg yields compare too unfavorably with those farther east and south, but silage-fed hens are noisy, active ones, and noise and activity usually spell health and eggs. Like all other stock, hens have to learn to like silage, but after that they are fond of it. They do not seem to care for it unscalded.

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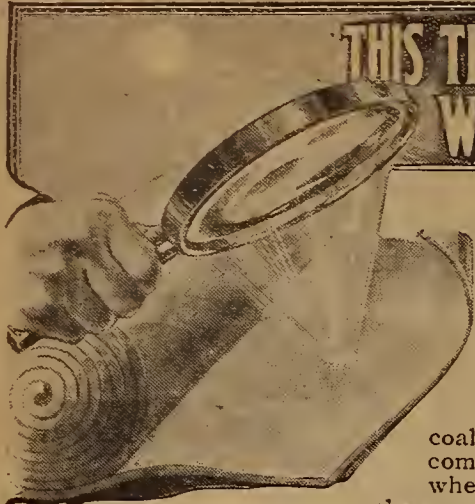
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These felts are water-proofed with coal tar, asphalt and oil, or other volatile compositions which quickly evaporate when the sun reaches them. Therefore, the sun quickly begins its deadly work of taking these oils off the surface of such roofings;

and then continues to draw them out of the inside through the strawlike fibres of which the felt is composed, until the roofing becomes dry and porous and is no longer water-proof.

J-M Asbestos Roofing is unlike other roofings, because its felts are made of stone fibres which are solid. These solid stone fibres defy the action of the sun's rays and positively prevent capillary attraction, thus hermetically sealing all of the oils so they must remain to do their duty indefinitely.

J-M ASBESTOS ROOFING

is not merely one sheet of water-proofed stone felt, but several layers cemented together with nature's wonderful water-proofer—Trinidad Lake Asphalt. This asphalt is also hermetically sealed, making any escape of oils or asphalt impossible.

Prove for yourself that sun will soon destroy the water-proof quality of ordinary roofings. Focus the rays of the sun through an ordinary sun or magnifying glass and note results. This, in ten minutes, will show you what sun will do in a few months.

This simple sun-glass test is as severe in its way as our famous blow-torch fire test. It will show up the short-comings of a roofing before you pay out your money.

Because of its stone nature, J-M Asbestos Roofing also never needs painting, and is fire-proof, acid-proof, rust-proof and rot-proof.

Most hardware and lumber dealers sell J-M Asbestos Roofing. Sold direct, and applied if desired, where we have no dealer. Write our nearest Branch to-day for sample of the curious Asbestos rock from which this roofing is made, and our handsomely illustrated Book No. N60.

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The Market Outlook

Apple Season

By Berton Braley

GETTING near to apple-time,
 Season best of all the year!
 So I think at least, for I'm
 One who holds that fruit most dear;
 Weather's snappy, keen and clear,
 Full of vim and glow and zest,
 Makes you want to shout and cheer,
 Makes you feel a mortal blest,
 That's the weather—apple-time.
 And the apples—juicy, prime,
 With their cheeks the rosiest,—
 They'd stir anyone to rhyme!

Where's your other fruit can claim
 Any such deserving fame?
 Such a smack and such a tang,
 Such a gastronomic thrill?
 Let the other fruits go hang,
 Only so I have my fill
 Of the Pippin and the Snow
 And the Baldwin and the Sweet
 And the hundred sorts we know
 Are the finest kind to eat;
 Then, when autumn grows more chill,
 Lead me to the cider-mill,
 Where the juice that sparkles through
 Has a zest and flavor, too,
 High Olympus never knew.

Then it does me good to think
 How this royal food and drink
 Brings return none can compute
 To the grower of the fruit;
 Brings unto the farmer's hand
 Streams of gold from every land;
 Wherefore let the joy-bells chime,
 As I give my thanks that I'm
 Getting close to apple-time!

An Honest West Versus a Dishonest East

THE effects of packing farm produce are very far-reaching. Goods may, of course, be packed properly or improperly. If fruit, vegetables, butter, eggs and such perishable products are well packed for marketing at long or short distances, the direct losses as a result of the packing under ordinary and regular conditions of transportation may be as nothing or merely nominal; but if such farm products are carelessly packed for transportation, some deterioration in the quality of the goods will inevitably occur, and an anticipated profit may sometimes be turned into a very serious or even a total loss. In view of the fact that so many kinds of farm produce are of an extremely perishable nature and, under the best conditions, are subject to more or less rapid deterioration, it may be laid down as a general principle that we countrymen who are accustomed to ship goods to market cannot be too careful in our packing processes, for the reasons that well-packed produce will reach its destination with little or no loss as a result of spoiling and because well-packed goods as a rule bring higher prices. It is important to realize, therefore, that next to production stands the grading and packing of produce—a fact which is of considerable significance to the producer, who is looking for a money return as a reward for his effort, and to the consumer, who wants and is entitled to the value in quantity and quality for the price he has to pay for the farmer's goods.

But vastly more important in its far-reaching effects is the subject of honest as compared with dishonest grading and packing. In this case the guilt of one producer or a few producers may affect the future industry of a community or district which is more or less engaged in certain lines of production, and even cast reflection on a whole section of our country, as has recently happened. A farmer who slips his eggs to market after having packed with what he knows to be fresh eggs some which have been discovered in stolen nests about the barn or hedge-rows, without knowing whether they are partly incubated or not, is not only lowering the grade of his whole pack or stock of eggs and injuring his reputation, but he is bringing into question the honesty of all egg-producing farmers who carry or ship eggs to market. Let every questionable egg be retained for farm use, and only those sold of whose freshness the farmer is actually certain; then the rights and high moral standing of all will be protected rather than injured. The writer gathers his eggs daily; any egg found outside of the regular nesting-places being always retained for home use if found to be fresh, and no customer has complained of receiving a bad egg during the past seven years.

Some Producers are Dishonest

The commission men in Washington, D. C., and other large cities constantly complain of dishonest practices on the part of producers who ship fruit and vegetables in boxes, barrels, or even in car-load lots. The vicinity of Washington has large numbers of truck-farms, and Baltimore and Washington are great commercial centers for southern fruit and truck crops at all times of the

year. Those who know the conditions well as to the packing of crops of this nature, particularly general consignees who look to growers rather than to commission men for the money they make, maintain that commission men are no more dishonest than producers and shippers. Car-loads of cabbage, apparently sound and honestly packed to a casual observer, may be found on closer examination to contain large quantities of yellow and decayed cabbage in the center; barrels have been shown packed with good-sized, marketable sweet potatoes on the top, sides and bottom, but padded with those which were under-sized and normally unmarketable in the middle. The same thing can frequently be seen in Washington commission houses during the shipping seasons for Irish potatoes, apples and other produce of this nature which are customarily packed in boxes and barrels. This leads to suspicion and gives rise to accusations of dishonesty in packing on the part of growers and shippers in general. This should not be the case. Let every producer and shipper of farm produce pack and grade his goods as they ought to be packed and graded, let the goods be just what is claimed for them, and the shipper will then avoid playing into the hands of crooked commission men who are ever ready to seize every opportunity of discrediting the farmer's goods—who never hesitate to magnify a mole-hill of carelessness into a mountain of dishonesty. This policy of absolutely honest packing would soon remove the stigma from the methods and the produce of themselves and their neighbors. Every farmer should aim to make our industry the most honest, as it is the most necessary industry in the country, and honestly packed goods will help to bring this about as quickly as anything.

But the most striking illustration of the far-reaching effects of honest as well as dishonest packing and grading of farm produce is that reported regarding the shipment of American apples and other fruits to Germany. Under date of January 31, 1912, Consul-General Skinner, of Hamburg, says:

"The apples coming from the eastern part of the United States landed in the beginning in good condition and sold at very satisfactory prices. This, however, lasted only for a few weeks, since which all arrivals have landed in more or less bad condition; considering this, the prices realized have been fairly good, owing to a very strong demand, but, nevertheless, losses were sustained all around, and sometimes very severe losses. . . . Regarding packing, we wish to say that apples from the Eastern States packed and shipped in barrels were very often not honestly and carefully graded. It is very essential, in order to maintain the trade, that the packers endeavor to improve the packing."

This is with reference to eastern methods of packing and shipping, and it is certainly not very complimentary. In contrast, let us see what is said of western growers:

"Apples from the Western States are, without exception, being shipped in boxes and have arrived here in fairly large quantities and sold until the beginning of December at fairly good prices, and recently at very satisfactory prices. We are of the opinion that until April good prices will be obtainable for this kind of fruit. . . . The shippers from the Western States, who pack all their fruit in boxes, have always given very honest and careful packing, and consequently are gaining fast in favor with the dealers and public at large."

Europe Points Out Our Defects

Here, then, is a clearly contrasted statement of the far-reaching effects of honest against dishonest packing and grading. The West as a whole is held up as a model of excellence in the honest packing and grading of fruit, with the result that western apples are coming into high favor among both dealers and consumers in Germany, where they sell at good prices during many months of the year. It is well known that western growers have had to battle against long odds to win their success. With fruit grown under irrigation, with transportation across the whole continent and thence to Europe, they have defeated eastern growers on their merits. No small degree of their success is due to coöperation, but coöperation insists that the packing of every grower without fear or favor shall come up to a recognized standard. Furthermore, the associations which have conducted this foreign trade have, by the careful and honest packing and grading of their fruit, given a good name to the whole body of western growers.

But some of the eastern packers have not only injured their own trade by dishonest packing, but they have given a bad name to every honest grower and packer, of whom there are many, in the East. This damages the prospects of the entire eastern apple industry so far as foreign markets is concerned, and this fact is becoming well recognized in trade circles.

When all is said and done, it is perfectly plain that it is fatal to economic success for a farmer or a firm to undertake to succeed very long on a dishonest basis. Honesty in the packing of farm produce is absolutely the only policy which should be tolerated, and the sooner we farmers realize it, the better will it be for our pocketbooks, our consciences, our neighbors and our country at large.

JAMES B. MORMAN.

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No Big Runs of Cattle

HEAVY rains all over the Western States have made plenty of feed in pastures, and consequently the cattle-market keeps in a very healthy condition. With plenty of grass, there will be no big runs to glut the markets. There certainly is no cause for anyone with cattle to get panicky or to fear any great breaks. It is now conceded that the shortage of cattle is even more acute than was expected. Good grain-fed cattle are steadily drifting into a class by themselves, and it is hard to figure just how high they can and will go. I cannot help repeating that the cheapest thing on the board is mutton. It seems as if there would be no great risk in cleaning up the stubble and corn fields with a flock of sheep. Even if the profit is not large, the good they will do the land is very great.

W. S. A. SMITH, Iowa.

Sheep are More Popular

NO CHANGE of importance is visible in the sheep-market, lambs remaining at about the same figures as have prevailed for some weeks past, varying only as the supply has been greater or less. There has generally been liberal receipts, southern lambs having held out longer than was expected. There has been a better demand for feeders, as high as \$6.25 being paid for some very desirable bunches.

Good handy-weight wethers have been more sought for than has been usual of late. Breeding ewes seem to be scarce and are in demand, selling from \$4.50 to \$5.25, while the packers have been paying from \$4 to \$4.50 for desirable killers. Though farmers may be inclined to consider these prices low as compared with those of cattle and hogs, they are certainly remunerative, and recent experience has taught us that \$9 and \$10 mutton and lamb is prohibitive.

It seemed fair to suppose that the hitherto unheard-of prices paid for cattle and hogs would have improved the demand for mutton, since in comparison sheep and lambs are cheap. A conversation recently had with the very clever cook of a large institution seems to throw an odd sort of light on this subject. He remarked that they were using less meat than usual because of the high prices of cattle and hogs. When asked "what about mutton? That's cheap enough," he replied: "Well, I don't know; lamb-chops are worth thirty to thirty-five cents, and our people seem to think that the animals consist entirely of chops, so that the frozen good dishes I can conjure up out of the cheap cuts never get a show." This curious ignorance seems to be almost universal, for it is only among the more wealthy households and the better class of hotels that one meets with a good roast shoulder or a savory dish from the neck of a well-fed wether or lamb. The leg of a well-fed Down wether, treated exactly as a ham is and hung and smoked for winter consumption, is quite as savory and far more wholesome than that of a hog. It is astonishing how few farmers know how much they miss through failing to feed even a few lambs for household consumption. Perhaps when our mothers and our sisters, our aunts and our best girls, get the right of suffrage which is their due, they will help us to see that our great wool industry is duly protected, and maybe vote that every farmer shall be compelled by law to feed some sheep for them to cook.

The idea is that if mutton-eating once became popular in our farmers' families the rest of us would soon follow their lead, for has not the food cheer of the farmer's table been proverbial through all the ages? "Hog and hominy" have served a noble purpose in their day, but we are approaching an era of intensive farming when brains will to a great extent have to succeed brawn, and lighter and more digestible food will be needed by the rising generation of farmers graduated from our agricultural colleges.

JOHN PICKERING ROSS, Illinois.

The telephone is handy in asking how a sick neighbor is, but it doesn't take the place of personal help in the sick-room. Mix a few personal visits with your well-meant inquiries.

The up-to-the-minute farm has walks, not paths, between the principal buildings. The walks may be gravel, wood, stone or even cement. Think of the dirt, mud and dust they save. Worth while? Of course!

Allow the ashes to cool before using them as a fertilizer for grape-vines; then don't put them right up against the vines. In fact, it is best to dig a shallow trench a few inches away from the roots of the vines, and place the ashes in that.

By selecting seed early from all varieties of garden products, one will realize a neat little saving in the way of seeds for next season's garden-making, and the native seeds will be more apt to grow than those ordered from far-off seed-houses.

A good farmer stated to me the other day that he cured the Canada thistles on his place by cutting them when the blossom was entirely out and leaving a stubble of about two inches. This stub dries up and prevents the thistle sprouting up again.

The Barn-yard

WE ARE taking more pains in the care and arrangement of our barn-lots than we used to, and we find it pays. When we compare manure with commercial fertilizer in efficiency and then look at the cost of the latter, we feel that so valuable a resource as barn-yard manure merits drastic measures toward its preservation.

We are restricting our feed-lots to a smaller area. Experiments have demonstrated that manure exposed to the elements for a period of six months will invariably lose one half its fertilizing value. In one experiment, the loss in exposed horse-manure for a period of five months was sixty-two per cent.; in cow-manure it was only thirty per cent. The loss is always greatest during heavy rains in warm weather. By diminishing the area of the barn-lot, the surface exposed to leaching rains is lessened proportionately. Also, this keeps the stock in smaller quarters, which results in the litter and excrement being tramped more compactly and so becoming less susceptible to the deteriorating effects of exposure to the air. The straw and corn-stalks, being kept in a thicker layer, are also better able to absorb and retain the liquid excrement.

A small lot is also more easily fenced and sided with sheds.

We aim to keep our manure free from small sticks, chunks, etc., which are so apt to get in the feed-lot. When the prong of the fork strikes one, as the manure is being loaded, the first annoyance is experienced. Some may be tossed unnoticed into the spreader, where they endanger the machinery; but if they do pass off the load all right, they will be on the field, where they will be a source of trouble to mower-knives and hay-loaders.

P. C. GROSE.

The horse is a vain thing for safety, according to an old authority, but it never turns turtle or bursts a tire.

A cement floor in the crib or granary will cost no more, perhaps less, than a board floor which warps, cracks and splits. Neither can rats or mice gnaw into the cement-floored crib to waste and damage the grain.

The United States army cannot supply its cavalrymen with the right kind of horses at any price. This is a matter for farmers to look into. If Congress insists on spending more for the War Department than for the Agricultural Department, the farmer should, at least, sell the War Department its horses.

What the Everglades Mean to the Farmer

[CONTINUED FROM PAGE 5]

and sent by the New River Canal to the railway at Fort Lauderdale, to be shipped to the northern market. The third harvest of each product, as shown by the farmers' record, was marketed the first week in March. The latest estimate of lands in the Everglades thus far drained is 15,000 acres, the water passing by ditches into the canal completed.

A colony farm of two thousand acres directly on the New River Canal is only in part cultivated as yet. Since January, 1911, one hundred and three families of western people have come here to settle. Each is allowed from five to ten acres only. A staff of experts in agriculture have been employed by the company owning the land to teach the most economic and modern methods of cultivation and planting. Frequent inspections are made of the farms and advice given where necessary. Each farmer is given a book, in which he writes the kinds of produce he raises, the season's yield of each, the space given to each crop, the cost of crop-making, crating and transportation and the income he gets in money for the sale of the crops, after deducting all expenses. These records show a net profit of two hundred dollars on five acres and five hundred dollars on ten acres, not counting the vegetables, fruit and other necessary food kept for the family table. This is only an average of the results from the one hundred and three farms. Some of the more ambitious soil-cultivators who have devoted their land to one or two varieties of fruit or vegetables actually netted one thousand dollars for ten acres, owing to the quantity and quality of the harvest. It should be said that this work on the Daves colony farm is an illustration of what drainage of South Florida means to the farmer and the country at large.

Vegetables of Every Description

As to the variety of products that can be raised from the drained soil, a tract of fifty acres of the Everglades is cultivated by an Irish farmer named Lanahan, on the west side of Lake Okeechobee. He knows nothing of scientific methods or demonstration. He does not plow, but drops the seed or other source of growth in the earth, leaves it to itself. He pays no attention to weeds or grass that might choke the growth of the vegetation.

On this fifty acres one can see little patches of every known vegetable raised in this country, several kinds of bluegrass, also alfalfa and clover for fodder, bananas, pine-

apples and oranges, in addition to sugarcane. On his records can be counted fifty varieties of food products, and all producing a harvest of good quality. This farm is drained by a series of ditches, less than a half-mile in extent, about three feet wide and of the same depth, all dug with the spade. The water drains into a small stream entering the lake.

The Everglades can be drained and made a great farm-land, but they are isolated. As yet there are but a few miles of road on which wagons can be hauled, except in the immediate vicinity of the few towns. Until the canals, and their connecting ditches, are completed, the settlement must largely be confined to the country along the New River Canal and the Caloosahatchee River to allow shipment of products by barge. The contract for completing the entire canal system requires all of its mileage open for drainage by July of next year, but to excavate the six hundred miles of ditches will require a longer period.

Railways and highways can easily be built through the Everglades, as the embankments thrown up in canal excavation are broad enough at the top and high enough above the water to form natural roadbeds. Many miles of rock digging were required to cut through the rims of the Everglades, and this material would make surfacing for roads running along the canals, also ballast for railroad-tracks. The embankments made by excavation on each side of the New River and other canals under way are wide enough at the top for a double-track railway or a wagon-road where two vehicles can pass abreast.

The banks of the ditches are from four to six feet above the water, and their tops can be graded for roadbeds.

Visions of Transportation

A scheme already proposed by the engineers is to build a railway along one bank of each canal and a wagon-road along the other bank, with freight warehouses that can be reached by bridges connecting the wagon-roads with the opposite bank. Thus the farmers can carry their produce to the nearest warehouse and ship it by rail. Of course, this means much time and labor, and years will elapse before the entire area will be available for the farmer, as it is useless to take up land if the harvest is too far away from transportation lines to be shipped to market, except for home supply.

Another point is that material for building must be obtained outside. Here and there are groves of trees on islands, but of small size. No clay is available for making brick, and there are no deposits of building-stone. Consequently, the expense of house and other erection is larger on account of the cost of transportation of material. In certain sections the bottom of the Everglades is a sand-bed instead of muck. By digging out and mixing it with cement, concrete might be used for building purposes. As it is, most of the small settlements are of wooden houses.

While the drainage problem has been solved, there are other problems to be solved in turning this land into a great farming center, but the people of Florida have thought of them, and as transportation by the railway, the highway and the waterway is provided the homeseeker will have access to the drained lands and another source of food-supply will be added to our agricultural area.

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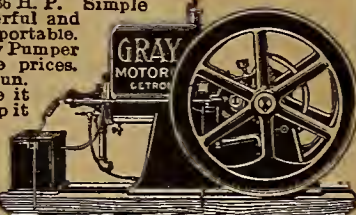


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Farm Notes

Hogs Sell High

WITH a moderating supply during August, hog values scored another advance, putting the price the highest since October, 1910. The trade is on a healthy basis, and there does not seem to be any reason why current values should not be approximately maintained for a few weeks. Conditions are such as to make an active market: the offerings are well fattened and in prime condition; eastern shipping demand is strong; general demand in fresh-meat channels is maintained, and the packers willingly put into their cellars the heavy weights that are left, confident that presently they can sell at a good profit.

The future prospect looks favorable for the producer. The supply of hogs throughout the corn belt is but moderate, and this will appear even shorter considering the scarcity of sheep and cattle. A record crop of small grain is being thrashed, and the prospects are favorable for a good corn crop if frosts hold off for a short time. This means plenty of grain at a low price, and there is but little stock to feed it to. The large cattle and sheep feed-lots of the corn belt are noticeably bare. The demand for grain other than for manufactured and milled products will be very small, thus holding the price down. This condition will favor the feeding of the supply of hogs, such as it is, for a long period and will act as a balance-wheel in any market scare. The grower can look for a profitable market for some time to come. Even if early frosts should materially injure the corn crop, the hog-market would be but little influenced, as the soft corn would necessarily have to be turned into pork.

The top of the current quotations is rather unstable, only a few choice shipping weights selling at the figure, but the bulk sales are on a firm market. The large proportion of 280 and 300 pound sows keep increasing the average weight. Care should be exercised in not marketing heavy hogs in too large numbers, as the current demand for this class is not large.

LLOYD K. BROWN, South Dakota.

Two Poisonous Plants

IN THE Middle and Eastern States comparatively few wild plants are poisonous to stock, and there is no such general danger from them as on those western ranges where larkspurs and loco weeds prevail. It is true that cattle are sometimes killed by eating wilted leaves of choke-cherry and that water-hemlock is not uncommon, though the latter seems seldom to cause injury to stock. We also have the poisonous Kalmias—sheep-laurel and mountain-laurel,—but these grow in woods or neglected pastures rather than in well-kept feeding-grounds, and are not difficult to eradicate when they become troublesome.

It does not seem to be generally known that the common scouring-rush or horsetail is a dangerous plant. When mixed with hay and eaten by horses, it may cause death, and in consequence it should be eradicated from mowing fields wherever possible.

There are several sorts of these scouring-rushes, some of which grow in sandy soil and others in wet soil. Most of them have two distinct forms of stems: The spore-bearing or fruiting stalks are cylindrical, with no projecting leaves, but with clublike tops, on which the spores are developed. These stalks are about the diameter of the stem of a clay pipe. The other form of stalks are more slender, with circles of narrow leaves projecting on all sides. Both these forms are represented in the picture herewith, the immature stalks being shown on the sides below.

The horsetails reproduce by small yellowish brown spores, which may be shaken from the cylinder heads as a fine powder. Under a microscope these spores are most interesting: they are seen to have curious threads wrapped around them as they first fall from the plant, but on exposure to the air these threads stretch out and form tiny sails by which each spore becomes an aeroplane and floats in the air. It may thus be carried for many miles before it alights. If it finds favorable conditions for growth, it germinates and starts a new plant.

These horsetails are curiously hard and rough, so they have been used for a long time to scour with—on which account they are called scouring-rushes. This hardness is due to flinty material stored in the stem by the growing plant. The fact that this flinty substance makes up the skeleton of

the stem is easily demonstrated by immersing the stalk in nitric acid: the soft green part is soon eaten away, leaving the white stone stem still in cylinder form.

It is probably this stony material that causes the poisoning of horses that eat the plants. It seems especially dangerous when mixed with hay, and care should be taken to exterminate all patches of it in grasslands. It is probable that repeated mowings close to the ground would help to do this. The latin name for these horsetails is Equisetum.

The poison-ivy is poisonous to man rather than animals. It is probably the most widespread poisonous plant in the Eastern and Middle States, and is only to be exterminated by cooperative efforts. In thickly populated regions, however, there is little excuse for tolerating it along roadsides and in fields.

The distinctive characters of poison-ivy are well shown in the picture. It may be known from other plants by the fact that there are but three leaflets to each leaf. In the somewhat similar woodbine or Virginia creeper there are five or more leaflets. The plant climbs trees, fences, rocks and walls by means of woody creeping stems that send out holdfast roots along their sides. Sometimes it is shrubby with an erect stem, though this is usually short. The small berries are produced in great abundance and are eaten by birds, and the seeds are thus widely scattered, especially along roads and fences.



Poison-Ivy

There is a great difference in people as regards poisoning by this plant. Some persons can handle it without danger while others cannot safely touch it.

One who is not subject to poisoning by it can safely pull up this ivy with gloved hands and burn the plants so pulled. Along stone walls it is desirable to burn over the roadsides where the ivy is present, if this can be done without injury to trees or other valuable objects. Persistent clean culture will finally lead to the extermination of the pest. CLARENCE M. WEED.

Setting Up Binder-Cut Corn

SOME men maintain that to set up bundles after a corn-binder is much harder work than to cut corn by hand, while others think it not such a hard job. The cause of this may not exist so much with the corn or the man as it does with the method.

A farmer was telling us of how he used to set up the bundles by gathering the sprawling tops together in his two hands and lifting it to the shock in that manner. One day a neighbor told him that he went at it wrong, that he should grasp the band with one hand and lift that end of the bundle up so as to thrust the other arm under, and then as it is carried to the shock allow the butt end to tip down again. This puts the stalks in the right position for placing to the shock, besides bringing the tops together in a nice little bunch in the arm. The first trial converted the farmer. We have tried it; it works. P. C. GROSE.

Strawberries on Small Space

FOR those who have not the advantages of a large strawberry-bed, here is a method by which one may solve the problem, and it does not call for much exertion where economy of space is the first consideration.

A strong box or barrel is needed—something that will stand the general conditions of the weather. Bore holes in the bottom of the box or barrel for drainage, and also several rows of inch holes on the sides, holes at least six inches apart, and each row the same distance, with the first and third rows of holes directly above each other, and so on alternately. Set the box or barrel on small blocks of wood to assist drainage.

Soil of the same quality as that prepared for a bed in open ground is required, and in placing in the box it must be sifted or sprinkled during the whole course of the work of filling. Fill up in this manner to the first row of holes, and after placing a plant well in each hole, cover up the roots of the plant by this sprinkling process to the next row of holes, and so on until full. Unless this method is used to put the dirt in, the plants will be drawn out of position when the mass settles. Plants are, of course, placed on the top of the barrel or box. Strong wires around the sides, if a box is used, will assist in keeping it together if placed on before filling.

Such a prepared bed of strawberries will supply the wants of any ordinary household, and more, too, if more than one box is prepared. There are advantages, also, in this method of raising them: there are no weeds to keep down, a bucket of water gently poured on will supply all the moisture needed, the berries are clean and easy to pick, and the whole batch of plants can be covered with little trouble if necessary to protect from late frosts. BERT H. WIKE.



The FARMERS' LOBBY.

The Complication of Political Life

By Judson C. Welliver

CONGRESS, as this letter is written, is getting its trunk packed and its lower berths reserved for a hasty exit from this sweltering town. It will have adjourned and rushed home to look after a varied assortment of fence-line difficulties before this is in print, unless the utterly unexpected shall happen.

There is no impropriety in saying that Congress is finishing up its session—not its job, goodness knows—in a very bad frame of mind. The session has been long, tiresome, discouraging. It has accomplished little in proportion to the effort that has been put forth; and, what is more, it has a feeling that more of just such futile sessions of hard work and small achievement are ahead. I have the same feeling myself.

Congress has passed some tariff legislation—mostly for the veto of the President. It has seen three political conventions get away from it; run themselves without paying much attention or asking its leave. It looks forward cheerlessly to an election in which the people are going to run things to suit themselves, and to do whatever they do without much regard for Congress.

Congress Didn't Want a Third Party

TAKE the Chicago convention of the Republicans. Congressional Republicans had little to do with it. The Washington crowd was little in evidence, compared to other conventions of other years. Congress, with an overweening ambition to carry the election, wouldn't have wanted anything to happen that could possibly split the party; but it happened.

Congress wouldn't have wanted a Bull Moose convention and a third party; but they happened. The Progressives in Congress have been talking in whispers for years about the possibility of a third party, and assuming that when it came, if ever, they would be it. It has come, and almost all of them are outside of it.

The Democratic convention at Baltimore wouldn't have done what it did if it had been concerned about what Congress wished, for most of the Democratic side of Congress was for Clark and utterly against Wilson.

Congress, in short, has been going through a period of introspection and self-examination that has not been very satisfactory in results. The most evident result is the discouragement with which members speak of their own careers and the future prospect for such careers. Among Republicans, both regular and insurgent, there is more discomfort than has been observable in many years. A large proportion of them are leaving Washington with the frank expectation of being defeated in the election. The outside estimate I have heard a Republican congressman make, of the number of Republicans who would come for seats in the next Congress, is 75. There are more than twice that number in the present House; it started with 162, but one or two have been unseated. It is rather curious, in this connection, that even Republicans who insist that Taft or Roosevelt has a good chance to be elected, nevertheless express no hope of the Republicans controlling the next House. They generally regard it as gone, past all hope of redemption. Men who won with the handsomest majorities in the Democratic year of 1910 are in the same danger as those who came through by tight squeezes. The prospect now is that there will be three tickets in about all the districts where Republicans ordinarily have any chance at all, and the feeling among Republican members is that their party will be so split that the Democrat will win. It is no exaggeration to say that a comfortable half of the Republicans now sitting will frankly admit that they see no chance to be returned in November. They are not announcing this publicly, of course. Most of those who have been renominated are going home to put up the best fights they know how, and to try to hold both the regular Republican and the Progressive party votes. But in their candid and confidential moments they admit it is a sorry chance.

A Progressive congressman said to me only yesterday: "I've been renominated, and I'm going home to tell everybody that I shall vote for Roosevelt. That's as far as I want to go. I don't want to decline my nomination as a Republican and take the chance on a Progressive nomination alone. Yet if I don't do that, the Progressives will name a candidate for my seat, and he will get a considerable showing of votes. He'll not run, in my district, as well as in some others, because everybody knows me as a dyed-in-the-wool Progressive, and the district is in sympathy with my position. Still, if I

don't run on the Progressive ticket, I'll lose votes, and if I do run on the Progressive ticket, the 'yellow dog' sort of Republicans will stick to the old party and their regularity, and I'll stand to lose that way. I may pull through if my plan of making a strictly personal campaign, on my personal record, and appealing for return without reference to factions, succeeds. It's too early yet to guess whether it will." That man was one of the veterans among Progressives, with a district at his back that has been proud of his record.

The congressmen are the most discouraged class of statesmen. You can find plenty of Progressives who will confidently tell you that Roosevelt isn't out of it at all; that there's going to be a landslide to him in October that will convince all sorts of Progressives of their duty to vote for him, and that he is liable to win. Then, again, there are the regular Republicans who positively insist that Wilson means free trade, hard times and Democratic mismanagement, and that when the country looks that prospect squarely in the face about October 15th it will sober off, and Taft will yet be elected; not because the people want him, but because they don't want a Democratic administration.

So, you find a good deal of division of opinion about who's likely to be elected president; substantially no division about who will control the next House. The House is conceded to the Democrats; the presidency is really regarded as an open, three-cornered fight, and the Senate—well, that's another story.

The Senate has only eight Republican majority now. Twenty-four of its members will be reelected by legislatures to be chosen this autumn. It is not certain that the Democrats will capture it, by any means. For the sake of making this situation perfectly plain, it will be worth while to give the list of expirations of senatorial terms that will take place March 4th next, for which the new senators are yet to be chosen:

The Senators Who Lose Their Jobs on March 4th

BACON of Georgia, Bailey of Texas, Davis of Arkansas, Gardner of Maine, Simmons of North Carolina, Tillman of South Carolina, Watson of West Virginia; total, seven, all Democrats, and five of them certain to be succeeded by Democrats. Gardner of Maine and Watson of West Virginia might be succeeded by Republicans, but the present indications are that each will succeed himself. If so, the Democrats don't lose one of their present senators.

Republicans whose terms expire and whose successors are yet to be chosen are Borah of Idaho, Bourne of Oregon, Briggs of New Jersey, Brown of Nebraska, Burnham of New Hampshire, Crane of Massachusetts, Cullom of Illinois, Curtis of Kansas, Dixon of Montana, Gamble of South Dakota, Guggenheim of Colorado, Kenyon of Iowa, Nelson of Minnesota, Richardson of Delaware, Smith of Michigan, Sanders of Tennessee, Warren of Wyoming and Wetmore of Rhode Island. If the Democrats make a net gain of four, they will tie the Senate. What is their chance, as you study this list? It looks to the average observer in Washington as if the next Senate might very possibly be tied. Borah, Bourne, Burnham, Crane, Curtis, Gamble, Kenyon, Nelson, Smith, Warren and Wetmore would seem altogether likely to be succeeded by Republicans; there is room for argument in some cases, of course. Briggs in New Jersey, Cullom in Illinois, Dixon in Montana, Guggenheim in Colorado and Sanders in Tennessee might all be succeeded by Democrats.

One thing that everybody counts on is that there will be a lot of hard fighting to control the senatorial elections in the close States, because the Senate may be the only wing of the government that can be kept out of Democratic control, and to keep it Republican would be a powerful check on an incoming Democratic administration. The big ones of politics, "the old he ones," as the boys here say, consider that the Senate is the best bet as a chance of keeping the country from getting entirely away from the Republicans. That is why the big fights will be made to control legislatures in the States that choose senators the coming winter.

Thus, it is a more mixed situation than has been seen since 1860. We may have a Democratic President, House and Senate after March 4th. We might get a

Republican President, with Democratic House and Senate; it isn't impossible, in form. We might have Roosevelt for President, with a Democratic House and a Republican Senate. In short, the possibilities

of combinations are enough to make an old-fashioned politician's head swim. Even he couldn't prophesy.

Out of such a muss, if the feelings of politicians generally reflect at all accurately the situation, there is very likely to come an anomaly of some sort, a political Chinese puzzle. When the country goes swooping Republican or Democratic, all three branches sticking together, it isn't difficult to guess somewhat what's likely to happen. The Democrats have a platform; they'll try to make it into law. So the Republicans. But suppose Roosevelt were President, trying to make his platform into law; the House were Democratic, sticking to its program, and the Senate a tie or Republican by one or two votes; now, wouldn't that be a fine kettle of fish?

That it will be a Democratic House is the one thing almost everybody offers to bet on at easy odds. But what sort of a Democratic House? For six months past it has been getting plainer all the time that the Democrats are falling into two groups that might be called regulars and progressives. A progressive Democratic member—that means, by the way, one who doesn't very fully endorse the policy that the Clark-Underwood régime has imposed on the present House—told me that a movement was afoot to get a big bunch of Democrats to sign up a round-robin, pledging themselves not to enter a party caucus, next session and next Congress, on anything except organization. He thought there were about sixty Democrats in the House to-day who were in sympathy with such a plan.

To boycott the party caucus would wreck the party machine in the House and promptly make the line of division between the opposing Democratic elements perfectly plain. That would be a long step toward further development of the "group system" in place of the party system of parliamentary control. In European countries they don't have a two-party system as here; they have groups, and legislation is secured by combinations of various groups or parts of groups on particular measures. It would be a tremendous innovation here, where we are so accustomed to the bi-party division; but many people think it would be a good thing, and whether it is or not, it's looming in sight. You can descry already five groups in the House: insurgent and regular Republicans, Clark Democrats, Underwood Democrats and progressive Democrats.

Add to that another group, composed of Progressives, elected on the ticket of the new party, and there is an assortment that would make the Reichstag look like a simple performance.

In the next Congress the ways and means committee will be vastly the most powerful group of men on the map. It will be a tariff-revision session, and this House committee must originate all tariff bills. Add to this the fact that this one committee names all the others, and it may be seen what a big power stands as the prize for the winning element to control.

Some Sane Public Men are Feeling Blue

WITH all these complications and uncertainties ahead, it is easy to understand why many public men are going away from Washington feeling blue about the outlook. I refer to those sincere, earnest men who want Congress to do real business for the country; who believe the tariff must be sanely revised; who want good legislation for control of corporations, for the government of the railroads, the administration of the Panama Canal; who would enact workmen's compensation measures and many other social and political reforms.

Lately, considerable talk has been heard about getting together a conference of leading publicists, perhaps early in October, to consider this situation, to pick out a list of good, useful, tried, efficient legislators who are in danger of being defeated because of the triangular fight, and to address an earnest appeal to the country to save these men; to beg their respective districts to look above and beyond mere party and factional considerations, and to preserve these men for the service of the nation. Such a list would include some Progressives, some Democrats, some regular Republicans. It would be a mighty good thing if such a movement could be set on foot, with backing enough to make it represent some authority with thoughtful voters. It isn't going to help much if we lose most of the ablest men in Congress.

A Simsville Lady

How a Waffle-Iron Was a Means of Introducing Her

By Hamilton Pope Galt

SIMSVILLE is not at all a worldly place. Worldliness plunges through the village at the rate of sixty miles an hour on the flying trains, or turns sharply away in the direction of Detroit on the great steamers. To the worldly people on the trains, Simsville is only a small part of a blurred and fleeting landscape, only a gaping lake on one side and a fanning grove on the other, and a second's changing in the tune of the wheels from treble to bass over the bridge. To the worldly people on the steamers, Simsville is only a dot on the crooked shore-line, and none knows that the village is there.

Simsville is as independent of the world as the world is of Simsville. Beyond their own horizon all is outer darkness.

Simsville conduct is modeled after Simsville standards, and there are few who lay themselves open to criticism, so, for lack of food, disdain grows weak and wan in this excellent village.

You can tell the day of the week and the hour of the day by consulting the Simsville clothes-lines. Bright and early Monday morning the white garments begin to spread down to the end of each and every Simsville yard, and back to the house again. If the white streak goes only as far as the fence, it is near ten o'clock. If the town reëchoes to the sound of falling suds, it is eleven-thirty. If the rattle of kitchen-stoves is heard throughout the town, you will soon hear the whistle blow for twelve o'clock—dinnertime.

Tuesday is marked by the thumping of the iron on the ironing-board, and Wednesday the delicate and tender bread-dough is set to rise on the back of the stove. Thursday the voice of the sewing-machine throbs in the land. Friday the ladies appear with their heads wrapped up in towels, and rugs are subjected to roughness and abuse. Saturday there is a lady at every kitchen-door tinkling an egg up and down on a meat-platter.

From Monday until Saturday, at a quarter to six each day, meat, potatoes, apple sauce and bread and butter are set forth for the evening meal.

Such was the village from which Ben Simms, well-to-do farmer and support of his widowed mother and two sisters, loaded a cargo of eggs, apples and pork upon his sailing-boat and set sail for Detroit.

Such was the village to which Ben Simms sailed back from Detroit with a blue-eyed wife to share the home of his mother and sisters, not a Simsville girl, but a girl from the outer darkness!

Bessie was ushered into the chaste coolness of the parlor, that room whose rag carpet was sheltered from the sun through the year, and whose fireplace was guiltless of any fire, and whose doily-draped furniture was sacred to funeral occasions, and the like.

Such was the welcome the blue-eyed wife received from the proud and passive ladies of Ben's family.

The girl was glad when the time came to repair to the dining-room for steak and potatoes.

Bessie did not cry. She did not consider that it would be any pleasure to be a long-suffering martyr. Instead, she started in to thaw the ladies out. She made an effort to help with the housework, but "Law! She couldn't do things right!" She was not a Simsville girl and could not be expected to know at which angle the organ drapery should hang, nor the exact place to pin the tissue-paper roses on the lace curtains. She knew nothing at all about housekeeping. Mrs. Simms and her daughters merely smiled at her efforts and then went patiently over her work and put things right.

Bessie even essayed to do some cooking. She ventured far afield. She even strayed from steak and potatoes for dinner. It was awful! She made bread out of corn-meal and put it on the table hot. She even served up a queer-looking mess called "scaloped potatoes." The Simmses thought she was very "queer." They had never heard of such a thing! It came from the outer darkness!

One evening Mrs. Simms and the girls came in from a long drive which they had taken to a poor old lady's house, whither they had taken eggs and salt meat and other rations. Bessie had thought to provide an agreeable surprise, and had supper steaming on the table.

Her sisters-in-law removed their bonnets and put them carefully away and took their places at the table. Mrs. Simms took her place, also, and began to pour the tea. She scrutinized the tea very closely. It seemed to be "queer-looking." Bessie had made it. The girls took the cue from their mother.

Mrs. Simms looked over her spectacles at the hot bread which had been made of corn-meal, at the scaloped potatoes, and then ate cold bread and butter. The girls did likewise.

Ben was not there. He would have taken as much delight in the hot supper as in the beautiful red of his young wife's cheeks. He would never have known what an uncomfortable red it was. He would have kissed her and been happy. But he was not there. Bessie could only eat her own concoctions and pray for him to come, and she patiently waited for him.

He did not come, however, until all the supper-dishes had been cleared away in the proper manner by the proper Simsville ladies.

Mrs. Simms was kind and polite, and the daughters were kind and polite, but it was only too evident that they did not welcome innovations, that they were satisfied that their ways were not Bessie's ways.

When Ben did come, his mind was much occupied with what he had to tell. He had found a family in great distress. The minister out on the "Renaud Line" was threatened with blindness, and almost helpless, and at the same time his wife was down with an illness. They had been suffering for a long time.

"They are in a terrible fix!" said Ben. "Actually they are almost starving, and I only happened upon them by accident. My! I am glad I happened to stop there! He is one of the finest men I know, always doing something for somebody, and yet he never lets anybody know anything about it when he needs help. He is almost a stranger in these parts. Came up here from Tennessee, or some place down there. I would have cooked up something, but there didn't seem to be anything in the house to cook."

Bessie forgot all her own troubles in listening to the story of the blind minister and his sick wife. Mrs. Simms forgot her daughter-in-law's shortcomings, also.

When Bessie got down-stairs the next morning, she found the house deserted. Everything was precise and orderly. There was a fire in the dining-room, and her

wind was cold but bracing, and Bessie was happy and young and strong, and she enjoyed her lonely walk.

The store at Renaud was the smallest commercial establishment the girl had ever seen. There was a dividing line somewhere in the rear which marked the end of commercial and the beginning of domestic life. But it was an imaginary line.

A woman and two babies came forward to see what Bessie wanted. One baby was carried in arms, and the other trailed by the mother's skirts.

Bessie learned that she had another mile to go before reaching the minister's house. She shifted her bundle from one arm to the other and tried to see something which she could buy and thus compensate for disturbing the domestic peace. But she saw nothing that could be put to the slightest use by anybody, so she was compelled to make an embarrassed and foolish retreat.

She walked and walked without meeting anybody at all, until at last she came upon a little boy wrapped in a red muffler and hurrying along with a clean letter which he held very fearfully.

From the boy she learned that she had passed the lane leading to the minister's house. And at length Bessie with her bundles arrived at a house which she felt sure was the right one.

"It must be a lovely place in the summertime!" thought Bessie, for the wind whistled through masses of dead-looking vines.

The front of the house was tightly closed, and the snow on the front doorstep untrodden. So Bessie trudged around to the kitchen door, where she was admitted by her mother-in-law!

There was mutual surprise.

Her sisters-in-law were there, also. Bessie joined the group around the fire, where the minister, happy to have company, was using all his powers of entertainment.

Mrs. Simms vanished quietly from the group from time to time, and sometimes one or the other of the girls was beckoned away, quietly and unobtrusively, without disturbing the host's low-voiced anecdotes.

Bessie caught a word or two of the conversation between the women in the next room. They were evidently looking at what she had brought, and she heard one of them say "Walked" and once Mrs. Simms was heard to say, "Wasn't that just like a Simsville woman!"

And Bessie realized that she was being paid the very highest compliment that it was in her mother-in-law's power to bestow.

When dinnertime drew near, Bessie stole out to the kitchen. She found Mrs. Simms glowering at a monstrous-looking cooking-utensil with dreadful open jaws.

"Don't you know what that is?" asked Bessie.

"No," was the simple answer.

"Why, they are waffle-irons. They are a treasure! I am going to make some," insisted Bessie.

The mother-in-law offered no objections.

Thus encouraged, Bessie set to work. She stirred golden ingredients, and beat up eggs, and soon there was a spattering and a frying. She made batter-cakes out of corn-meal, and she made waffles.

They were a tremendous shock to the minister at dinner.

"Waffles!" he cried. "Sure enough waffles!"

He cried the news aloud for the benefit of the sick lady, who was equally delighted and amazed.

The corn-meal cakes shared the glory with the waffles. The rapture of the sick people was pathetic. Bessie watched them closely.

Even Mrs. Simms went so far as to taste one. Her elder daughter had already partaken of two, and the younger began to make up for lost time. Soon there were no more.

"It was mighty sweet of you, mighty sweet!" said the minister. And it really seemed as though Bessie's mother-in-law agreed with him.

"Well, daughter—" she said, and then stopped suddenly. Bessie squeezed the friendly hand which had found its way into her own, to show that she understood.

Sealing Industry in Newfoundland

PEOPLE generally think that seals are all caught for the value of the skins. In Newfoundland the fur of the seal is very coarse, and for this reason little value is placed on it for coats, caps, muffs, etc.; and yet the skins are not thrown aside as waste material. They are sent to this country in their raw state to be tanned and used as leather in making pocketbooks, satchels, boot and shoe tops. The main source of income, however, is from the fat or oil. The young seals are practically all born about the first of March, and they have the greatest amount of fat when they are from two to three weeks old. That is the time when the fleet starts out from St. John's. About twenty-five vessels, all steamships, make up this fleet, and hustle, for the season is very short, lasting only about six weeks. In that time they take about two hundred and fifty thousand pelts, which are valued at half a million dollars. EVELYN M. SADLER.



"You don't keep such a thing as a set of waffle-irons, do you?"

breakfast had been thoughtfully set aside for her where it would be kept warm. There was mush and milk, tea and cookies.

After eating her breakfast, Bessie went out to the stable. She did not put on her rubbers, for the snow in the path to the stable was packed hard. The horse and cutter had been taken out. She hurried back to the house, for it was cold. She put on her warmest wraps and went to the store.

"How do you get over to Renaud Line?" she asked the storekeeper.

"You can go over on the local. No, you can't either! They don't stop there. But you can get off at Bagdad and walk back."

"I'll do that!" declared Bessie.

"It's about two miles," warned the storekeeper. "Oh, I won't mind it in this weather. I am going out to cook some waffles and batter-cakes for a sick man from Tennessee," she volunteered. "You don't keep such a thing as a set of waffle-irons, do you?"

"Waffle-irons? No."

"Well, give me a skillet and some corn-meal and some nice eggs and butter, anyway."

"It makes a pretty good-sized parcel," remonstrated the man.

"That's nothing," said Bessie.

Bessie caught the train and arrived safely at Bagdad, parcel and all, and then started to walk back to Renaud.

It was a splendid walk along the railroad-track. The wind blew from the lake, bringing the sound of thousands of ducks and geese having an icy bath. The



Initiated

By Arthur Wallace Peach

HE WHO has loved one blossom of the earth,
Or common thing oft deemed of little worth,
Is one with all the earth's eternal things,
Outlasting hills, the stars, the might of kings.

He who has loved one human heart does know
The hearts of lovers centuries ago;
In Babylon he walked through evening shade
And heard the whispered love of man and maid.

He sat before the boat on Galilee
And heard lips frame the wondrous prophecy
Of coming times when hate should pass away,
War cease, wrong die and love rule life for aye!

Yea, or Nay?

By L. D. Stearns

STRAIGHT, all-around living is what pays in the long run; not the religion that expends itself in overmuch effort of talk, but the still, small "yea, yea," and "nay, nay," that is heard by but two, God and one's own soul.

The thing life requires of me is not the thing she requires of you. Each soul has its own life to live, its own individual plot of earth to cultivate and make bright with flowers; but of every soul that walks the earth God requires one and the same thing, unvaryingly, ITS BEST.

Whether it be in the hustle of business, the school, the home, painting a picture, or tilling the soil, it is ever the same; high or low, great or small, wise or simple, the clarion call rings loud and clear, echoing and reëchoing as it reaches heart and soul, straight from God, "YOUR BEST! YOUR BEST!"

The More Abundant Life

By William J. Burtscher

IAM come that they might have life more abundantly." Yesterday I saw a house that had been built by a carpenter for his own use. It was just an ordinary dwelling-house of two stories, containing about eight rooms. But there was something very odd about that house—it only had one door leading to the outside. The builder had been economical, to be sure. One door was all that was necessary to admit of entrance, but it was not an abundant entrance by any means. In the course of a year, the family in that house is obliged to take many an extra step because of the lack of sufficient doors. All economy that looks like economy in the beginning is not economy in the end. The man who enjoys the more abundant life is the man who plans in time to save unnecessary steps, who avoids all possible waste of energy and who does not limit himself to but one door for the sake of economy. There must be more than one door to the abundant life.

Here is a picture of the more abundant life—a hill, a spire, a house, a wall, a road and a river—all seen through the window of a certain room.

Life is like the hill, which is beautiful at a distance. Life is the most beautiful as we look back to what it was, and as we look ahead to what it may be. The one makes us sad, while the other fills us with hope. It takes both to make the abundant life.

Life is like a spire, which points to a happiness in another world. This happiness that we enjoy to-day is fleeting. To-morrow it is gone and has to be repeated—that is, happiness needs constant repetition. But it promises a more perfect happiness that will endure. The abundant life puts great stress upon the happiness of another world.

Life is like the house which has more than one door and more than one window; and also has a dining-room, a bedroom and a parlor. Life has many windows to let in light, and many doors to let in her treasures. Life has a dining-room, for we do like to eat. It has a bedroom, for we do like to sleep. It has a parlor, for we do like to visit. There is no limit to enjoyment in the more abundant life.

Life is like the wall, which has its limitations. Every day we are made aware

of the fact that we can go so far and no farther, that we can learn so much and no more. But the abundant life is so much concerned with its possibilities that it does not grieve because of its limitations.

Life is like a road, which goes everywhere. The road that passes your home connects with every other road in the land. Follow it far enough one way, and it will take you to New Orleans—another, and you get to New York. Life goes everywhere. It goes where man has gone for ages, and explores new fields. But when it goes into the new field a second time, it has started a path, which soon grows into another road. A road suggests motion—progress. The abundant life is full of activity and progress.

Life is like the river, ever different and the same, ever passing and here; deep, wide, long and everlasting.

Life is all that and infinitely more. Everything on the farm or in the store has some relation to life. What is your picture of life? Life has many doors, and he who makes use of the most of them enjoys life the most abundantly. Let us remember this, that Jesus came that we might have life more abundantly.

Saw Wood!

By Aubrey Fullerton

"IT IS easier to saw wood," an old friend in the country was wont to say, "than to go through the motions of sawing wood." That is, he meant to suggest that it is easier to work than to make believe to work.

Doing things thoroughly is the best policy. Pretending is very seldom satisfactory, for sooner or later it proves to be harder work than genuine doing. It is wasted effort, too. Our collie dog nearly wears himself out every night barking at the moon and trying to catch his own shadow, but his exertion is not more idle than that of a person who makes pretense of working and really does nothing.

Be thorough; make your effort count for something; be busy, but be genuinely busy, for a counterfeit worker is worse than a counterfeit coin. When tempted to pretend instead of doing, think of the make-believe method of sawing wood, and save your strength.

Service

By M. G. Rambo

THE joy, the blessing and the final result of service depend a very great deal upon the mental attitude toward it. Everyone recognizes the fact of duty; but there are various ways of looking at it, and herein is a vital secret of life.

One sees his duty merely as a task that is thrust upon him. He is bound to it by the eternal nature of things, and he is forced to undertake it in order to be right. He cannot question its authority, and he realizes its obligation; but in his heart he knows that he would avoid it if he could. To him duty is a veritable bondage; he is a slave under the lash; and there can be no spontaneity, no thrill of gladness and little of character-upbuilding in his service. The command of duty is a force which enthralles him, and as such it is a yoke which galls him.

Another looks upon service as a purchase of favor. He considers the reward, whatever that term may mean to him. It may be ease of conscience, or the subtle gladness which accompanies the satisfaction of a duty faithfully rendered, or the comforting assurance of the great final reward. He is a hired servant. He considers those duties which engage to pay him in the coin he seeks, and only those which will pay him best. His great interest is in the pay-check, and not in the service itself. Nor can such an attitude, however consciously or unconsciously assumed, foster the most hearty loyalty to the right, neither will it permit of the fullest enjoyment of accomplished duty.

To His disciples Jesus said, "I call ye not servants," neither bond nor hired, "but friends." Herein is the deepest significance. Friendship comes only out of the free heart. It involves no bondage, it contemplates no sale. The service of friendship is always glad; it is never measured. It may weary, but it never wears. Its cost is not counted, its sacrifices leave no regrets. Its rewards are the greatest of all rewards, but even they are not for hoarding. The bird's song comes from a heart of love; the singer is thrilled as the hearer is, but it keeps no record of the times it is sung.

Cheerful Feelings in the Backbone

By Edgar L. Vincent

A LETTER came to me the other day. Out of the many which come every day fluttering out of Uncle Sam's great gripsack, this one did me the most good of all. I know the kind friend who wrote it will forgive me if I take just a word or two from it and pass the message on to help somebody else. Listen:

"I cannot help telling you what a cheerful feeling pervades my backbone every time I receive one of your letters. You always say such comfortable things."

Now, that did me good. I would rather this friend should be able to tell me that truthfully than to say, "Thank you for the million-dollar check you just sent me!" Because the world needs to be comforted more than it needs gold. As we go up and down the dusty paths of life, we touch elbows with many and many a man and woman; we look into each other's eyes; maybe we stop long enough to say, "Hail!" and "Farewell!" But, after all, it is but the surface that we see, the fleeting and the passing that we feel. We do not see the loneliness which shines out of the eyes so wistfully. We fail to catch the note of weariness which pushes itself through the swift-spoken words, coming, though they may, through a smile.

"But it costs to let these fellow travelers into our hearts!" Did you say that? "Yes, it costs time, costs effort we can ill afford to make, costs heart, costs life." Was that what you said? And did you really mean it? Ah! dear heart, it costs a thousandfold more not to stop, not to say the kindly word, never to feel the thrill of the need of those who cross and recross your road from day to day.

What does it cost?

It costs joy in the heart, peace in the soul, the satisfaction of lifting a little bit at someone's heavy load. It costs a gleam of glory shining through the wide-open door of the Radiance over Yonder! It costs love's supremest treasure, faith of man in man! For not to say the kindly word, not to do the little deed which gives comfort, is to wither the root of the heart and turn it into dead ashes.

We hear it often said in our day, "We don't need any more sermons!" Oh, yes! We need sermons, but we need them to come from hearts all aglow with love and sympathy and fellow feeling. We love them most when they get our hand in theirs and hold them tight when we are tired and the way seems long. They do us most good when they look out of eyes which shine through a tear—how that drop magnifies love! We listen with the whole heart when they quiver from the lips of the little child or ring from the voice of one who has known every step of the way we have trod and can hearten us as our feet seem just ready to slip. Sermons that come with hands and feet, with heart and voice—these are the ones which stir us to higher and nobler endeavor.

And why should we not be always ready to do these little things? The command does not come to very many of us, "Be kings!" But we are to be kingly in everything we do. Few of us ever hear the call, "Come! I have something mighty for you to do!" To us all does come the word, "Be great when you do this little thing!" It is given to us rarely to give much of gold. Not a day passes but we may give richer treasures by far—the love of a good, kind, tender heart.

But away out here on the farm—what chance is there here for me to do any of these things?

Never say it! Look about you for just one moment. Then soften your voice when you speak to Father and Mother!

Let a little bit of love shine out when Brother and Sister come near to you! Have a smile and a kindly word for every man, woman and child whose life you touch. Into the letter you write, put something that will warm and lighten and make glorious the heart of the one who reads it by and by. Do this and know that heaven will be in your own heart and paradise in the soul of those who feel the touch of your life!

Sleep is temporary death, to which the awakening is the resurrection to a new life, which is influenced by the day-lives preceding it. Death is temporary sleep, to which the resurrection is the awakening to a new life, which is influenced by the earth-life before it.

The Release of Cain

By Bolton Hall

NO, SIR; I don't think it was a dream, and it couldn't have been that I imagined it all, for you know I was born and brought up in Mexico, out on the plains, and I'd never heard that story about Cain.

It was the second day that I had been lost, lost on the bare bad lands, or maybe it was the third. I had no way of keeping track of the time, and lack of food and water had made my head dizzy so that I couldn't know hours and minutes. I despaired of ever seeing a human face again. As far as the eye could see was only desert—endless desert—and nothing was moving but the relentless sun and millions of little ants that scurried around my feet. For a time these seemed to interest me, at least they and I were alive; but there was nothing else, and at last I dropped down—to die.

Just at that moment I felt some quick blows on my boot, and the whir that had been in my ears so long seemed to grow louder. I looked at my leg and saw that as I fell I had pinned a big rattlesnake to the sun-baked ground with the side of my boot, and he was striking again and again at the leather near his head.

My stick was still in my hand, and I raised it—the snake was working forward under my boot, in a minute he would reach my knee, but the thought came to me almost at once, why should I kill him? I must die sometime. The snake was here in his right place, a very king in his handsome vigor, and I had hurt him. He wanted to live. I could see the strong muscles swelling under his skin as he struggled nearer and nearer my knee.

I threw my stick away and shut my eyes. Then I felt a burning feeling where he struck me. In a moment he had stopped striking and slid easily from under the weight of my foot, slid away—to nowhere!

I give you my word there is not so much as a tuft of sage or a stone on all the plain, nor there wasn't a hole but the little sun-cracks in the earth.

The Transformation

As I looked around wondering and trying to make out where he'd gone to, I saw a man standing beside me who came from nowhere, too. He picked me up and carried me all that day until nightfall, when we came to a ranch on Gyp Creek. He was a big fellow and broad-shouldered. He said he was Cain, the son of Eve and of the snake; and he told me how his brother was a sheepman, that he had killed him, the same as we kill the sheepmen here, and God had thrown him back into his father's shape and told him he must live like that and be against every man and every man's hand against him until some man that he would bite and that could kill him should love him enough to spare him.

The power that required him to take the snake-shape made him snakelike too, and I could feel how intense were his sufferings, for, though the passion to kill was upon him, the memory of the crime committed so long ago remained in anger and hate, and he wouldn't want to strike, but he couldn't help it. It was his punishment that he *must* strike.

And he went on to say that it was the hate of our brothers that made all the evil of the world; that love was the Savior that would redeem the world, and that before we can love, which is doing good, we must quit hating, which is doing wrong. He said that it was not enough not to hurt anyone, nor always to do good to everyone; that to love truly, we must forgive everyone, those who would injure us and those who treat us unjustly. I remember just the words he said, "We must even cease to wish that they should get their deserts. The moment we accept the order of nature, which is the kindness of God, and so get free of all bitterness, then begins the real life, and the happiness of the man who so lives is as natural as the growing of a plant in the light. Only such love satisfies the soul and gives happiness, which is the reward of love." He said that, if we love, though we be dead yet shall we live again, and he told me many other things that I can remember only in my heart. I am an ignorant man.

These ranchmen claim that I drifted in at Gyp Creek about midnight, plum crazy with nothing but a bad bruise on my knee; but I know better. Well, sir, I had killed men in my time, but since that day I've never killed a living thing, and never will.



OUR YOUNG FOLKS' DEPARTMENT

CONDUCTED BY COUSIN SALLY



Bobo and the Basket

By Grace Utt

ONCE, a long time ago, there lived in a tiny cottage at the foot of a high mountain a family of three—father, mother and their little son.

The boy had been named John, which was his father's name, but when he was a wee baby his mother used to sing strange stongs to him about "Bobo" (who was not a little boy at all, but a dog), and the baby liked the word so well that he always called himself "Bobo"; and even when he was old enough to know his real name he still wanted to be called "Bobo," and so "Bobo" he was, at home and in the village near by, until no one remembered that he once had such a good and simple name as John.

Bobo's father worked at broom-making in the village, and because the walk home was so long in the heat of noon, his good little wife prepared a wholesome lunch for him every morning. Sometimes she would say, "Never mind to wait for your lunch this morning. I'll be sending Bobo with it when it is ready." And then how her hands and feet would hurry for her as she peeled the apples and made the pies that she knew her husband liked so well. And sometimes she would hastily prepare a chicken or some little cakes, all spicy and full of good things, so that there would be some surprises in the basket for the hungry man at noon.

One morning, when Bobo was to carry the basket to his father, it was unusually full of "goodies," and as Bobo started out his mother said, "Now, Bobo, hurry right along. Sometimes you do be loitering, and I can't have you setting the basket down to-day. Someone might take it, and then your poor father would have great hunger."

So Bobo set out, going along as proudly as a soldier, and seemed never to think of halting or resting. He had often gone into the village and knew the road well, but there was another road which seemed to go almost the same way, and Bobo was curious to know just where it would lead. So much of it led through a clump of trees that he hadn't much idea where he was going, but he knew that it was more than two hours until his father would want his dinner, and he kept saying to himself, "Well, if it doesn't lead to the village, I can turn back and get there by noon."

And so he went on, farther and farther, and though it was early in June, the sun was hot when there was no more shade, and poor Bobo's feet began to feel heavy and hot and tired. He wanted to rest a little while and ask someone to show him how to reach Milltown, but he could not rest in the glare of the sun, so he pulled himself along until he reached another bunch of trees which made a patch of shade about the size of a little ten-year-old boy, and here Bobo threw himself down to rest.

Something inside of Bobo now made him wonder what was inside of the basket, and knowing that he need only lift the lid to find out, he did so, and, oh, my! there were four pieces of fried chicken, so brown and juicy and tempting, and a pie as big as the A B C plate Bobo had when he still sat in his high chair. And there was bread, and a tiny jar which must have jam in it, and some cakes—but poor Bobo couldn't look at them any longer. He was so hungry, and

this was for his father, and he must hurry. He had no time to waste now.

He looked ahead of him, and he looked behind him, and then his wise little thoughts began to chase away his foolish ones, and he said, "Well, I know how to go back, and I don't know how to go on, so I'll start right now and get to Father before noon."

But it seemed hard to go back over the long, hot road, when it was so long since breakfast, and after looking at these good things to eat, too. It seemed to Bobo that three pieces of chicken would be plenty for his father, and surely his father could

hopper, and it hopped right on to the handle of the basket and looked at Bobo and said, "Tell me now, is there something here I can eat? I'm starved; give me some food, or my legs will drop off."

Bobo was so startled at such a bold visitor that he couldn't answer, but the grasshopper wouldn't be put off. He hopped down, lifted the lid, and took out the third piece of chicken, chuckling all the while over his good luck.

Bobo wanted to tell him about how hungry his poor father would be, and that he must have that very piece, but the grasshopper paid no attention. Instead, he hopped over and sat himself down on Bobo's nose, and seemed to be very comfortable, indeed.

Bobo tried to make him get off, but it was no use, he stayed until he had finished his piece of chicken. Then he hopped back, lifted the basket lid once more and took out a tiny cake. Bobo was glad that he took only one, but presently the grasshopper made a queer noise, like gurgling water, and about ten more grasshoppers came, and each one took a cake. At this poor Bobo began to cry, which must have frightened the grasshoppers, for they began hopping and were soon far away.

They had no sooner disappeared, however, than along came a flock of geese, and before Bobo knew what they were about, they had tipped over the basket, and had eaten everything in it; one great big goose had even swallowed the jam-jar!

Bobo was just looking for a stick with which to chase them, when along came a man on horseback, who frightened the geese away and at the same time woke Bobo out of a sound sleep.

"Why, Bobo," he said, "what are ye doin' out here, and yer mother and father half crazy wid huntin' ye?" Bobo got up and rubbed his eyes

and began to cry. "They ate all Father's dinner, those grasshoppers, and there's not a crumb left, not even the jam-jar—an old goose swallowed it," said Bobo in tears and wondering what it all meant.

"What d'ye mean about a goose? Ye've got jam all over yer face, seems to me," said the rescuer, "but never mind that, git up here by me, and let's get home wid ye."

Bobo held the basket and the good man held Bobo, while they galloped off home. Because the sun was so low in the western sky, Bobo knew it must be late in the afternoon, and was wondering whether he should be punished, and what his father had done without his dinner.

Perhaps, if it had been a few hours earlier, Bobo would have received a scolding, but his mother and father were so glad to see him safe once more that they forgot to do anything but hug him and kiss him over and over again.

Presently Bobo thought of his father's dinner. "And, oh, Father," he said, "there's not even a scrap left, and a goose ate up the little jar, Mother, oh—I just couldn't—"

"There, there, child," said his mother, "you don't know what you say. Half the chicken is there, and lots of cakes, and almost all the jam in the little jar, but if they were gone, it would make no difference, for we have you still."

I don't know whether Bobo carried his father's dinner very soon again, but I know that if he did, he certainly did not try the strange road again.



"Here Bobo threw himself down to rest"

never eat all those cakes! Besides, he could go so much faster if there was not so much hunger inside of him. It would surely be better to stay there in the shade and get some food in his stomach. He had heard his mother say that good food made boys very strong, and there was no doubt in Bobo's mind about that food being good.

So he ate a piece of chicken—it was a leg (Bobo always liked the pieces with handles), and then he ate two pieces of bread and some cakes. He opened the little jar, and sure enough there was jam, the kind Bobo liked the very best. "Such a lot there for father," he thought, and took out two more pieces of bread and spread them thick with jam. "That must have been a great big chicken," said Bobo. "Two pieces would surely be enough for Father," and so down into Bobo's little stomach went the second piece of chicken—another leg!

You might think with these two legs and his own, besides, Bobo could have reached the village in double-quick time, but somehow, after he had eaten all he needed to make him strong, he began to feel as though he never wanted to use his little legs any more, and, besides, it wasn't good to hurry so soon after eating. (Bobo thought he remembered hearing that once.) So he stretched himself on the grass for a few moments, being careful, first, to close the dinner-basket so that no bugs or birds could get into it.

But Bobo hadn't been lying there very long, when along came the funniest grass-



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First Glimpses of Fall Fashions

Clothes That Show the Best of This Season's Modes

With Designs by Grace Margaret Gould



No. 2049—Waist in Pointed Effect

32 to 42 inch bust. Material required for 36-inch bust, one and three-fourths yards of thirty-six-inch material, with one yard of thirty-six-inch material for the lower part of the waist and the girde. Price of this pattern, ten cents



No. 1862—Tailored Shirt-Waist

32 to 46 inch bust. Material required for 36-inch bust, three and three-fourths yards of twenty-four-inch material, or two and one-fourth yards of thirty-six-inch material. The price of this shirt-waist pattern is ten cents



The above illustration shows the back view of pattern No. 2049. This waist design offers a chance for combining two fabrics, which is one of this season's new style features. The lower part may be of cloth with the upper part silk or heavy lace, or the lower part may be silk with the upper part lace or net

THERE is a wide range of fashionable colors from which to choose this season. Tailored suits and one-piece dresses are modish in dark blue and brown, in tan, in gray and in black-and-white mixtures. The new trimming colors are deep reds, bright reds, odd shades of green, yellows that are both creamy and those which lean toward the orange tones and much black and white in combination.

THE new fabrics are unusually interesting this year, and it is quite the vogue to combine two contrasting materials in making a gown.

The whip-cords, Bedford cords, serges and diagonal mixtures will all be good for tailored suits and simple one-piece dresses, while moire, ribbed silk, chiffon and all the soft crêpes and satins will be used for dressy costumes.



No. 2113—Belted Coat with Knickerbockers
6 to 12 years. Pattern, ten cents



Any girl will find this coat, Pattern No. 2093, a most useful addition to her fall and winter wardrobe. Serge, mackinaw, chinchilla ratine and mixture cheviots are good materials to make it of, with plain bone or fabric buttons to match the coat



No. 2101—Kimono-Shoulder Waist: Long Sleeves
32 to 40 inch bust measures. Price of this pattern, ten cents



No. 2102—Three-Piece Skirt with Inset
22 to 30 inch waist. The price of this pattern is ten cents



No. 2093—Three-Quarter Top-Coat

12 to 18 years. Material for 14 years, four yards of thirty-six-inch material, or three and one-fourth yards of fifty-four-inch material. Price of pattern, ten cents



No. 2115—One-Piece Dress: Large Pockets
4 to 12 years. Pattern, ten cents



No. 1954—Four-Gored Skirt

22 to 36 inch waist. Quantity of material required for 26-inch waist, seven and five-eighths yards of twenty-two-inch material, or five and one-half yards of thirty-six-inch material. The price of this pattern, ten cents

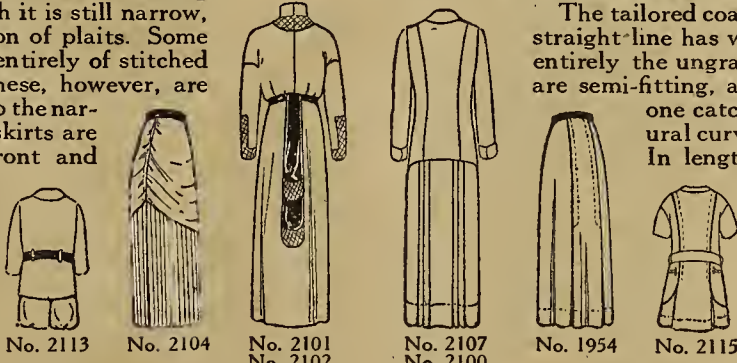
EVERYTHING in fashions just now is following in the delicate trail of the feminine. The silhouette, though still straight, is softer in line, and even the new fabrics are doing their part to make the fashions for this autumn and winter graceful and womanly.

The plain mannish skirt is becoming more feminine. Though it is still narrow, it shows the introduction of plaits. Some of the models are made entirely of stitched box plaits. Many of these, however, are taped underneath to keep the narrow-figure line. Other skirts are made with a plaited front and back panel and plain sides. The dressy skirts often show draped effects, some of these taking the form of the pannier, but so modified that it bears little relation to the one of Marie Antoinette times.

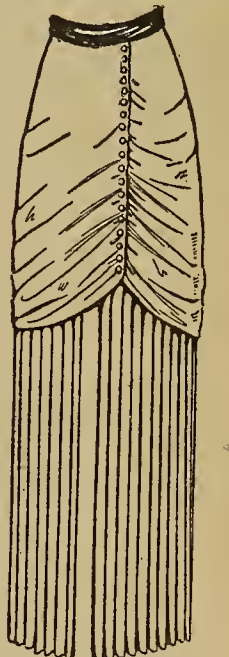
IT IS not only the skirt that shows the graceful broken line, but the bodices and coats; and everywhere there is the influence of the Directoire. The new waists have large Directoire revers and collars with Directoire points over the shoulders and sleeves that are set in the armholes and finished with deep cuffs.

The tailored coats plainly show that the straight-line has wavered. They have lost entirely the ungraceful box effect. They are semi-fitting, and when they are worn, one catches a glimpse of the natural curves of the figure beneath. In length these coats vary from thirty-two to thirty-four inches, and they have long set-in-the-armhole sleeves.

When the dress sleeve is long, it is tight fitting and plain, while waists with the elongated shoulder are very fashionable.



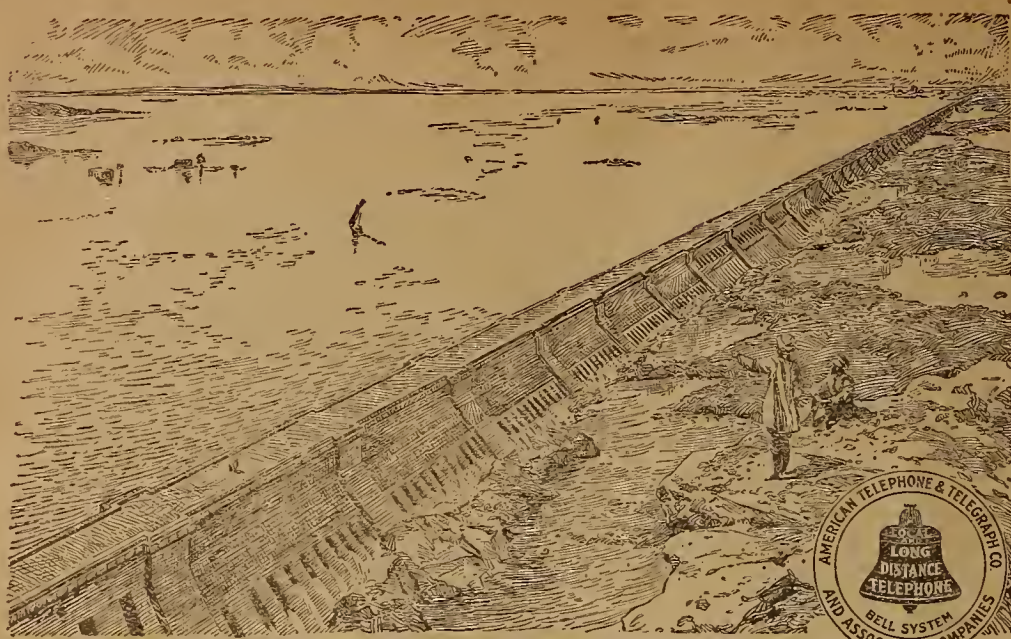
No. 2113 No. 2104 No. 2101 No. 2102 No. 2107 No. 2100 No. 1954 No. 2115



No. 2104—Kilted Skirt with Shirred Pannier

22 to 30 inch waist. This skirt shows the kilted underskirt which is so fashionable just now, and although the overskirt is in pannier style, it is decidedly modified. Pattern, ten cents

PATTERNS and the pattern catalogue may be ordered from the nearest of the three following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado.



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A New Crocheted Cap

That is Easy to Make

By Mrs. C. I. Edson

MATERIALS required are two skeins of cream-white and one skein of pink Dresden Saxony, one large bone hook and one-half yard of Japanese silk. Work loosely. Ch. 2. Join.

1. Work 10 singles into this ring. Join.
2. Into each of these singles work a puff as follows: Ch. 3 loosely, thread over hook, once, draw up a loop through first single, draw up loops even with 3 ch., thread over, draw through 2 loops (2 loops remain on hook). Thread over, draw up another loop through same space as before (draw up all loops used in the puffs so that they will be even when taken off), thread over, draw through 2 sts. (3 sts. are now on hook). Thread over, draw up another loop through same space, thread over, draw through 2 sts. or loops (4 loops are now on hook). Thread over, draw up another loop through same space, thread over, draw through 3 sts., thread over, draw through 3 sts., thread over, draw through 2 sts. This completes one puff. Ch. 2, make another puff in next single. Make 1 puff in each single in this row, and always ch. 2 between puffs throughout the work.
3. Make a puff in each puff and one under each 2 ch.
4. Same as third row.
5. Work a puff in each puff only. (Do not make a puff under 2 ch., as crown of cap will now be large enough.) Continue this row until cap is of required length. Eight rows of puffs complete the cap illustrated. Break yarn, and fasten. Turn cap wrong side out, as wrong side of work is used for right side of cap.



This very becoming cap is made of Dresden Saxony wool and lined with Japanese silk



work will be used for right side, as in cap. Make pink puffs under 2 ch., instead of in puffs, as before.

After completing second row of puffs, work 1 row of shells as follows: Ch. 3 quite loosely, thread over twice, draw up a loop under the 2 ch. of preceding row (the shells are used right side of work for right side of cap), draw loops up even with 3 ch., thread over, draw through 2 loops, thread over, draw through 2 remaining loops. Thread over twice, draw up a loop through same space as that of preceding loop, draw up these loops just a bit longer than preceding ones were after taking off, thread over, draw through 2 loops, thread over, draw through 2 loops. Repeat until 7 trebles have been made in same space, drawing each successive loop up a little longer than the preceding one. Skip 2 spaces, and fasten in third space with a slip-stitch. Ch. 3 loosely, make a shell in same space as preceding shell is fastened.

Fasten last shell in same space as first one was made. Make a pompon of pink and white yarn, and fasten on cap here.

To line the cap: Cut the silk on a true bias, and join selvage edges so as to make it long enough to go around cap. Be careful not to stretch cap or silk. Fasten into each puff, being careful that stitches do not show through on right side of work. Do not break thread between fastenings. Seam together, and shirr top of silk, and fasten invisibly to crown of cap. If more rows of puffs were made, one could run ribbon through one row.

Fasten on pink yarn, and holding right side of cap toward you crochet 2 rows of pink puffs. These when turned up will match cap, that is, the wrong side of the

Some Important New Books

Vegetable Gardening, by Ralph L. Watts. Orange Judd Co., New York. Price, \$1.75. A very full treatise on almost all aspects of gardening, including discussions of tools, making of hotbeds, greenhouses, and the like. A very valuable book.

Bacteria in Milk. United States Department Farmers' Bulletin No. 490, Washington, D. C. Covers the ground of Doctor Buchanan's articles in *FARM AND FIRESIDE*, and in a rather more systematic way.

Farm Boys and Girls is the title of a most interesting book by Prof. William A. McKeever, of the Kansas State Agricultural College. His chapters on play for the rural school-children and on the country church are well worth reading. The illustrations are from photographs, and there are a great number of them. The book is published by Macmillan Company, New York, and sells for \$1.50, net.

Peanuts, Their Picking and Handling, by W. R. Beattie of the Bureau of Plant Industry, Washington, D. C. Persons interested may obtain this valuable bulletin of the Secretary of Agriculture. Ask for Circular 88.

Mother, by Kathleen Norris, is one of the books of the year. It is a refreshingly tender and sweet story of a large family. The heroine is the mother of seven children. Her heroism wins its reward in bringing up the seven to young man and woman hood, clean, sweet, wholesome, God-fearing men and women. Such a book should be read by every young girl in the land. The publishers are Macmillan Company, New York.

Relation of Drought to Boll-Weevil Resistance in Cotton. Bulletin No. 220 of the Bureau of Plant Industry, Washington, D. C. This bulletin is of great interest to cotton-growers in the drier regions of the South and Southwest.

Recollections 1837-1910, by C. W. Marsh. A book by one of the inventors of the Marsh Harvester. The story of a life which covers our greatest era. There is history in this book, of the sort the school-books leave out. Farm Implement News Company, publishers, Chicago.

The Book of Parties and Pastimes will prove of much value to the school-teacher, the church worker or the social club that requires new ideas in entertainment. The authors, Mary Dawson, a contributor of *FARM AND FIRESIDE*, and Emma Paddock Telford, have crowded a vast number of very interesting games and parties into this volume. The book is published by William Rickey & Co. of New York, and sells for \$1.00, net.

If you teach a Sunday-school class of boys, if you want to keep the boys of your home, your school or your church interested indoors, you will be glad to read "Indoor Games and Socials for Boys," by G. Cornelius Baker, of the Young Men's Christian Association, Bridgeport, Connecticut. The book is full of good suggestions and excellent illustrations. It is published by the Associated Press, 124 East 28th Street, New York. The price of this book is 75 cents, net.



Good Recipes



HOW TO MAKE MANGO CATSUP—Take three dozen mangoes, one dozen onions, one quart of vinegar, one quart of sugar, two heads of cabbage (large ones), six tablespoonfuls of mustard-seed, six tablespoonfuls of celery-seed, three or four good-sized pieces of horseradish, three green peppers and a little salt. Do not soak or cook. Put in a jar, and cover. It will keep all right. You may chop these or grind them in a food-chopper, just as you like. Use sweet mangoes.
Mrs. D. L., Indiana.

DROP GINGER COOKIES—Two cupfuls of molasses, one cupful of butter, one cupful of sugar, four heaping teaspoonfuls of ginger, four heaping teaspoonfuls of soda, one cupful of boiling water, three eggs (beat well) and six cupfuls of flour. Dissolve the soda in the boiling water. Drop from teaspoon into a large bread-pan, leaving a good space between each one. This recipe will make eighty cookies.
E. A. L., Kansas.

NUT CAKE—Three fourths of a cupful of butter, one and one-half cupfuls of sugar, three eggs well beaten, one teaspoonful of soda in one and one-half tablespoonfuls of hot water, two cupfuls of flour sifted with salt, one teaspoonful of cinnamon, one cupful of nut-meats, one-half cupful of raisins, and one-half cupful of currants in one and one-fourth cupfuls of flour. Drop by tablespoonfuls one inch apart on buttered sheets. Bake in a moderate oven.
Mrs. J. J. G., North Carolina.

HOME-MADE CRACKERJACK—Take three pints of molasses and one cupful of white sugar and butter the size of an egg; boil as for taffy. When done, add one teaspoonful of soda, and while foaming stir in eight or ten ears of nicely popped corn; pour out on a bread-board, and press into a square loaf, then roll out with a rolling-pin until about an inch thick, and with a very sharp knife cut off in thin slices, and lay on a large platter to set. The cutting must be done while it is yet warm.
Mrs. C. L. M., Ohio.

EGGLESS CAKE—Crumb together one and one-half cupfuls of sugar, two and one-half cupfuls of flour, one teaspoonful, each, of nutmeg, cinnamon and allspice, one tablespoonful of lard, and lastly, add one cupful of buttermilk and one teaspoonful of soda.
E. F., Ohio.

DROPPED DOUGHNUTS—Two well-beaten eggs, one cupful of sugar, one cupful of sweet milk, one level teaspoonful of salt, one-half nutmeg, grated rind of one lemon, three cupfuls of flour and two heaping teaspoonfuls of baking-powder. Drop from a teaspoon into boiling fat, and the doughnuts will rise in round balls. Fry to a golden brown and roll in sugar.
Mrs. J. G., Michigan.

CREAM OF TOMATO SOUP—Heat one fourth of a pound of butter in a frying-pan. Into this slice one carrot and one onion, and pepper and salt to taste. Fry ten minutes, and then put into a deep kettle with the contents of a one-quart can of tomatoes and one-fourth teaspoonful of soda. Boil for one-half hour. In another kettle put three pints of milk, and let it come to the boiling-point. Thicken to suit taste with flour (I use one heaping tablespoonful). Then strain the tomatoes into the boiling milk just before serving.
Mrs. E. S. W., New York.

DEVIL CAKE—The first part: One cupful of brown sugar, one-half cupful sweet milk, three-fourths cupful of grated chocolate. Cook until thick, then cool. The second part: One cupful of brown sugar, one-half cupful of butter, one cupful of sour milk, one small teaspoonful of soda, three eggs (yolks of three, whites of two, save other white for icing), two cupfuls of flour (measure before sifting), one-half teaspoonful of cloves, one teaspoonful of cinnamon. Stir into the other part, and bake in a moderate oven. Make boiled icing of one cupful of white sugar.
Miss E. B., Missouri.

FLORIDA SALAD—Cut slices from stem ends of green peppers, and remove the seeds. Refill with grape-fruit, peeled and cut into cubes, the tenderest stalks of celery, cut into small pieces, and chopped almond-meats, allowing twice as much grape-fruit as celery and one third as many nut-meats as grape-fruit. Arrange in nests of lettuce-leaves, and serve with mayonnaise dressing.
Mrs. J. J. O'C., Washington, D. C.

PINECOT JAM—One pound of dried apricots soaked overnight, then chop fine. One pineapple chopped fine or one pound can of grated pineapple, juice of one lemon. Sugar equal to bulk of fruit if raw pineapple is used, sugar one-half bulk if canned pineapple is used, as it is already sweetened. Cook fifteen minutes.
Mrs. W. D. W., Illinois.

BANANA CAKE—One cupful of sugar, one and one-third cupfuls of butter, one-half cupful sweet milk, three eggs, one teaspoonful of soda, two teaspoonfuls of cream of tartar, two cupfuls of flour, flavor to taste. Filling: mash two bananas to a cream, stir into boiled frosting, and put between layers. To be eaten the same day as made.
Miss A. M. K., Virginia.

SPICED BEEF-TONGUE—Wash clean and neatly trim a large, fresh beef-tongue, and then drop into enough boiling water to cover it well. Add a half tablespoonful salt and a small pepper-pod. Cook slowly until the tongue can be pierced with a fork, adding boiling water from time to time, if needed. Take out, and peel off the skin. Put it again over the fire in a clean saucepan; add four tablespoonfuls of sugar, one tablespoonful, each, of ground allspice and cloves, one cupful of water, one-half cupful of cider vinegar, and simmer until liquor has been evaporated. Turn on ice, cut into very thin slices, and garnish with sliced lemon and parsley.
Mrs. H. H., Colorado.

TOMATO SOUP—Take two-thirds cupful of tomatoes (canned ones will do), a sprig of celery and one of parsley. Add one-half cupful of water, cook, and strain. To this juice add pepper, salt and a teaspoonful of butter. Return to fire, and after boiling begins add one-fifth teaspoonful of soda to prevent curdling of milk. Add one cupful of skim-milk and thicken with flour (one tablespoonful previously mixed with milk). Just before serving add one-half cupful of rich milk.
M. H. W., Pennsylvania.

FRUIT PUDDING—One-half cupful of sugar, one tablespoonful of butter stirred into the sugar, one egg beaten into the two ingredients, one-half cupful of sweet milk, two cupfuls of flour, one teaspoonful of baking-powder, one pint of fruit of any kind. Steam one hour. Sauce to suit taste.
O. L., Ohio.

FILLED COOKIES—One cupful of chopped raisins, one-half cupful of sugar, one-half cupful of water and one tablespoonful of flour. Boil the mixture until thick, watch closely, as it burns easily. While the paste is cooking, make the cooky dough by using one cupful of sugar, one-half cupful of shortening, one egg, one-half cupful of milk, three and one-half cupfuls of flour, two teaspoonfuls of cream of tartar, one teaspoonful of soda and one of vanilla. Roll the dough thin, cut out, spread the top with the paste, put another cooky on top, and bake in a moderate oven.
M. W., Washington.

PEACH DUMPLINGS—One pint of flour, two tablespoonfuls of butter, one-half teaspoonful of salt, one teaspoonful of baking-powder and sweet milk to mix soft dough. Roll one-half inch thick. Take pieces of dough large enough to cover two halves of a peach, dot the tops with butter and brown sugar, place in a buttered pan, pour boiling water in the bottom of the pan, and bake in a hot oven three quarters of an hour.
Mrs. D. M., Ohio.

CORN CAKE—Take one cupful of corn-meal (bolted) and a cupful of flour. Mix together with two level teaspoonfuls of baking-powder. Beat one egg, and mix with one and one-half cupfuls of milk. Add one teaspoonful of salt and one tablespoonful of sugar. Beat all well together. Butter pan well, and put on the stove, and heat hot. Put mixture into hot pan, and bake in quick oven from fifteen to twenty minutes.
E. C., Massachusetts.

FOR BAKED FOWLS—If one has small ones, the fowls are often burnt before done. This is the way I do with mine: If a small one, take a piece of old clean white cloth, fold five or six times, wring out of water, lay on top of the fowl and baste as often as necessary, not removing the cloth—the cloth keeps the steam in when fowl is tender. If not brown, remove the cloth and brown the fowl. It will be much sweeter and juicier in this way.
E. A. L., Kansas.

DEVIL'S-FOOD MARSHMALLOW CAKE—Make a custard of one cupful of light-brown sugar, one cupful of grated chocolate, the yolk of one egg and one-half cupful of milk. Boil in a double boiler until thick, and set aside to cool. Then cream one cupful of light-brown sugar with one-half cupful of butter, add two well-beaten eggs, one-half cupful of milk, two and one-half cupfuls of sifted flour, one and one-half teaspoonfuls of baking-powder, one tablespoonful of warm water and the custard. Bake in two layers. For the marshmallow layer, add five tablespoonfuls of cold water to two rounding tablespoonfuls of granulated gelatin; put it in a basin or dish, and set it over the teakettle to dissolve. Add seven tablespoonfuls of cold water to two cupfuls of granulated sugar, stir, and let melt slowly until it reaches the boiling-point, then pour into a bowl at once, add the gelatin, and whip for fifteen or twenty minutes, or until thick. Then add one-fourth teaspoonful of almond extract and one-half teaspoonful of vanilla. Pour into a buttered pan the same size of the cakes, and when cold, put it between the two layers.

ICED COCOA—To every two cupfuls of cocoa made in the usual manner add half a cupful of whipped cream. Beat it into the cocoa sweetened to taste, and let it stand until cold. Serve in glasses, with ice.
Mrs. J. J. O'C., Washington, D. C.

CHOCOLATE PIE—One-fourth teacupful of chocolate, one teacupful of hot water, butter the size of an egg, one cupful of sugar, yolks of two eggs, two tablespoonfuls of corn-starch, dissolved. Mix well, cook, let cool, add one teaspoonful of vanilla, and pour in pie shell. Beat the whites of the two eggs to a stiff froth, add two tablespoonfuls of sugar, spread on pie, and brown in oven.
Miss M. L. S., New York.

MARSHMALLOW FUDGE—Cook one cupful of cream and two cupfuls of powdered sugar together, stirring gently, until the mixture begins to boil, then add one-fourth pound of grated chocolate, stirring until melted, and let boil about ten minutes. Add an inch-and-a-half cube of butter, and stir until well mixed, then remove from the fire and beat briskly for five or ten minutes; pour into a buttered fudge-pan containing one-half pound of cut-up marshmallows and one-fourth pound of chopped pecan-meats scattered through.
E. I. L., Wisconsin.

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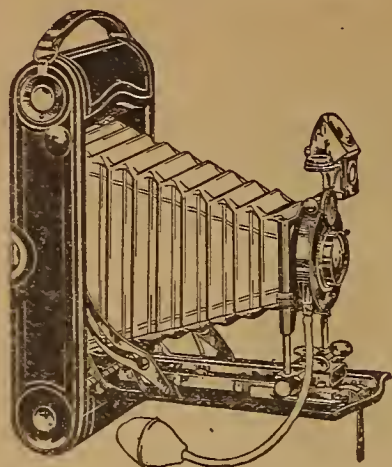
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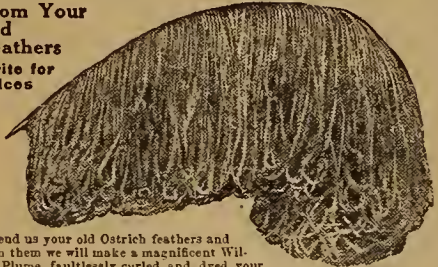
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The Mother of One

By Katharine Atherton Grimes

IN SPITE of Rooseveltian logic, there will always be many homes with but a single child. To the overworked mother of many, this sometimes seems an enviable condition. She sees her own noisy brood swarm over her clean floors with muddy shoes, setting at naught in a minute a hard day's labor, and cannot help casting a longing eye at her neighbor's spick-and-spanness. But a glance at the shining window opposite shows her a lonely, wistful little face, and as she turns from its shadow to the brightness of her own jolly little circle, she forgets soiled frocks and torn trousers in joy that not one is missing.

The mother of the single child has many cares and responsibilities that the other knows nothing of. She must be playmate as well as counselor, unless she wants to leave her little one to the mercy of chance companions. While two children in the same home will be content to play together and will not care to seek other companions, one alone gets discontented and soon begins to feel the lure of the street. Even playthings, though interesting and abundant, fail to fill the need. There comes, therefore, the utmost necessity for Mother to exercise her ingenuity, in order to keep the child happy and content at home.

The first two or three years of the little one's life are comparatively easy. He is readily satisfied and has not yet had the taste of juvenile companionship that will make him long for more. Yet in these very first years must be sown the seeds of that close comradeship between mother and child that will be the safeguard of the after time.

The city mother, upon whom so many duties devolve, is sorely tempted to leave her child, for many hours each day, to the care of nurse or servant. As he becomes older, this means practically that he is left to his own devices. The period, especially between the time that school is over and the evening meal, very often finds Mother absent and the house empty. There is no attraction for the little fellow, as he comes in, full of the day's happenings and eager for physical activity. A disappointed slam of his books onto the nearest table and a petulant wish that "there ever was someone to talk to" sends him back to the street. The mother has lost the psychological moment, for the sake of some slight social duty. It does not take much of this to loose the golden chords of sympathy, and before even mother-love is aware the precious life has drifted far away from real union.

"Be at home when school is out" is the best kind of a Golden Rule for the mother who has her child's welfare deeply at heart—and what mother has not? Be ready to listen, to sympathize, to participate in the day's doings. If it is necessary to go out upon errands, wait until after school, and let him go with you. When he grows older, ask him to escort you. Need him; that is the whole secret. A boy's chivalry is easily aroused. Few claims will seriously rival that of a mother who needs, and has waited for, his society and protection.

And there is another thing; keep yourself young enough to be companionable. Take an active interest in football, or colt-training, or, if necessary, even in "hull-gull" and mumblety-peg. Wear the colors he likes—even if Father stares and the neighbors comment on your conspicuous lack of taste. Go to places he likes. A ten-year-old boy takes a hundred times more pleasure in showing a bright-eyed and sympathetic mother the new "diamond" on the school grounds, or even the place up the back alley where the policeman shot Tim Casey's dog, than he would in making one of a crowd of boys at the same interesting points. Never mind if you don't know a pitcher from a third base and have a shuddering horror of tragedies. It is not a question of your likes or dislikes, but that of the whole future of your boy.

Lead at first—during the first years. While you are leading, develop those tastes that will allow you to be safe when you have to bring up the rear of the procession, later on. For you will have to do the following some time. A boy who will consent to be always dominated, even by his mother, is not worth raising. But, while you can no longer lead, it will still be possible for you to exercise a guiding pressure. Your natural wit must be your guide as to the manner and amount of this. You may feel the pace a stiff one, sometimes, but there will be years for you to rest in after your work is over.

The mild, weak-willed mother of story-book days is a creature of the past. The new youth would find little attraction in such a woman. The boy of our own day admires much more the mother who will wear his colors at field-day and can play a good lively twostep for the "fellows" when they drop in to spend the evening.

When there are other children, and especially an older sister, the mother's tasks in these particulars may be much lessened. So, also, will be her pleasures. At forty, the mother of a single son is in her second youth. That is her recompense for the sacrifice of her pet social hobbies and her quiet hours.

Happy the "mother of one" who finds her lot cast among the green fields of the



"She must be playmate as well as counselor"

country. The father's companionship is much more freely enjoyed there than is possible in the city. There is also much less to distract and more to interest the child. Mother, too, finds fewer necessities for being absent from home. Is not this one secret of the more perfect unity of the average farm home?

Boys are here spoken of principally, because a girl is far more likely to be made Mother's confidante and chum. The principle is the same with both. If there is only a single child, the mother's duty is double fold in either case.

Remember always that you are training a husband for some girl, such as you yourself used to be. When the wrench comes, as it always does when those newer and greater interests become paramount in his life, do not let it loosen the chords that have been so long in the weaving. Let them expand to include the Other Woman, for so only may you keep your throne.

Our Little Idiosyncrasies

By Pearle White McCowan

"STRANGE how many people seem to think it necessary to try to make others conform to their own particular theories and ideas. Now, every time I've dined with Sellers in the last year (and it has not been seldom) he has tried to impress me with the fact that I should take my coffee clear. It is in vain I tell him that if I had to go without the trimmings I would go without my coffee. He goes through with all the regular arguments and fairly insists upon my accepting his view of the case. Every time we dine together that same little insignificant question has to be thrashed over. Sellers is a good fellow and a bright man, but his tiresome insistence about that little hobby of his is disgusting."

The above remarks, overheard in a street-car the other morning, set me to thinking about some friends of my own, and their hobbies, and wondering if we were not all of us just a little too persistent sometimes about our little notions.

For instance, there is the woman who eats whole-wheat bread and insists that her friends should do it too, or who takes a very light breakfast and tries to

impress you with the notion that you should do the same, when you are always hungry in the morning. Or, there is the man who is a pronounced vegetarian and tries persistently to convert you to a like habit, when he knows that meat is your chief article of diet. Perhaps the food crank is really worst of all, although that is not by any means the only way in which this sort of selfishness is displayed.

Then there is the man who persists in expecting his wife to give up the Sunday-morning service because he prefers to stay at home and read, or the woman who, in her zest for culture and education, spoils all her husband's enjoyment in his harmless little "games with the boys" (a few old friends who are wont to happen in of an evening) because of her constant insistence that such things are not intellectual. And the person who insists upon your wearing a certain kind of shoe or hat because they consider them best or most becoming; or in training your children according to their ideas and theories.

Being a near relative apparently gives folks a right to criticize and to dictate in these little matters. One pretty blonde confessed to me that she had never in her life had any but blue dresses, with the exception of one or two white ones, because her mother and sister insisted that blue was her color. "And," she said, as she laughingly showed me a new rose-colored gown bought with her own earnings, "I just detest blue, but every time I suggest anything else they look so surprised and pained that I always have given up, but now I've revolted. I don't know what they'll say, but I've bought this and I'm going to wear it if it makes me look black as the ace of spades." And I am glad to report that the new departure was fully as becoming as the blues had been.

It is often, in fact usually, the little inconsequent details that excite the most profound effort. Did you never know a man whose life was a series of petty annoyances merely because his wife insisted upon managing the details of his life as well as her own, or vice versa?

Personal hobbies should be respected, little idiosyncrasies ignored. Each person has a right to his own pet hobbies, virtues, luxuries, dissipations, extravagances, so long as they do not harm others. And being a near relative or friend does not give one the right to criticize or dictate in these minor matters.

Yes, we have a right to all our little pet hobbies and foibles, but we do not have a right to force them upon others, and we should remember that our brother has a right to his, also.

Not all of our slang phrases can be traced to classical origin, and yet one of the most used, that of calling a person a brick, can be so traced. King Agesilaus was once visited by an ambassador from Epirus. During the interview the ambassador asked the King why he had no walls for Sparta. King Agesilaus smiled, waved his hand majestically toward his army that was drawn up before him and replied, "We have. These are the walls of Sparta: every man before you is a brick."

The Boy After School

By Alice M. Ashton

IT is a fine thing for a boy to have some regular work after school, though it ought not to take up all his time by any means.

This work is generally in the line of regular "chores," and is looked upon with ill-favor by even an ambitious boy. Vary it, if you wish that boy to get the idea that he likes farm-work.

Give him a written formula for preparing whitewash, and let him whitewash the chicken-house, the cellar, the stables, or such part of them as he can reach. He will do it as well as anyone, and will grow an inch or two from sheer importance and delight.

Let him spray the hen-houses with a kerosene solution occasionally. He will generally consider spraying the cows in fly-time much more fun than milking. If he does it satisfactorily, why not let him do it?

He will occasionally enjoy oiling the harness instead of brushing the horses. Change off with him once in a while.

It is an excellent plan to send him to transact business sometimes. He may make mistakes, but he will be learning each time.

And each time he learns he will get ambitious to do greater work. And so he will come to be useful.

Let him experiment in setting out vines and trees about the place. It is a valuable experience, which may result after a while in improving your place with fruit and fine shade.

Give him a corner of good ground for experimenting, if he enjoys that sort of thing, and help him a little when needed.

See that the boy has sufficient honest work after school, but vary it enough to make it interesting, and there will be fewer boys "despising" the home farm work and leaving it for something else.

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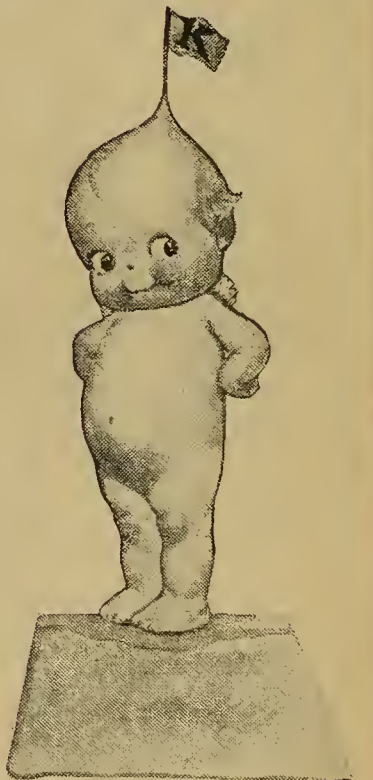
Kewpie Kutouts in Many Colors

Every Month in Woman's Home Companion



Wag, the Chief—
his back

THE Kewpies were invented by Rose O'Neill. They are always doing good, helping Dotty Darling and her Baby Brother to have a good time whenever the older children won't let them tag along. Now all the children want to cut out the Kewpies. And the Kewpies want to be cut out by the children. So Rose O'Neill has made the Kewpie Kutouts. There is a whole page of them for you in the October copy of the Woman's Home Companion—a magazine with pages and pages for children and their mothers.

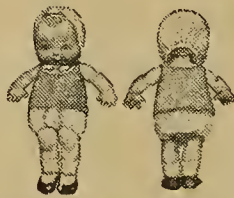


Wag, the Chief

This is Wag, the Chief. He is captain of the band of Kewpies that have been making things so pleasant for Very Little Folks, whose mothers take the Woman's Home Companion. When you cut him out and paste him together, he makes a real Kewpie whichever way you look at him. In October Woman's Home Companion



Dotty Darling is over five inches high in the Kewpie Kutout



Dotty's Baby Brother is not quite so tall as Dotty, because he is younger.

you will find Wag in color (not plain black and white like he is here) and Dotty Darling (with two dresses), and Dotty's Baby Brother—all ready to be cut out.

A delicious story about Dotty Darling and her Kewpies has a page all to itself opposite the Kewpie Kutouts.

The Kewpies are the first cut outs to have real backs

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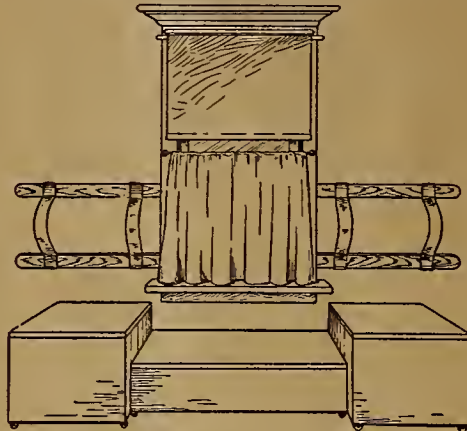
THE HOUSEWIFE

How to Make a Window-Seat

By J. E. Bridgman

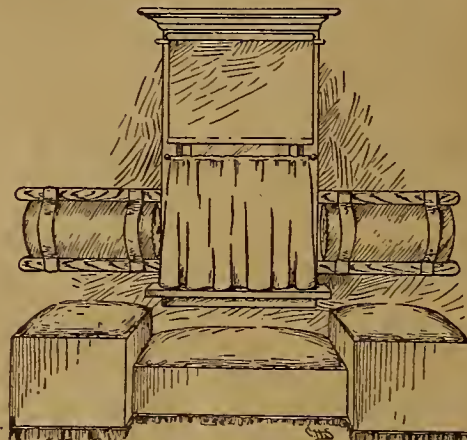
THE two illustrations here shown and this description will explain how a very attractive and inexpensive window-seat may be made. No dimensions are given, as the width of your window and the available floor space will govern the size of the seat; however, it should be eighteen inches high and of the same width, that is, the two end seats; the center seat will, of course, be the width of the window, and should be about four inches narrower than the end seats. As shown, the seat is made with three boxes, and if you are not handy with tools, have a carpenter make these, also the wall strips. The boxes may be of pine, but the strips should be of some hard wood, or at least of some wood with a coarse grain; shape them as shown, and let them be from two to three inches wide and one-half to three-fourths inch thick. They must be stained and neatly varnished. A green stain on cypress will do nicely. The loops hung on the strips may be of leather, ribbons, or any neatly worked cloth that suits your fancy. The boxes should have casters or, at least, small wooden legs. If desired, the boxes may have the tops hung on hinges, and the same used for shirt-waists, hats, shoes, books, etc. Use large-headed upholsterers' nails for holding the loops in place. They may be secured in brass, copper, silver, leather or cloth. Make the cushions uniform in size, and just to fit the loops; if necessary, use stiffening in the back of them, to make them hold their shape. The goods for the cushions may be any of the printed goods sold for this purpose, or you may use plain goods, and either work or paint the figure in. For the boxes use whatever suits your fancy and the size of your purse, such as fabriconia, leatherette, Spanish leather, burlap, etc. Any of them may be secured in plain solid colors, or with designs stamped or stenciled on. The seats, also cushions, should be stuffed with hair if possible, but sea grass or moss may be used if hair is not at hand. The fringe, gimp, upholsterers' nails, etc., can be secured at all upholsterers' shops, and at prices to suit all, and the finished seat may cost

much or little; but if care be exercised, and the colors used made to harmonize, even the cheapest of goods may be used, and the result will be very pleasing. It must be remembered that each box is finished complete and is removable. The



The seat is made with three boxes

young boy who is handy with tools and the sister who loves to do fancy-work can work wonders with a very small amount of money, and, possibly, if snags should be struck, the father or mother could be persuaded to help over the hard places. A great portion of the pleasure derived from home-made articles is from



Make the cushions uniform in size

the fact that some member of the family made them, and should several assist in their construction, it makes the pleasure that much greater. No piece of furniture, possibly, will so improve the appearance of a room as a neat window-seat or cozy-corner.

nourishing. Wash a turnip, cut in half-inch slices, pare, and cut into cubes. There should be two or three cupfuls of the prepared vegetable. Place in a kettle with a sliced onion, and cold water to cover. Bring to the boiling-point, and simmer gently until the vegetables are cooked to pieces. Drain through a colander, and return the liquid to the kettle. Have ready a cupful of rice; add this, with salt, to the liquid, and cook until the rice is tender and has absorbed the liquid. Carrots may be used in the same way if the flavor is liked. This is an excellent way to use these vegetables when they are "woody" or pithy yet have a good flavor.

Potato Cakes with Roast—Pare good-sized potatoes, and let them stand half an hour in water. Wipe dry, and grate. Place a cheese-cloth in a colander, and let the potatoes drain for a few minutes. Sprinkle with salt, and form into flat cakes with the hands. Place these cakes on a plate in a steamer, and steam for fifteen minutes. Remove the roast from the roasting-pan, lay in the cakes carefully, and baste for a moment or two. Serve all together on a platter.

Scalloped Onions—Butter a baking-dish, and sprinkle with cracker-crumbs. Arrange a layer of sliced onions of a mild flavor, sprinkle with pepper and salt, dot with butter, and cover with crumbs. Repeat until the dish is as full as desired. Pour in enough milk to cover, and bake slowly until the onions are tender; thirty minutes usually will suffice.

Tomato Salad—A very attractive salad is made by using the tiny red and yellow tomatoes and tiny white onions. Steam the onions tender. Remove the skins from the tomatoes. Have them all very cold. Line individual plates with lettuce-leaves, and place alternating red and yellow tomatoes to form a circle; pile onions in the center, and pour a salad-dressing over all. If small tomatoes cannot be had, the salad is equally attractive when the onions are served in a large tomato from which the center has been scooped out.

Recipes for Serving Pears and Grapes

Pear Marmalade—Pare, core and quarter ripe, juicy pears. To six pounds of fruit allow one pint of water. Cook slowly until reduced to a pulp. Add three quarters of a pound of sugar to each pound of fruit, and cook, stirring frequently, until the mixture becomes very thick. If desired to vary the flavor, some lemon or orange rind may be steeped in the water before adding it to the pears. Can while hot.

Pear Charlotte—Pare, quarter and core twelve pears, put them in a saucepan with one tablespoonful of butter, and cook slowly until very tender. Butter a charlotte-dish mold, and line with slices of buttered bread. Spread in it a layer of pears, then a layer of bread, and so on until it is filled. Bake three quarters of an hour in a hot oven, and serve with liquid apricot sauce.

Baked Pears—Halve them, and cut off ends. Pack in earthen jar, half fill with molasses, then add water sufficient to cover fruit. Bake in a very moderate oven until pears are very tender. To vary flavor omit a small part of molasses, and add some sugar and a few whole cloves or some strips of lemon-peel. After cooking is finished, they may be placed over the fire, heated to boiling-point and canned.

Pear Flavor for Ice-Cream and Ices—Pare, quarter and core the pears, and cut in slices. Put into a preserving-kettle, add enough water to keep from sticking, and cook until soft. Rub through a sieve, and measure. To each pint add one quarter of a pound of sugar, and stir until dissolved. Fill jars to overflowing with pulp, and seal them. Set the jars in a steamer, and steam for one hour and a half, then let them remain in the steamer until cold. Wipe and care for them as you would preserves.

Grape Jelly—Prepare the grapes as for grape juice. After draining, return the juice to the kettle, and place uncovered over the fire. Boil thirty minutes, then measure and allow one pint of sugar to one pint of juice. Boil twenty minutes longer, removing scum as it rises. Pour into hot tumblers, and set at once in the sun. If it should not be as firm as you wish by the next day, let it remain in sun until of right consistency. When cold, cover with paraffin.

Grape Salad—Line a glass dish suitable for salad with crisp lettuce-leaves, then spread thick with halved and stoned grapes, any kind preferred, although the larger the better. When ready to serve, heap whipped cream on the salad, and drop chopped walnuts on top. This salad can be prepared in the winter from canned grapes.

The Cooking and Serving of Vegetables

By Alice Margaret Ashton

VEGETABLES do not hold the important place they should on the average American table. We are called a nation of meat-eaters, and not only is this claimed by some of our leading physicians to be the cause of many bodily ills, but it is also productive of our greatest expense in the food-bills.

Wonderment is often expressed that the inhabitants of many foreign countries live so comfortably and work so hard on a diet in which meat has such an unimportant place. When foreign cooks behold our usual methods of cooking, they say that we throw away the most nourishing and tasty part of vegetables by our manner of preparing them. From our southern sisters we may learn the lesson of long, slow cooking and a clever combination and seasoning. Every farm should have a reasonably good garden so that healthful vegetables may appear at every meal.

Fried Tomatoes—Choose fine, firm tomatoes about half ripened. Remove skin, and cut in slices from one-half to an inch in thickness. Roll in cracker-crumbs, and fry in butter, seasoning liberally with salt and pepper.

Vegetable Stew—Cut a variety of vegetables into small cubes. Potato, parsnip, carrot and turnip can be used. To them add a large sweet onion, sliced, one head of celery, cut in small bits, a sprig of parsley, and a little summer savory, if liked. One large tomato, sliced, or an equal amount of canned tomato is a delicious addition for the sake of a change.

Melt a tablespoonful of butter in the kettle, place the vegetables in this, season with salt and a dash of cayenne, and cover very closely. Cook gently for about half an hour, or until the vegetables are well done.

Savory Rice with Thickened Gravy—A dish of boiled rice is often found accompanying a stew of beef or chicken on the southern table; and the combination is not only delicious, but extremely

THE MELTING OF MOLLY

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- "The O'Hara Epidemic," by Louise Rand Bascom.
- "A Knight There Was," by Eleanor H. Porter.
- "The Joy of Creation," by Rose Seelye Miller.
- "Felicia-Patricia," by Maude Woodruff Newell.
- "The Frigidity of Frankenstein," by William Hamilton Osborne.
- "The Christmas Spirit," by J. J. Bell.
- "One Merry Christmas," by Harriet Prescott Spofford.
- "When a Woman Will," by Harriet Lummis Smith.
- "Pat," by Kilbourne Cowles.
- "Christmas on the Corkscrew," by Carmelita Carasco.
- "Clarisse of the Cronanqua," by B. M. Connor.

And these general interest articles:

- "The Glory Hole"
- "The Care of the Breadbox"
- "A Cookery Thanksgiving Party"
- "Going to the Candy Store with Johnny"

And the following Medical Articles by Famous Experts:

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- "Indigestion, Its Causes and Treatment," by Dr. Franklin W. White.
- "Teeth and Their Care," by Dr. Herbert Locke Wheeler.

THE HOUSEWIFE is an interesting magazine edited in behalf of the woman who has the interests of her home at heart. It has departments on Cooking, Fancy Work, Fashions, Home Decoration, Entertainment, and the Care of Children, and in addition THE HOUSEWIFE publishes the best stories and serials ever presented in a magazine of its price, and is beautified by colored covers and many illustrations throughout.

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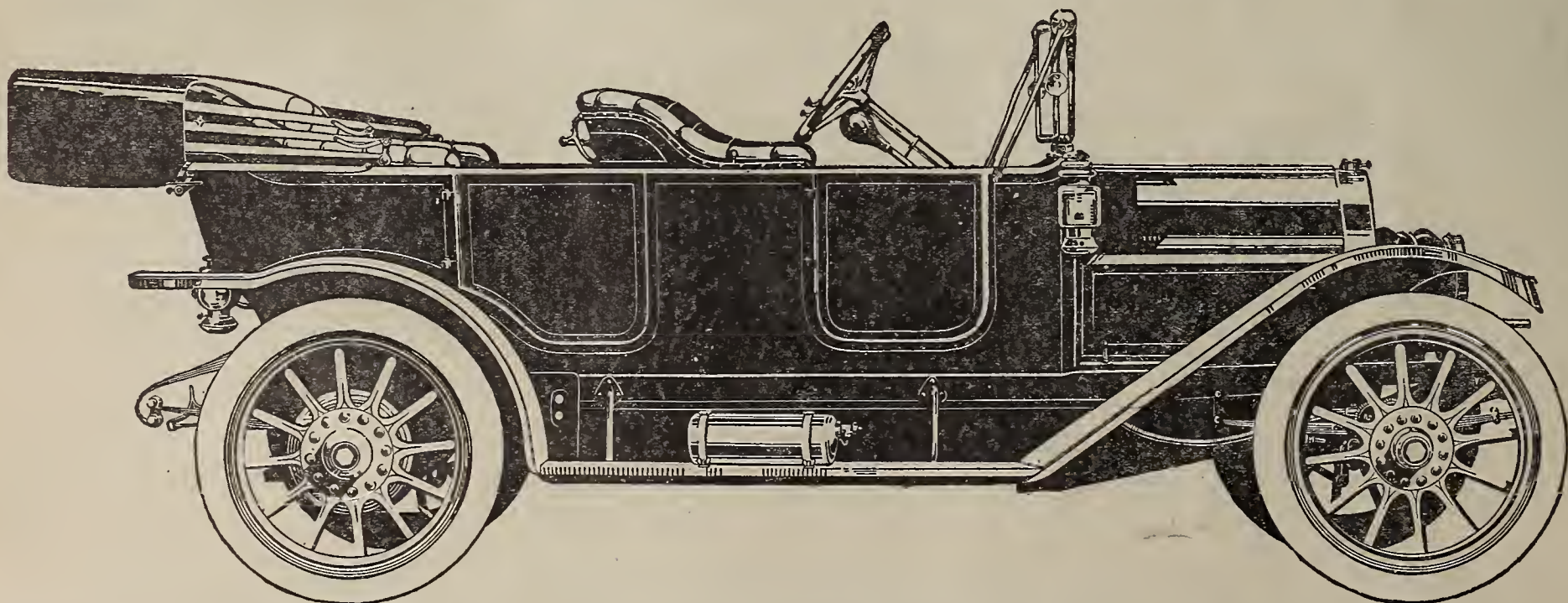
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SATURDAY, SEPTEMBER 28, 1912



Who says farmers' daughters aren't happy?

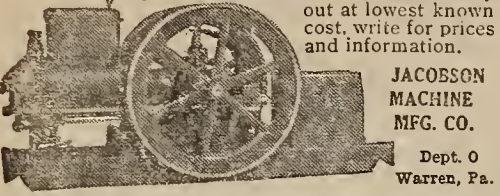
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MEAD CYCLE CO. Dept. M-33 CHICAGO

With the Editor

THE Democratic National Convention at Baltimore brought out one fact of universal interest, which—

Now you people think I'm going to talk politics, but I'm not! I had no idea of saying a word about politics when I began. I reserve the right to do so whenever I believe I ought, but nothing in the way of political discussion was in my mind when I mentioned the national convention at Baltimore. On the contrary, I was about to discuss the non-political subject of taking cold.

But before we start on that, I have a word to say in reply to a letter I received recently from an esteemed subscriber at Albion, New York. He says:

I have been a subscriber to your paper for more than twenty-five years, and have enjoyed having it among my most read papers; but if you purpose running it into a political-campaign sheet (notably July 20th), I shall part company with you, as I have with Abbott's Outlook, when my present subscription expires. This may not affect your dividends, and may materially increase them temporarily. A paper purporting to be non-political should give politics the go-by.

This is a kind and considerate letter. Of course, the writer of it knows that we have never sent out an issue which could by any stretch of propriety be called a political-campaign sheet. But the time may come at any time when any paper published in the interests of the farmer will be false to its duty if it does not get out into the political fray and fight. This campaign presents no such necessity. The issues are general, not agricultural. Therefore, I shall not in these columns tell my readers my choice for President. But we can't keep out of politics. Parcels post is a political question to-day. So is federal aid to good roads. So is the great question of federal aid to vocational education. And these we have been agitating all the time, and expect to keep it up. I wonder if these are what our old and good friend means? I think it very unlikely. Probably he means something else in the issue of July 20th. Let's look it over. I see it is the Farmers' Lobby in which Mr. Welliver expresses some strong views as to the honesty of a certain political convention. Well, those are Welliver's views. If he is to write honestly to our people, he must be permitted to write what he thinks.

That's perfectly obvious, isn't it? On farming, on orchardry, on selling, buying and cultivating, FARM AND FIRESIDE is full of the words of people who honestly write what they think. It's the only way to get at the truth. Sometimes we get error that way too—but truth is obtained in no other way. When we deal with public questions, we shall deal with them honestly, and that is all our subscribers have any right to ask of us. If they expect us never to make mistakes, they will be disappointed. We shall make lots of them. But we shall not make the mistake of asking any person to write on public questions and then gagging him. The kind of people we want are not the kind who can be gagged.

Query—Is our old friend offended because Mr. Welliver expressed opinions, or because he expressed views contrary to the complaining subscriber's?

THE Baltimore convention developed one phenomenon which is significant to all of us who are subject to colds. The weather was hot and sultry. The nights were almost as hot as the days. The sessions of the convention lasted, many of them, all night. People were tired and depressed by the heat and humidity—and nearly every mother's son in attendance took a dreadful cold. I should not be surprised if, among all those who attended, a good many deaths supervened from colds. I was in a serious condition for three weeks. Every man I knew there was affected in the same way, except one.

They were those depressing colds which began with smarting in the throat and pharynx, and a constant discharge of slimy mucus from all the membranes of the mouth and throat. After a few days the inflammation worked up into the nasal passages and infected all those cells in the bones of the head and face which are called sinuses, and which are involved in most cases of chronic catarrh.

An Irish girl was asked by her mistress what she was using for her cold. "Six handkerchers a day, mum!" she replied.

The colds taken at the Baltimore convention were all of that sort, and they were all alike.

Now, it is perfectly obvious that all these thousands of people did not take cold from "exposing themselves." Not at all. They "caught cold," as our ancestors always said. Our grandmothers never spoke of "taking" cold. They said, "I have caught an awful cold." "Taking cold" is an expression that came in with the school physiologies, the authors of which explained very clearly that we take cold by exposing ourselves to drafts or the like, causing unequal distribution of the blood and a rush of the circulation to the mucous surfaces, etc. But all their clear explanations are bosh. We catch cold just as we catch smallpox—from someone who has a cold.

The doctors who are up in their profession know this, now. They know that a cold is caused by bacteria which get into the mouth, nose, throat or lungs, and grow and multiply on the mucous membranes, causing the inflammation. The conditions at Baltimore were all against taking cold, except that there were thousands and thousands of people crowded into a city which was too small for them. Someone had the microbes. Others breathed them in. They coughed and sneezed in the convention hall, in the cram-jammed hotel lobbies and in their rooms, where they slept at the rate of three in a bed and four in the middle. And almost everybody got an awful cold by breathing in the germs.

A person who has a cold ought not to associate with others. He should spend most of his time in the open air, for his own good and that of others. If he can put up in a tent and sleep in the open air, so much the better. Colds are as infectious as measles, and far more deadly to life.

BENJAMIN FRANKLIN, a hundred and fifty years ago, wrote his opinion to the effect that people do not take cold from exposure to the vicissitudes of the weather, and cited the experience of hunters and trappers, who seldom have colds. Arctic explorers never have colds while enduring the hardships of their march—but when they get back to civilization they catch cold just as we do. Franklin said, "I am convinced that colds arise from noxious effluvia from crowds." He'd have been confirmed in this belief if he had been at Baltimore.

Woodrow Wilson did not go to Baltimore, and I understand that his health was unimpaired by its results, while reports have it that both August Belmont and T. F. Ryan were infected with severe colds. I have no word from Mr. Bryan.

Robert Quick

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Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/2 inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.

FARM AND FIRESIDE



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

Vol. XXXV. No. 26

Springfield, Ohio, September 28, 1912

PUBLISHED
BI-WEEKLY

An Abnormal Season

WEATHER which might be a fine thing for a country if it could be counted upon is unfavorable when it comes unexpectedly. Even a pleasant and agreeable summer may not be a good one when the crop system is based on expectations of the hot and oppressive. The 1912 corn crop looks like a record crop at this writing, but we have our doubts. It has been too cool. We shall be lucky if we escape an early frost in one of these cool waves. Corn is a tropical plant and needs hot, sweaty nights, which it has not been favored with, to make heavy ears. We shall be surprised if the crop forecast of the Department of Agriculture does not turn out to be too hopeful.

On the other hand, an abnormally cool and moist season is a fine thing for the hay—save at the time of harvesting. Inasmuch as the hay crop is about the most valuable of all, such a season as this carries into the mows and stacks a compensation for any shortage in corn. Wheat, too, in the rather dry wheat-growing regions of the West and Northwest, has benefited by the unusual coolness and rain, and the cars will be scarce for moving the huge crop of the raw material for bread. On the other hand, the cold and inclement winter preceding this abnormal season has resulted in poor wheat in the winter-wheat fields of the Central States—but has compensated with splendid oats.

Dry-farming regions will boom for a year or two following these conditions. Probably the price of land will go too high. Let settlers be wary of founding a system of farming on the experience of abnormal seasons. They should use the moist years in getting started, and should adopt the silo, the sorghums, the dairy and the small plot irrigated by windmill or reservoir as adjuncts for the dry farm. They can make a go of it if they will remember that this is a time of abnormal weather and will plan for drought every year. They should not attempt getting along with less than a half-section of land unless a good field or two is irrigable.

The season is abnormal in other respects than the weather. Bull moose, elephants and donkeys are fighting all over the place and doing some damage to the crops of farmers who stand watching the fight, while work is at a standstill. Those who want stock cattle or feeders had better be hustling for them. Such live stock will be scarce and out of sight in price unless the best judges are all wrong.

Lest We Forget

HERE are some of the things which have been said by various people about the work of the King split-log drag on country roads: "The famous split-log drags did the work." "The drag is the road-maker of the future." "The good results of this process are almost beyond belief." "The split-log drag is an evidence of progress." "The King split-log drag is the best solution of the good-roads problem yet devised." "The split-log drag in Lycoming County is the King just now, and no mistake." "King's split-log drag is transforming Greenville's streets from mud-holes to boulevards." "The dragged roads reminded me of the best English roads; they were quite as smooth and dust free."

The last quotation is from a letter from England, and refers to the roads about Red Oak, Iowa. This page might be filled with similar accounts of benefits from this cheap, home-made road-drag. The above items of experience come from Massachusetts, Iowa, New York, Texas, Georgia, Illinois, Pennsylvania. A Nova Scotia paper says of it: "It not only makes the road good, but keeps it so. It gives a straight, smooth, hard, well-rounded road that no other means appear to provide."

The strange thing is, after more than ten years of proof as to these things, that there is any road any-

where to which it can be applied that is not regularly dragged with the King road-drag. The trouble is, no doubt, that the King drag is not patented, nobody is interested in pushing its manufacture or sale, it costs little, and cannot be made to cost any more without spoiling it. If it were so complex as to require a civil engineer to understand it and a bond issue to buy it, every county in the nation would be going in debt for it. All it requires is a log, a few bolts, a team of horses and a man with gumption. The latter article is, without doubt, the thing oftenest wanting.

A Real Consumption Cure

THAT is an interesting story which comes from Baltimore to the effect that the scientists there seem to have found a cure for tuberculosis. It is stated that the cure is in the form of an anti-toxin like the now commonly used diphtheria anti-toxin and the vaccinations for typhoid, smallpox and hog-cholera.

It is said that the anti-toxin has been injected into the blood of rabbits previously infected with tuberculosis,

*You may do two men's work, but you
can't take two men's rest*

and that it has killed the tuberculosis germs without injuring the rabbits. If this is true, it is a matter of the most stupendous importance. Tuberculosis in the form of consumption, and other forms, is the most deadly of diseases, and millions of unfortunates, either threatened with it or actually suffering from it, will be made safe and happy, and tens of thousands of households will be blessed by such a remedy.

It is hard to imagine a greater work than that of the research workers who discover a thing of this sort. The labors of kings, presidents, generals and magnates sink into insignificance beside it. Whether or not the cure for tuberculosis has actually been discovered is not now certain; but there is no reason to doubt that some time it will be perfected.

To farmers the idea is of special interest. For, when an anti-toxin is found for tuberculosis, it is safe to say that it will cure the disease in cattle and other domestic animals, as well as in human beings. Instead of the tuberculin test, which only tells when an animal is infected and points it out for destruction, we shall have a cure which will rid us of the disease.

A Quiet Influence for Better Things

ON SEPTEMBER 4th there passed away one of the really great men of America. In Dr. W J McGee the world lost a true soldier of the common good. For many years he has been in the employ of the scientific bureaus of the United States Government in one capacity or another. He was an ethnologist, a geologist and an expert in a dozen lines. But his best work has been done since he reached the age of fifty. No man was more potent in the great conservation movement than Doctor McGee. A son of the common people and self-educated, he devoted to the principle that the earth on which we live is the common inheritance of the race perhaps the most wonderful store of knowledge possessed by any man of his time. He was the quiet, working force back of the more spectacular demonstrations of the conservation agitation. He was a true believer in the common people of whom he was one, and all his work was for them. The nation and the world will be the better for his having lived.

Parcels Post at Last!

THERE is astonishingly little excitement over the fact that a real parcels-post law will go into effect in January, 1913. We hear no loud cheers from the advocates of the measure. In fact, some who have made a living out of the agitation are deeply depressed at the prospect of having to find other jobs. We ourselves, who have been whooping it up, lo, these many years for parcels post, are little inclined to burn red fire. We feel a good deal like a man who has been choked until he is black in the face, and suddenly allowed to breathe—relieved, but not particularly hilarious. We have heard of no general movement on the part of retail merchants in the direction of selling out and going into farming. The mail-order houses have displayed no bunting, nor shot off any celebratory rockets. They are so busy declaring dividends on the business of the past year which was done without parcels post that the celebration may have slipped their minds.

We deem it a proper time, however, to call attention to those who have deserved well of the Republic in this important matter. The senators and representatives who have stood for the best law possible against the selfish protests of influential interests, should be remembered at the polls. Their action was taken in the face of great pressure and required backbone.

The law passed is a good one. Not just what many wanted—but think what we have to be thankful for in escaping that "rural parcels post" pitfall which was dugged for the feet of the farmers.

We have won a great victory. For this is only the first statute. We shall perfect and extend the service. We shall never go back to our former place in the ranks of those unprogressive nations without parcels post. The first step is the epochal one, and that has been taken. Next year we shall have a really useful parcels post, not only to Japan and South Africa, but to the next town and the near-by city.

Gentlemen of the House, Senators and you, Mr. President, we thank you, "one and all"!

Ohio's Step Forward

THE triumphant adoption of most of the proposed amendments to the old constitution of Ohio, including direct primaries and direct legislation, is a signal forward march in the great struggle for people's power. There are many who shrank from the advance, and timidly voted for the old things, but most, even of them, will one day be glad that the voters as a whole took counsel of their aspirations and hopes rather than of their fears and their distrust of the principles of democracy. The new era that has dawned for Ohio is an era of life, not the beginning of a period of decay. It means development, not torpor. Moreover, while the new constitution—for that is what it really is—will open the way for many campaigns of a sort to which the people have not been accustomed, in the not far distant future it will bring the State to a status of business stability which will make it the envy of the less fortunate. For in matters of government, where some opinion must rule, there is no body of opinion so stable as the composite opinion of all the people. This is proven by the prosperity and progress of Switzerland where the I. & R. have been in force for fifty years. A good time is coming for Ohio's people and Ohio's business. He who is a bear on Ohio will go broke.

There are a large number of guano islands in the Red Sea region, from some of which shipments of guano are beginning to be made. The conditions for the deposit of guano are, a dry climate and islands where sea-birds congregate. Such are the conditions off the west coast of South America and along the Red Sea coast of Asia and Africa. The more shipments the better.

Storing Fruit Properly

By F. C. Sears

Professor of Pomology, Massachusetts Agricultural College

NEXT to the proper packing of our fruit, the most imperative need of the orchard industry in eastern United States to-day is some adequate system of storage. The larger centers, such as Boston and New York, are usually well equipped, but in the smaller cities and towns and in the rural orchard sections there is usually very scant accommodations. Frequently the cellar of the dwelling-house (or, worse still, of the barn) is the only frost-proof storage on the farm, and while this may frequently provide surprisingly good conditions, it is seldom adequate for the entire crop, so that the owner,

the keener competition which one must certainly expect, whether he subscribes to the "over-production" theory or not!

The Massachusetts Agricultural College has recently erected for the Pomology and Market Gardening Departments a storage-building, many features of which might be used in a regular commercial storage-building for fruits. The accompanying pictures and diagram will serve to give an idea of this building, which is certainly a model of its kind.

In the basement, which is eleven feet in the clear, are located three large frost-proof rooms capable of holding, when filled, some thirty-five hundred barrels of apples. The outside walls are of solid cement, reinforced by further insulation in the shape of a space filled with shavings, and although the past winter was an unusually severe one, the rooms in the basement demonstrated that they are admirably adapted for the storage of fruit. The severe weather arrived here in Amherst about January 1st, and by the 10th the temperature of the basement had been worked down to exactly thirty-two degrees Fahrenheit by ventilating through the windows. From that time on all the windows were kept closed, and the temperature rose very gradually until, on April 1st, it stood at thirty-eight degrees Fahrenheit. This is pretty nearly ideal storage conditions. Six degrees variation in eleven weeks is almost negligible.

On the main floor of the building are located six refrigerated rooms of various sizes, besides a small frost-proof room and a large classroom. The walls in this story vary according to their location. In the walls surrounding the refrigerated rooms the construction is complex, consisting of the following, beginning on the outside of the building: 1, brick veneer; 2, air-space; 3, water-proof building-paper; 4, inch boards; 5, 2x10 studs (space filled with shavings); 6, inch boards; 7,



The frost-proof room in the basement. Windows, closed by shutters, are used for ventilation and cooling

For each room to be refrigerated there is located in the attic, or pent-house, a small vat or bunker, lined with galvanized iron, in which is located a coil of pipes filled with a brine made by dissolving calcium chloride in water. This coil of pipes (known technically as the "primary coil") is connected by two pipes (a "flow" and a "return") with a similar coil (known technically as the "secondary coil") in the room below which is to be cooled. This secondary coil is hung from the ceiling of the room, either in a single section against one wall, in small rooms, or in several sections distributed through the room, in larger rooms. The flow of the brine in the pipes is controlled by suitable valves in the rooms to be refrigerated. When it is desired to cool one of the rooms, the connected bunker in the attic is filled with a mixture of broken ice and salt, using a coarse salt with particles the size of the end of one's little finger. The ice is broken up in the ice-room and hoisted to the attic in a large bucket holding some four or five hundred pounds. This bucket, filled with ice, is then run along on a track (which extends the whole length of the pent-house) until it stands directly over the bunker to be filled, when it is tipped and the ice dumped into the bunker. Salt is then thrown in on top of this ice, another bucket of ice is put in, followed by more salt, and so on till the bunker is full. The amount of salt used varies with the temperature desired and with the outside temperature. It will ordinarily run about five to eight quarts to each bucket of four hundred pounds of ice. If at one icing six quarts of salt have been used and the temperature has not run quite low enough, more salt is used at the next icing. The temperature is also regulated by the valves located in the storage-rooms which control the flow. If more "cold" is desired, these valves are opened; if less, they are closed. With a little experience the system can be run very easily and very accurately. In our college plant the work is practically all done by the ordinary day laborer of the department. The foreman merely keeps track of the temperature from day to day and gives directions as to the quantity of salt.

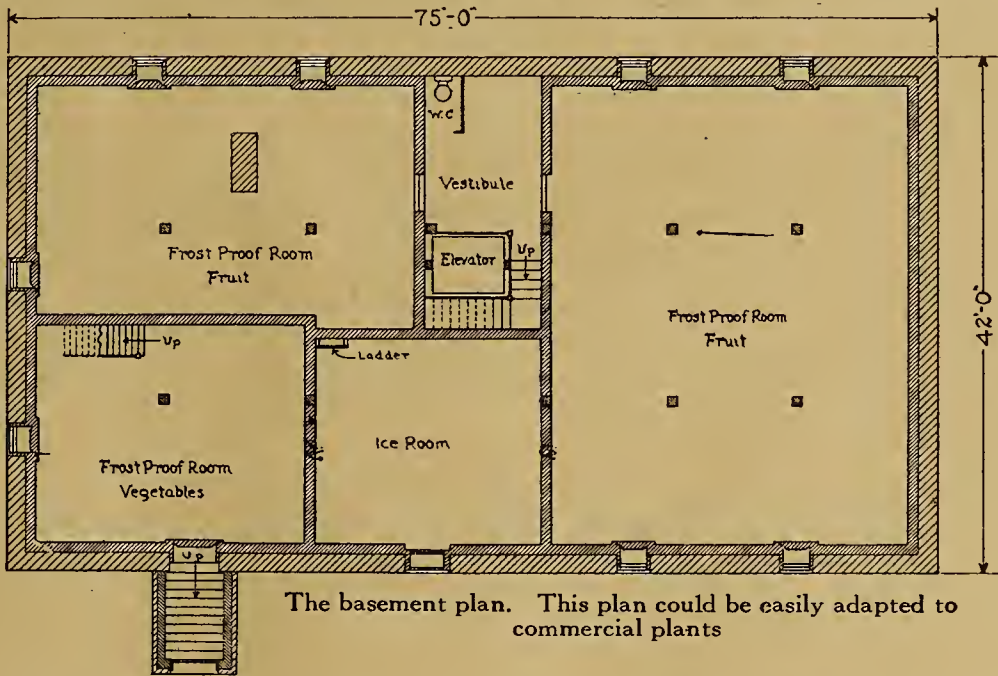
As to the working system, it is exactly the reverse of the ordinary hot-water heating-system used in dwelling-houses. In the latter the furnace is located in the cellar and heats the water, thereby rendering it lighter. This light-weight, hot water then flows out



Front view of the storage-building

in dealing with buyers, loses the moral support which satisfactory and abundant storage-room always brings. On a recent trip to Wenatchee, Washington, the writer was told that the growers there were frequently able to realize twenty-five to fifty cents per box more for their apples because they were not at the mercy of the buyer. Mr. Buyer offered a dollar and a quarter per box. Mr. Orchardist's price was one dollar and seventy-five cents. Said Mr. Buyer, "That is the best I can do." "Very well," said Mr. Orchardist, "I will put them in storage." "Well," said Mr. Buyer, "I will wire the house to-night and see if I can do any better." And the next day, for some reason not explained (and not needing any explanation), the buyer is able to meet the views of the orchardist as to price. This is not saying anything against the buyer. He naturally wants to buy on the best terms he can. The possession of good local storage merely puts the sale on the ideal footing, buyer and seller standing on an absolute equality. The buyer can take the fruit if they can agree in price. If not, it can remain in storage!

In addition to this, good storage conditions, of course, mean that the fruit is going to keep in better condition and will therefore sell for more on the market when it is finally disposed of. And lastly, the consumer will be better pleased and consequently more likely to come again. In these days, when many men, and some of them decidedly conservative men, are looking for what some people are pleased to call an "over-production" of fruit, it certainly behooves the fruit industry as a whole to produce the very best type of storage possible! And it behooves each section to see that its own individual interests are looked after and good local storage provided if it is to keep up in



The basement plan. This plan could be easily adapted to commercial plants

water-proof paper; 8, inch hair-felt; 9, water-proof paper; 10, inch hair-felt; 11, water-proof paper; 12, inch boards.

This, of course, makes a relatively costly and complicated wall, but the materials are easily put on, and the result is certainly a very efficient protection against either heat or cold. The walls surrounding the classroom are much more simple, consisting merely of air-space, shavings and boards. The building is brick veneer on the outside, with a slate roof, so that danger from fire from without is practically eliminated.

On the second floor is abundant storage-room for empty barrels, boxes, ladders, etc., which is so necessary a part of any satisfactory storage-plant.

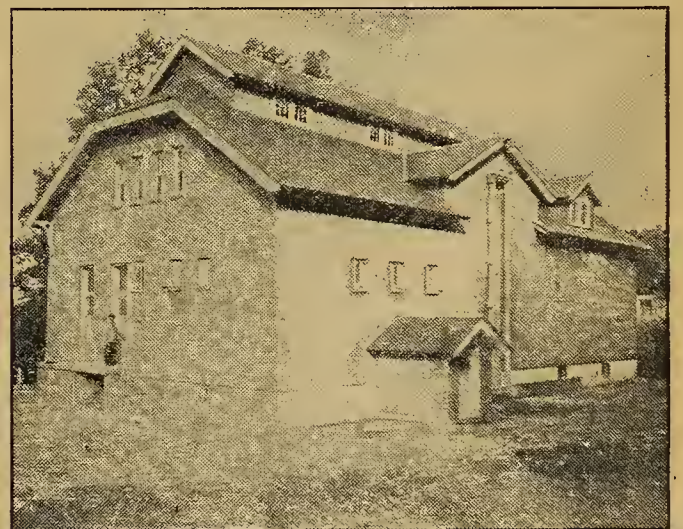
In the attic or pent-house are located the bunkers, or vats, where the "cold" is generated for the rooms beneath. There is also ample room for the storage of the salt used in producing the "cold."

A large ice-room extends from the basement to the attic and has a capacity sufficient to run all of the refrigerated rooms during the entire season. The ice is taken in through an opening on the outside of the building, extending from the surface of the ground to the eaves. This opening is closed by a series of shutters which are put up one after another as the room fills. Owing to the lay of the land, the ice-room can be nearly half filled before any hoisting is necessary, a great advantage in the cost of filling. The ice-room is insulated so that no packing is required for the ice.

Of course, the cost of ice will vary greatly according to the distance it has to be hauled, what the cost of labor is and what, if anything, has to be paid for the ice. In filling our ice-room at the college this year, we put in approximately two hundred and fifty tons, and the cost was as follows:

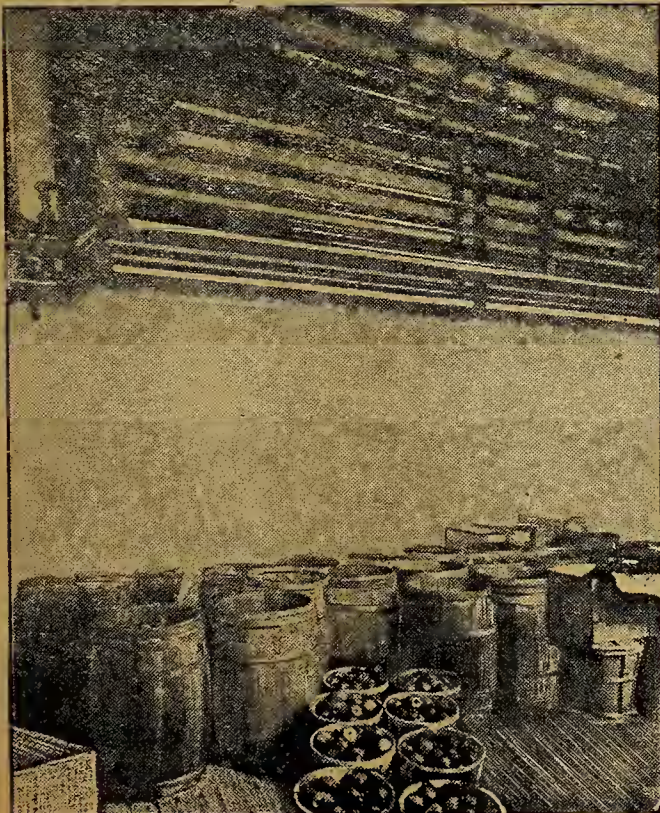
Two men with double teams, eleven days, @ \$4.50 per day per team.....	\$99.00
Two men stowing ice, twelve days, @ \$1.75.....	42.00
Ice	28.00
Total	\$169.00

The refrigerating system of this building is a patented brine system and is very different from most others.



The ice is taken into the building from the rear

through certain pipes and is replaced by the heavier, cold water which comes down through other pipes from the rooms above, where it has been cooled off, or in other words where it has heated the air of the rooms. Now in this gravity brine system the brine is cooled by the ice and salt in the bunkers and is thereby rendered heavier. It therefore flows down, and by its greater weight forces out the warmer brine in the secondary coils of the storage-room and is itself warmed up by absorbing the heat of the room and its contents. The frequency of icing required depends on the outside temperature, on the temperature desired in the rooms and also on the frequency with which new and therefore warm fruit is brought into the [CONCLUDED ON PAGE 12]



The pipes for cooling are suspended from the ceiling



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The Market Outlook

Lots of Apples

GROWERS and buyers are looking for another big apple crop this year. Certain parts of the East will not produce quite as many as last year (principally the Hudson River district), but, generally, in the East, Middle West and West, reports indicate an aggregate yield bigger than for many years past. Never before has there been the demand for cold-storage space. The available space in the Kansas City cold-storage houses, which are among the largest in the country, has already been engaged by far-seeing buyers, who predict a market similar to that of last year.

Last year enormous quantities of poorly graded apples demoralized the market until shortly after Christmas, when the common storage fruit gradually disappeared. These were replaced by well-packed and graded cold-storage fruit, which ended the season with good prices.

It is hoped that the experience gained in these two big harvests will prepare the way for better fruit and more efficient distribution. For these apples have mostly been produced on our older orchards. With the coming into bearing of many young orchards planted all over the country, a very great effort will have to be made to reach all classes of people with an almost continuous supply in order to dispose of the product. This in itself will tend toward better fruit.

Apples "in bulk," except in seasons of great scarcity of fruit, have never paid the producer. With the acreage soon to bear, however, poorer grades will stand far less show, and it even seems probable that a very stiff competition will arise among the very best growers as to who shall sell at a profit. For this reason city men about to enter the apple-growing field should think more than twice before venturing to compete with those who have made orcharding a study and a lifelong business.

A. J. ROGERS, JR., Michigan.

Giving the Sheep Credit

DURING the past six weeks or so no material change has taken place in the prices of sheep and lambs, but at the commencement of the present month there seemed to be a feeling developing that, as compared with cattle and hogs, they were unnaturally below their value, and this idea was strengthened by the facts that fewer sheep of all classes were coming in to the markets, and the packers seemed anxious to replenish their stocks. Everywhere the idea seems to prevail that prices must advance.

The production of sheep and lambs, according to the United States Department of Agriculture, is decreasing both in the farming States and on the ranges; and thoughtful sheepmen are beginning to wonder where the feeders are going to find lambs. It is even estimated that but sixty-five per cent. of the usual number of both sheep and lambs is forthcoming. If this estimate is any way near the truth, despite stomach-worms, dogs and high-priced land, farmers had better get back into sheep-breeding, for the first two of those troubles can be avoided, and the sheep are largely responsible for the last.

The crop reports of the United States Agricultural Department, as well as those from State and private sources, all agree that this will turn out to be a year of most unwonted plenty, and especially in oats, hay and most of the forage crops. The United States estimate of oats seems almost fabulous, it being put at a billion and a quarter bushels, being eighty million bushels in excess of the great crop of 1910. This should be most encouraging to sheep breeders and feeders, for experience has fully proved that there is no ration which produces mutton and wool more quickly than a combination of oats, bran and linseed-meal in the proportions of one-half oats, one-fourth bran and one-fourth meal. This, with hay and good, clean oat-straw for dry fodder, with a daily run on rape, rye or clover, and, when in the yards, alfalfa or corn silage, will finish any lot of well-bred lambs in from ninety to one hundred and twenty days "to the king's taste." Nature has produced no machine which will earn good money more certainly and quickly for the farmer, and do as much toward maintaining and increasing the fertility of the soil, as a well-bred flock of ewes and a pure-bred Shropshire ram.

Only three or four years ago it was rare to see any notice taken of sheep in even the best of the agricultural papers, while now it is a rarity to find one of them without some laudatory notice of our woolly friends; and, with mutton steady at a fairly remunerative price and wool soaring into the clouds, it is probable that more space will be awarded them. It is curious to reflect that on our six millions of farms thousands of boys and girls are to be found who, though well acquainted with the discordant grunt of the old sow when the little pigs wake her up from a nap, or the dismal bellow of poor muley when her calf is taken from her to be converted into immature veal, have never

heard the tender bah—a—a of the mother ewe recalling her wandering lamb, nor the pleasant patter of the "golden hoof." Only yesterday, in a talk with a quite intelligent farmer from a part of Illinois in which I once lived, the question being asked him whether they had as many sheep now as they used to keep thirty years ago, he answered, "Oh, no; we can't afford it. When you lived there, our farms were only worth \$70 or so an acre, now they are worth \$150." He failed to give any credit to the fertilizing qualities of the sheep he used to keep; and though living seven miles from a railroad and sixteen from a city he seemed to think that he owed the increased value of his farm to what, I suppose, he would call the "un-earned increment."

JOHN PICKERING ROSS, Illinois.

An Active Hog-Market

WITH rather light current receipts and an outlook for a light packing season this winter, hog prices are gradually working upward, even though they have already reached a high level. During the early part of September top hogs passed the \$9 mark in Chicago, but this figure was only obtained for a few lots of choice shipping weights. General trade sentiment is optimistic, and some few even dare to predict \$11 hogs in the not far distant future. The South, which has been a light buyer during the summer, has changed its policy and is buying provisions heavily. Quarantine for foot-and-mouth disease in Ireland has taken Irish bacon out of European markets, forcing them to buy the American product.

The large packers oppose every advance, and this will be a prominent factor in the trade for some time. Their purchases consist of the plainer stuff and bacon hogs. The tops are picked out by the speculators and eastern shippers.

The territory tributary to Chicago has started sending pigs to market in considerable numbers. This would seem to indicate a similar condition to that of last year, but it is hardly believed to be such. A larger proportion of half-fat hogs are among the receipts, making a widening of the price-scale necessary. A portion of the growers are evidently anxious to cash in at present prices. This has lowered the average weight and quality of the offering.

The main supply for the packing season is expected from much the same territory as furnished the bulk of the midsummer run—Iowa, Nebraska and South Dakota.

In the provisions market much the same conditions exist. Sales have increased, the market has become active and higher prices have resulted. L. K. BROWN, South Dakota.

Stock Cattle High

NEW high records for fat cattle continue, and stock cattle of good quality are very scarce. There never were so few good stock cattle offered on the markets as now. Men who were pretty well posted on the cattle situation went out where the cattle grow and contracted practically everything for sale that had any quality, so that the stockyards statistics as to the amount of cattle to be marketed is liable to be erratic. The real fact of the matter is that no one knows, and no one will know until the grass cattle are marketed, how short the supply of such cattle really is, and no one can get any good idea of values from newspaper reports, as the stock cattle coming to market are so exceptionally poor in quality. As a general rule, at this time of year pastures are short and the cattle are marketed freely. But this year grass is abundant all over, and men who have stock cattle in small lots seem in no great hurry to sell. Cattle are still putting on weight, and there is little, if any, chance of a falling market. One noticeable thing in our western markets is the let-up this year in receipts of beef-calves (suitable for baby beef). Heretofore, in mixed shipments of range stuff, there were quantities of calves. This year the ranchmen are not selling, but keeping, the calves. It would be a pretty hard thing to fill a good-sized order for quality calves, and there's no saying what the price would be. I see little or no chance for stock cattle to cheapen much this fall.

W. S. A. SMITH, Iowa.

The consumer of milk can form a fairly accurate opinion of a dairyman's herd by noting the kind of nag that pulls the milk-wagon.

"As we draw nearer Christmas," observed the little girl, "the days get shorter."

"Yes," remarked the little boy, "and the weeks longer."

Every farmer should have some place that he calls his office. It may be a secretary in the corner of the sitting-room, it may be a small room in the granary or perhaps a part of the milk-house. But whatever it is, there he should have his accounts, farm records and valuable papers. More system is needed on most farms.

Select Seed-Corn Early

EVERY good practice has a reason for its being, and according to whether this reason seems sound to those who have occasion to use the practice determines its popularity.

The early selection of seed-corn is a good practice, and its acceptance as one great step in increasing corn production cannot be overlooked. It is not accepted by a great many farmers as essential, owing largely to past experience. They say that their seed has been selected from the crib year after year with good results, so why not now? Yet contrasted to this claim Sam Jordan, the Missouri corn-man, says, "There is only one worse way to get seed-corn, and that is to get it after night from your neighbor's crib."

Now we grant right here that crib-selected corn has given good results in the past in the majority of seasons. But we insist that there always have been seasons where its germinability was very low and the next crop suffered badly.

We also grant that crib-selected corn will probably grow all right in the majority of future years, with the exception of seasons following heavy fall rains and early freezes. But mere growth is not all that is now demanded of good seed. An animal may grow rapidly and develop into an ungainly, unprofitable beast. So may a stalk of corn grow rapidly and be barren. In the past our fields produced abundantly almost regardless of the quality of seed sown, but now that excess of fertility is gone forever, and the best of seed is only one step in the production of good crops.

Therefore, seed-corn should be selected early, not only to insure its being thoroughly dried out and properly stored, thus assuring good germination, but also to insure seed of proper parentage as nearly as possible.

When you pick out a nice-looking ear from the crib, you can never tell whether it was produced by a slim stalk or a stocky one, whether it grew two feet high or ten. But if you pick those seed-ears before husking, you can choose the stalk too.

When the corn is well matured, go through the field, and pick good ears from strong, stocky stalks. These stalks should be eight or nine feet high under Missouri conditions, thick and flat at the base and bearing the ear about four feet from the ground. Such selection breeds remarkably true and will mean much in preventing stalks from blowing down and in ease of husking.

The ear itself should always hang down, this to prevent water standing in the husk and spoiling the grain. So much has been said about the proper shape of the ear that it is hardly worth while to repeat it here. But remember this, that experiment has proved that long ears are the best producers. Judgment must be exercised, of course. Don't take an ear because it is big, but select your seed as large as will safely mature in your locality.

Now it only takes about fourteen good ears to plant an acre. Is it too much trouble to select the few bushels that will be required for next year's crop? Down in southwest Missouri an experiment-station man made this test: He secured seed-corn out of the planter-boxes of about a dozen farmers while they were planting. Each lot of seed was planted, all on the same day, on the same sized plot and on the same kind of ground. It was thinned to the same stand and treated the same throughout the growing season. When the corn was husked however, one plot stood out far superior to the rest. The yield was so much better that upon figuring the value of actual corn produced in this case and the average of other plots it was found that all the men in the neighborhood could have paid this man \$52 a bushel for seed and made as much money as they did make. Why? He had a good variety and well-selected, well-cared for seed. They had not.

F. H. DEMAREE.

Sleeve for Corn-Cutting

WHEN cutting corn by hand, with a sled, or in setting up after a binder, a great deal of the carrying will be performed by the one arm. As the continual rubbing of the stalks and leaves rapidly wears holes through the cloth of an ordinary garment, special protection for this one arm is required.

We have found a very economical way of providing this extra sleeve by utilizing the trouser-legs of old overalls. This portion of the garment is cut to the proper length and so as to fit not only over the arm, but also over the shoulder, side and chest. This is held to the arm by means of an overall suspender passing around the body just beneath the other arm. This allows the arm free movement and at the same time holds the sleeve firmly in place.

As it keeps wearing through, additional patches can be added to it. It thus becomes anything but a comely attire, as would any other garment; but has the decided advantage of being cool as compared to an entire overshirt, as well as being easily put on and removed upon entering and leaving the field.

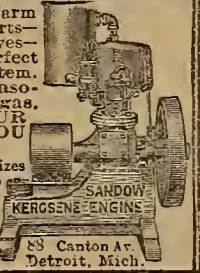
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2½ H.P. Stationary Engine—Complete

Gives ample power for all farm uses. Only three moving parts—no cams, no gears, no valves—can't get out of order. Perfect governor—ideal cooling system. Uses kerosene (coal oil), gasoline, alcohol, distillate or gas. Sold on 15 days' trial. YOUR MONEY BACK IF YOU ARE NOT SATISFIED.

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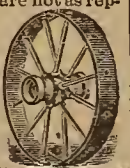
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Your name and address on a postal card will do. We will send you FREE a Perfect Measuring Device to measure your axles with. Send for Catalog of 1912 Models of our Famous Empire Farmers' Handy Wagons. Address: (30) Empire Mfg. Co., Box 523, Quincy, Ill.



How the Farm Telephone ought to be built. Page 10

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THE COUNTRY GENTLEMAN

(The Oldest Agricultural Journal in the World)

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 For 25 cents—half price

THE oldest agricultural journal in the world changed hands a year ago. It had been issued for 80 years; yet in this last year 60,000 more farmers than ever before have begun to buy it. We offer it to you on trial for four months for 25 cents—half price.

THE COUNTRY GENTLEMAN is a national weekly devoted to agriculture as a great business industry. It is the answer to a demand. In England "the country gentleman" is a man of means, with estates cultivated by others. In America today "the country gentleman" is the business farmer. Here the efficient owners of farms do not differ socially or intellectually from the heads of factories or commercial houses. They are business men.

And these are days of rapid changes—in cultivation, in marketing, in farm management, in government agricultural policies, in rural life. Many a farmer gets little more than 30 cents out of every dollar he ought to have. The middlemen get a lot of it. More goes because of wrongful taxation, too great overhead expense, and failure of the farm to yield all it would.

To help our readers solve scores of problems, both national and local, we spare no expense. We get and print up-to-the-minute and down-to-the-ground information and advice. Our experts are men in the field, the dairy, the orchard. They write sound common-sense, and they write it clearly. To give you their practical experience we spend \$75,000 a year. We believe you want the benefit of all this. You can try it for seventeen weeks for only 25 cents. This is solely a trial offer—it never will be repeated.

Four Regular Weekly Departments, Alone Worth the Subscription Price

Women's Cares, Comforts, Clothes and Cooking

Our departments for women appeal directly to the woman in the country. They include four regular features, all ably written: (1) Practical Talks by a country woman of experience on problems of the hired man and hired girl, training of children, pin-money, etc. (*The Country Gentlewoman*); (2) Foods and Cooking, country dishes, pleasing new recipes from East and West—preserving and canning; (3) The Rural Home—its furnishings and decorations; (4) Sewing—how to make clothes stylish yet practical—embroidery, laces and knitting ideas.

\$1106.85 From a One-Acre Garden

A net income of \$1106.85 in twelve months from a little one-acre home garden was the achievement of one man, who tells us how he did it. There is always definite and helpful information on gardening in our *Home-Acre Department*. THE COUNTRY GENTLEMAN will aid the man who is trying to get his living from a little land—or the man who raises a few delicacies—or the city man who has not yet given his whole time to farming—as well as the big commercial gardener.

How Are Crops and What Are They Worth?

What crop to grow? When to sell it? These questions determine profits on most farms. THE COUNTRY GENTLEMAN employs a national expert on crop reports to write a weekly department on *The Crops and the Markets*, giving the changes in prices and the market demands. Also there are special articles telling how to put each crop on the market in prime condition so as to get the maximum price. No farmer who reads this department regularly, and supplements it with a local newspaper, can be ignorant of when and how to market his crop to get the greatest returns.

What is Your Congressman Doing?

The Presidential campaign, the State campaigns, involve today many issues of direct personal importance to farmers. You want a way to follow easily and accurately what the politicians are doing. That is what the *Weekly Congressional Calendar* in THE COUNTRY GENTLEMAN is for. It does it successfully, always with an eye for the agricultural interests. By it you can check up the votes of your own representatives in congress and legislature on things that mean dollars and cents to you.

Here Are Five Important Special Series That Will Appear During These Four Months

A Master Farmer and His Fifty Farms

In the Genesee Valley, New York, one man owns some fifty farms—over 10,000 acres in all. They are rented—many of them have been for a century. The rental is \$2 to \$4 an acre, according to the crop. Much of this land fifteen years ago returned only seventy-five cents an acre—some of it, nothing at all. Now it is all on a paying basis. How this master farmer manages this enormous estate, and aids fifty tenants in making a profit, is told in one article of our series on successful farmers. It's the story, not of a fad, but of a money-maker. So with all this series. The articles deal with big and little farms in various parts of the country.

Wiped Out By Fire

In New York State alone there were 5800 farm fires last year. They caused a loss of \$1,500,000. Most of them could have been prevented. Lightning caused 1800—many of these were preventable. We shall print a series of articles on fire prevention and protection covering (1) What farm fire losses represent and how they threaten the average farmer; (2) How to guard against fire; (3) How to put it out if it starts—up-to-date home fire-fighting apparatus; (4) The best kinds of insurance on buildings, crops and livestock impartially compared; (5) Actual facts about farmers' mutual insurance companies that have worked. These articles will show you in a practical way how to strengthen your protection against the possible loss of your property or profits.

What Can Your Boy Earn?

Six graduates of different agricultural colleges went back to the farm, as thousands of others are doing. They farmed by the help of what they had been taught in college. Some did brilliantly from the first; others just held their own; all are now what you would call successful. They have consented to write what they did and how they did it. In particular, they will say just how their training panned out when actually put to test. Is your boy going to an agricultural college? Get a line on the possibilities that await him, the salary he may expect to earn, the capital he may need in future.

Good Marketing By Advertising

Six years ago a farm hand in a Western State rented some land and grew a crop of fine seed grain. Last year he sold over \$15,000 worth of pure-breed seed grains, and is known as one of the seed experts of the world. Judicious advertising did it.

A student in a leading agricultural college heard a lecture on advertising. He went home and prepared some small ads. for produce. In six weeks he sold for nearly \$1000 goods which might otherwise have brought less than \$400. The methods of these men and a dozen others will be told in our series on "Farm Advertising." It covers advertising of pure-bred livestock, seed grains, produce, dairy products and fruit. Several stockmen of national standing will contribute. All details explained.

What is Your Money Crop?

If your farm were big enough, and the soil, climate and market conditions varied enough for 30 crops, you would like to have 30 experts—one for each. But the cost would be too great. Most successful farming communities center attention upon a single crop adapted to the locality. To diversify or combine crops offers greater returns from year to year, but it is necessary to have one crop that you may promptly convert into cash to meet running expenses.

We are printing a series on "The Money Crop." The articles will be written by 30 experts—on wheat, corn, tobacco, cotton, hay, potatoes, pork, beef, milk, wool, and so forth. Each article will show the essentials in business management, soil, climate and capital, and the returns which may be expected. They will include personal experiences.

Beside these, we have frequent practical articles on poultry, livestock, the dairy, farm machinery, road building, the rural school, the church, the grange, farmers' clubs and other aspects of country community life; coöperative marketing; building and furnishing the house; a regular department on the scientific advance of agriculture and new inventions; wholesome fiction of country life, stories and verse; a letter-box and a strong editorial page that stands always for the interests of the farmer.

OFFER Sixty thousand more farmers than a year ago are already buying THE COUNTRY GENTLEMAN at 5 cents a copy, or \$1.50 a year, the regular price. If you knew THE COUNTRY GENTLEMAN as they do you would be glad to pay that amount and more for your subscription. You know our other publications, THE SATURDAY EVENING POST and THE LADIES' HOME JOURNAL. We want you to know THE COUNTRY GENTLEMAN. The Curtis Publishing Company never gives premiums, bonuses or clubbing offers. But it is good business for us to get THE COUNTRY GENTLEMAN into your hands. You will judge for yourself. In order to give you a fair chance to see with your own eyes that it is everything we claim, we will send it to your home until February 1, 1913, for 25 cents. This one-half reduction in price is solely a trial offer for new subscribers. It will never be repeated. Fill in and send the coupon opposite (or, if you wish to save the paper in which this is printed, write us a letter, giving clearly your name and address, enclosing 25 cents).

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Live Stock and Dairy

The Popular Milkman

THE American farmer commonly regards competition as a struggle between various manufacturing concerns, and counts himself out when the game of competition is merrily proceeding. But if he will consider with me the large profits which clear-sighted business men have reaped by transferring many operations formerly done on farms to city dairy establishments, he will see that in one respect, at least, he is very deeply concerned.

In all large cities the milk business is handled quite exclusively by well-organized companies which can operate more efficiently and cheaply than the farmers themselves, if they chose to distribute their own milk in a retail way. But in most cities of less than twenty-five thousand inhabitants local dairymen deliver their milk to the consumer, and these dairymen may adopt with profit many, though not all, of the approved operations of city milk-plants to their own advantage and benefit.

It is to the farmer who operates a milk route or is interested in one that the following suggestions are particularly addressed:

Bottled Milk is Most Popular

Wherever you will find the cleanest and most intelligent people, you will find the greatest demand for bottled milk. A large amount of milk for direct consumption is still delivered in cans, but bottled milk is gaining favor for a number of reasons: First, the milk is cleaner and has better keeping qualities than milk sold from cans which are frequently opened and exposed to the dust of the roads. Second, the customer is more likely to receive milk of uniform richness and quality than if poured from a can, the contents of which are seldom thoroughly stirred. Third, a bottle of milk is a convenient and handy package both in the kitchen and in the method of delivery. It saves time for the milkman. Fourth, the housewife likes to see the cream-line on the milk. This fact alone is largely responsible for the popularity of bottled milk.

The Cream-Line on Milk

When milk has been well cooled and allowed to stand undisturbed for twelve hours, most of the cream rises, and the line between the yellow cream and the white milk is quite distinct. Few advertisements for securing and holding trade are better than a low cream-line, which indicates a large amount of cream. The depth of the cream-line in average four-per-cent. milk is about three and one-half inches for a quart and two inches for a pint, but these figures may be increased by selecting milk-bottles with slender necks.

The latter also makes it easier for the housewife to separate the cream from the skim-milk if desired. The position of the cream-line is only a general and approximate indication of the actual amount of butter-fat contained, for all skim-milk contains a small amount of butter-fat.

Jersey and Guernsey milk which has large fat globules creams more quickly than that of other breeds or a mixture of breeds. For this reason, at least, a few Jersey or Guernsey cows should be kept to improve the separating quality of the milk in case the cream-line is slow in forming. If milk is to be Pasteurized, the maximum temperature for this process should be 150 degrees Fahrenheit, for higher degrees of heat will interfere with the creaming of the milk, and the cream-line, if any, will be indistinct.

As is well known, the temperatures used

in Pasteurizing milk properly destroy large numbers of bacteria and render the milk safer as a human food. Where the milk from many farms is mixed, the process of Pasteurization is urgently recommended, but if a dairyman sells the product of his own herd, Pasteurization is not to be recommended if all of the animals have been examined by a veterinarian and found to be free from all disease, tuberculosis in particular.

Clean milk does not require Pasteurization any more than pure water needs to be boiled. But the milk must not only appear clean; it must be clean. In this connection, cement floors, walls, drinking-tanks and mangers will be found instrumental in maintaining a high standard of cleanliness.

A study of the state and local dairy regulations should be made before the milk-route is started. It is well to cultivate the acquaintance of the dairy inspectors, as many valuable points may be learned through their observation and experience.

The Milkman and the Law

Then after doing all that the law requires, do a little more. Customers form their conclusions from the keeping quality of the milk, from the appearance of the delivery-wagon and the milkman's personal appearance. A neat, well-painted, enclosed wagon will protect the milk, the driver and the driver's clothes as well as make a favorable impression in the eyes of customers.

Occasional inquiry on the part of the milkman into the length of time the milk will keep will indicate the desire to give complete satisfaction. In delivering milk, place the bottles or receptacles in such a place that cats and dogs will not be able to lick them. By thus conforming to the unwritten laws of cleanliness, as well as to the standards of good business and honesty, dairymen may wipe away the stain which has so long clung to their occupation, and may contribute to their own welfare, as well as to that of the public and the rising, milk-drinking generation.

DALLAS S. BURCH.

Her Majesty!

WE BREAK into "song" now and then, When we see the busy hen And think of how her chicks will sing Welcome to the glad, glad spring.

And before anyone has a chance to say that this is bad poetry, and an insult to Her Majesty, let us insist that we realize how bad the poetry is, but insist also upon the importance of the hen and her chicks.

Likewise, we pay our respects to the dignity of Her Majesty.

Her Majesty is one of our chief sources of revenue and to be respected, and since chicks finally become hens (or roosters), chicks are to be equally respected.

No man is so obstinate as a hen perhaps, but, also, no man has the patience of a hen for where will you find a man who would "set" on a collection of uncommunicative eggs until those silent eggs became voluble hens-to-be?

Women work hard and talk much, but show me the woman who digs and scolds so industriously as Her Majesty.

Let men become inordinately inflated by their own importance because they escape criticism, let men be reminded that no man can so thoroughly and absolutely control one wife as a rooster can control his harem!

And where's the man who can gain a fat, even a luxurious, living by merely looking pretty and strutting about for the edification of his female folk—tell me that!

Where is the human mother with the bravery of the hen mother, where is the human mother who, without arms or ammunition, will attack a grizzly bear to protect her youngsters? Did you ever see a mother hen fail to fly to the rescue of her kidlets, no matter how big the man, no matter how ferocious the dog, no matter how formidable the cat, which might threaten or attack her home?

What man can sing so cheerfully, so melodiously, BEFORE BREAKFAST as Mr. Cock?

What man takes such solicitous care of his dependents when nighttime comes, tucking them away carefully, whispering to them, soothing, lulling them to silence and restful sleep?

Show me a human male and twelve human females who, without implements of any description, without owning one square inch of ground, without law to protect (or intimidate) them, can wander at will and pick up substance for their own upkeep, and to spare—and to spare in such sufficiency that they will at the conclusion of each day have something to sell!

Can't you hear Her Majesty as she argues:

"I labor hard and constantly; I continually sing a roundelay. Although I'm busy as a bee, if you will watch me, you will see that with a little of your assistance I can produce my own sustenance."

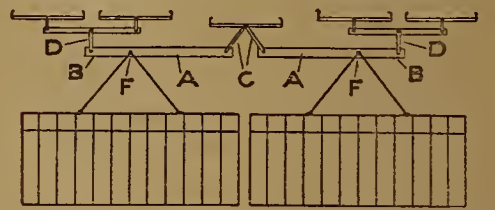
G. HENRY.

Placing the water-tank on top of the silo, keeping it well filled with water, and attaching a system of pipes and smaller tanks on the ground, comes very nearly solving the question of water-supply on the farm.

Using Five Horses

MUCH harrowing has to be done on wheat-ground in the winter-wheat belt, and the farmers have long ago learned the economy of good harrows of large width. The four-horse single-hitch harrows are the most popular, but on all the larger farms the six-horse (the dealers call them four-horse) double-hitch harrows are most extensively used. If one has much harrowing to do, four horses can't stand up under the heavy strain, and six are used instead. Oftentimes six horses are not available for one reason or another, and it would be a great convenience to be able to use five. I was in a predicament two years ago when I had one thousand acres to harrow and had a six-horse double-hitch harrow and five horses to do the work. Four horses on the big harrow could not harrow as many acres as four on a four-horse harrow. But "necessity is the mother of invention," hence my five-horse evener.

The following is a description of how I made this five-horse evener for this particular harrow. Different lengths will have to be used on different harrows, but the proportions should remain the same. The spread between the hitches on my harrow was eight and one-half feet. I took two pieces of two-by-six-inch pine, each five feet long, one foot from one end of each piece (B) I bored a one-half-inch hole. I fast-



ened these pieces to the hitches (F) with the long ends (A) toward the center. At the outside ends (B) the two-horse eveners were attached with strap irons (D). At the end of the long part (A) of each piece a pair of strap irons (C) were fastened, the free ends of which were loosely bolted to the singletree for the fifth horse.

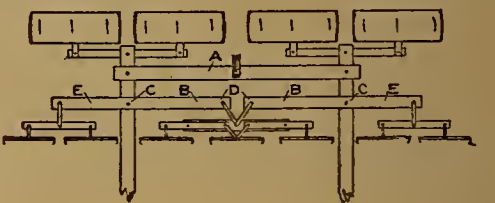
Aside from the advantage of being able to use five horses on a harrow that is too much of a load for four, and where six are not available, is the added ease with which the harrows kept at right angles with the direction of harrowing, which is so essential to the best quality of work. IVAR MATTSO.

Using Seven Horses

THIS farm help I have frequently used, and I find it works fine. It is a handy tool where help is scarce.

I use two disk harrows. Bolt them together with a two-by-six-nine feet long (A). Bore holes six inches from each end. Take both seats off. Bolt the two-by-six where the seats were. Put a seat in the middle of the two-by-six.

I used a seven-horse evener for this, and this is the way it is made: Take two two-by-fives, six and one-half feet long (BB). Bore a hole three inches from each end, and then another hole (CC) two and one-half



feet from hole at either end. That leaves three and one-half feet from end (DD). Bolt in place on the tongue with the short end out. Put a two-horse evener on the short ends (EE), and a three-horse evener in the center. Fasten at DD with strap irons ten inches long. This evener works well on a disk with tongue trucks.

FRED W. PAGEL.

Producing the Market-Hog

ANY farmer may or may not be a breeder of pure-bred hogs. It must remain true, however, that most farmers (those supplying market demands) will simply use the pure-bred stock from other farms. Many modern farmers could no more think of breeding all the stock they need in their market-supplying work than they could think of making their own shoes, or their own farm machinery or their own automobiles.

And so it follows that the object of many farmers in raising hogs becomes very different from that of the professional breeder. The object of the man who makes a profession of breeding is to constantly improve his breed and if possible to attain to a higher standard of individual excellence, while the farmer is more interested in securing that animal which will most advantageously convert the products of his farm into more profitable and eatable commodities. The farmer can well afford to spoil a pedigree for the sake of improvement in health, growth and general qualities of the shoat he intends to fatten, for, when it brings him the same price at the block, with probably a little less expense, his chief end is attained.

One never hears a butcher making any close inquiries about pedigrees. You will

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This is the famous TEMPLE which stands on its feet—the up-to-date Economical Engine that has won every prize contest against well known makes. Practically no vibration! Explosions take place low down close to the ground which absorbs and does away with the shock and strain on the engine. In every other engine explosions occur high up, causing violent vibrations that reduce life of engine. Crank Shaft over Cylinder secures perfect lubrication by gravity. No other engine has this! "TEMPLE", alone, has downward lubrication—hence less friction and greater power from every pint of fuel!

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find the butcher particularly busy feeling the ribs to determine the condition of flesh. But the breeder must reach the same end and preserve the value of the pedigree that the farmer does to the cross. It is far easier for the farmer to find a perfect ham in the Poland-China sow than in the Berkshire, and he can find a far higher degree of perfection in the chest and neck of a Berkshire boar than in a Poland-China, while the breeder must perfect these points by careful selection in his own breed.

Crossing Pure Breeds Seems Desirable

The crossing of pure breeds seems to heighten the general development of the offspring and secure to the feeder an animal having more aptitude to fatten. It gives that tone and vigor to the system not attained in any other way. I therefore recommend a cross to the farmer, and it should be secured by coupling the Poland sow with the Berkshire boar, for the reason that a Berkshire boar always begets a litter of pigs that are uniformly small and do not cause difficult labor in farrowing, while if the cross is made by coupling the Berkshire sow with the Poland-China boar the sow often dies from the effects of difficult labor, from the large size of the pigs. The Berkshire sow is not so prepotent over the Poland-China boar as is the Berkshire boar over the Poland-China sow.

The Poland-China and the Berkshire are the best breeds we have, and happily the points lacking in the one are found in the other. If we could combine the excellence of the two breeds and at the same time discard the defects, we would have the perfect animal. There is a decided tendency in this direction.

The broad, deep and full chest of the Berkshire and the long, square frame of the Poland-China are fixed points and are retained in the cross. The head of the Berkshire is strongly set on a heavily fleshed neck and has a firm, erect ear. The head of the Poland-China is too pendent, like the ear, and the neck thin. The chest of the Berkshire is really an example of perfection, being broad, deep and full around the heart, while that of the Poland-China is flat, often sunken behind the shoulder and narrow in the region of the heart. Owing to this fact, the Poland-China is not as hardy as the Berkshire.

The ribs of the Berkshire are nicely sprung and arched, while they are more flattened in the Poland-China.

But now I come to the point in which the Poland-China is par excellence; namely, the ham. The man who originated this breed certainly had a decided liking for ham, baked, broiled or fried. The Poland-China ham is certainly very highly developed. This particular point is a little below par in the Berkshire.

We can trace this light ham in the Berkshire clear back to the wild hog of the European countries. However, there are some fine specimens of this point in certain families of the Berkshire, yet there is still a tendency for the ham to "run out" in the Berkshire. The bone of the Berkshire is smaller than that of the Poland-China. The Poland-China is a longer hog, will grow to an older age and attain a much larger size than the Berkshire.

During the age of pig-hood the Berkshire fattens better than a Poland-China pig. The Poland-China sow is a better suckler, but the Berkshire sow is the better mother. The Berkshire is a better grazing hog. The Poland-China is a more docile animal.

Look After the Hogs Yourself

Giving personal oversight to and always becoming thoroughly "acquainted" with my hogs, I always have to have a new introduction to my Berkshires after they have "run" on the stubble of a hundred-acre wheat-field for a month, but the Poland-Chinas and their cross are invariably friendly and tame.

The flesh of the Berkshire is finer grained and will uniformly sell for a higher price. It has always been a theory of mine that a farmer should know his hogs not only collectively, but individually. All of my brood-sows are named, and so well do they know their names that they will come to me at the call of the name as would a child. All of my hogs are controlled by a whistle. I have never taught them to come by "calling" them.

Even when one of my young sows is farrowing for the first time, she is so tame, so docile, that I handle her or her pigs without trouble.

Some years ago I bred a thoroughbred Chester White boar to half a dozen Poland-China sows. Every pig from that cross—and there were fifty-seven of them—was pure white. They were a beautiful lot of hogs and at "killin' time" made the finest lot of meat that I ever saw. At ten months old they averaged 290 pounds, each, dressed. This lot of hogs was pastured on Dwarf Essex rape, red clover, hickory "mast" and finished off with old corn. They were never in the "fattening-pen," but had the range of a fifty-acre wood-lot.

I firmly believe that a hog, if properly and sufficiently fed, will not "run any fat off," if not penned, but will exercise just what is good for him and no more. The Chester White Poland-China cross was in the Middle West; I do not know how it would succeed here in Alabama. **BRADLEY HANCOCK, JR.**

The Corn Scoop-Fork

LAST season we purchased one of the pronged scoop-forks made for loading corn in the field at husking-time. We find it somewhat faster to scoop the corn into the wagon-bed than to pick it into a basket and then empty it, if the ground is level and loose enough not to hang together in chunks too large to pass between the prongs of the scoop. This condition we seldom find, however, as a corn-pile usually extends over one or more hills of corn stubble. Also, our ground is usually uneven, being ridged from wheat-drilling. When it is moist, it is tenaciously cohesive; when dry, cloddy. Then, too, when one person does both the loading in the field and the unloading at the crib, the continuous scooping becomes too laborious. For these reasons we have discarded the scoop-fork in the corn-field.

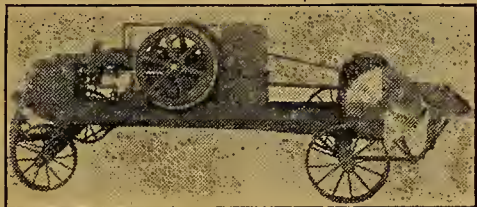
In the stable, however, we find it quite efficient in another capacity. Where corn-stalks are used as bedding, the ordinary sharp-pronged dung-fork pierces too many of the stalks to be very desirable in stable-cleaning. With the blunt-pronged scoop-fork this trouble is much eliminated. The prongs are somewhat close together for long stalks, but when the stalks and manure are fine, it works admirably. **P. C. GROSE.**

An honest man will pay back the money he borrows from his wife, and a wise one will see to it that she has a purse from which he can borrow a little in a pinch.

For three or four years we have sprinkled powdered sulphur around the edges of the mow when we put in oats before threshing, also when putting corn in the crib. It keeps away rats and a good many mice.

For Quick Work

THE combination of a horizontal gasolene-engine of ten-horsepower capacity mounted for driving a saw on a truck is shown in the accompanying illustration, the entire outfit weighing about 2,900 pounds. The circular saw mounted at the rear of the



truck measures thirty inches in diameter and is belted to the engine, which operates at a speed of three hundred revolutions per minute. The gasolene-motor is of the water-cooled type; the tank containing the water for circulation for the cylinder-jacket is mounted between the saw and the electric battery-coil, and switches are mounted under the seat ahead of the engine. **FRANK C. PERKINS.**

Afterthoughts

Care killed a cat, but has anyone ever tried it on a dandelion?

The diligent hand maketh the light task, particularly where it has the backing of the long head.

Easy work and happiness are not identical, but they are somewhat alike in that either is likeliest to be had by those who seek it the least.

A practical politician is a politician who knows how to get up a sham battle that will seem real to as many of the people as much of the time as need be in order to keep his party in office.

The love of money, in its wild state, is the root of all evil, but cultivation will do wonders for any sort of noxious growth. Some of our most beautiful and useful plants were weeds, to begin with.

The feminist movement is making women so much more confident of themselves that the horse which will be perfectly safe for a woman to drive and which, at the same time, a man will not be ashamed to drive is now thought to be a possibility of the not distant future. **RAMSEY BENSON.**

Sign Your Letters

ARE you writing to us to-day, or to-morrow, or next week? Whenever you do, do not fail to sign your letter. Here is a letter that we received the last part of August:

EDITOR FARM AND FIRESIDE: I see in your paper of August 17th that you would send to FARM AND FIRESIDE readers the names of commission men that are honest. Will you kindly send me the name of someone in New York City that handles eggs and poultry? Yours very truly,

and that was all there was to the letter. Now, we would be glad to accommodate our readers with such information, but— Well, don't make this mistake when you write. We don't want to disappoint you, so don't disappoint us.

**FREE UPON REQUEST
A book that every Cow
Owner should have**

AT an expense of thousands of dollars we have gathered together in this book a great fund of valuable information covering very fully those questions which are of vital interest to every owner of cows.

The very best and highest authorities in the land have written a number of chapters especially prepared for this handbook upon a wide range of dairy subjects.

Dr. Coburn, Secretary of the Kansas Department of Agriculture, the great alfalfa expert, has written a chapter on ALFALFA.

Dr. Alexander, Professor of Veterinary Science, University of Wisconsin,

discusses DAIRY COW DISEASES AND THEIR PROPER TREATMENT.

Prof. Hugh G. Van Pelt, the Iowa State Dairy Expert, and one of the Editors of Kimball's Dairy Farmer, has contributed a most interesting discussion on PROPER DAIRY FEEDING AND BALANCED RATIONS.

Dr. Burkett, Editor of the American Agriculturist, tells about the MOST SUITABLE DAIRY CROPS, and other widely known authorities discuss SOIL FERTILITY, DAIRYING FOR PROFIT, FARM BUTTER MAKING, SILOS AND SILAGE, etc., etc.

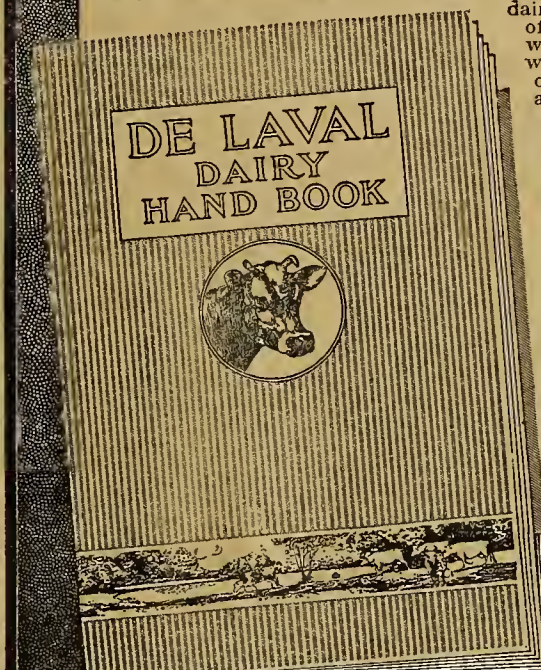
A series of photographs illustrating the desirable points in selecting a dairy cow are shown, and also photos of representative cows of the various well-known dairy breeds, together with statements from the secretaries of the various dairy cattle associations setting forth the claims for consideration of each breed.

The HANDBOOK also contains much general information such as tables of weights and measures, silo capacities, etc., that every dairyman at some time or other has occasion to refer to.

While the DE LAVAL DAIRY HANDBOOK covers the various phases of dairy farming most completely, it is in no wise technical, but is written in plain every-day language so that even the children can understand it.

You certainly ought to have this book. It's absolutely free. Just fill out the coupon and mail it to

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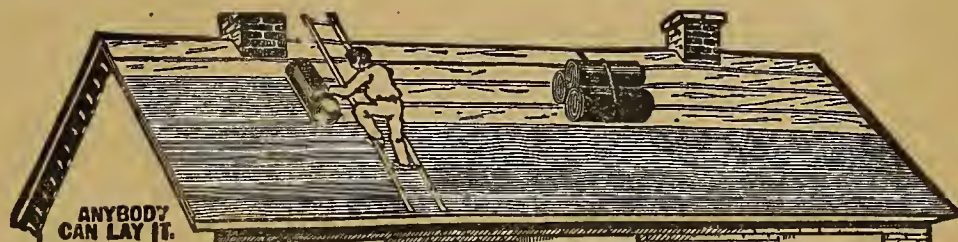


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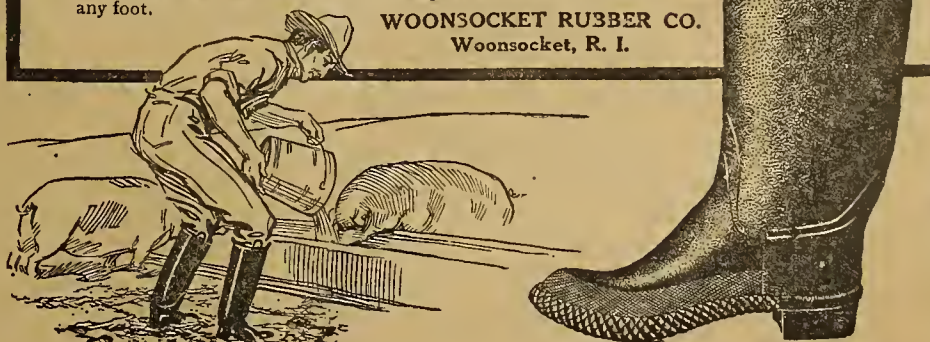
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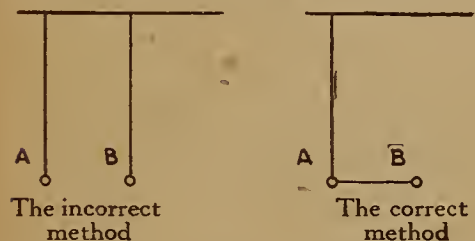


Farm Notes

Building the Telephone Line

THIS is the second of a series of articles on the rural telephone. Mr. Minhinick, who is writing them, is a man of very broad experience, having worked in several States where telephone construction is an important feature of the farm work and policy. EDITOR.

When the company is duly organized and officers elected, the first steps are the ordering of poles and supplies and a survey of the line. In this matter of purchasing supplies it will invariably be best to "put all the eggs in one basket" and give the entire order to one house. While it might appear that a small saving here and there could be effected by dividing the order, it will be found in practice that, by placing it with one house, better and prompter service will be given and material savings in freight charges made by reason of the fact that when one shipper has the entire order he can pack several items in one box and so reduce the gross weight. In building large plants, where the supply items alone run into several car-loads, I have always adopted this plan with much consequent saving of time, expense and temper. The survey will not take more time than is required to drive over the line with a good county map in hand. Its object is simply to ascertain the shortest possible route that will reach all the subscribers and so save all unnecessary poles and material. Thus if two subscribers live a mile away from the main line but only half a mile apart, as



shown in the sketch, it would be manifest folly to run two lines a mile each when one line of a mile and a half or less would serve equally as well. As a rule, the line should be run along the road and all construction across private property avoided. One can never tell when property may be sold, and the new owner might object to the line being across his place. If any such crossings are made, the written consent of the owner should be obtained and preferably paid for. On long and important toll lines it is usual to have an experienced engineer lay out the line and stake every pole and guy, but this is needless in the kind of construction we are considering. When the line is sketched in on the map, its construction may be safely left to the foreman who will do the work. At least one first-class lineman should be placed in charge, and even if his wages seem a little high he will save them, and more too, in the long run.

What to Do When Unloading Poles

In the former chapter I said that none but white-cedar poles should be used. This may be modified just a little to include red cedar and redwood if either of these can be procured locally at a saving. Red cedar makes a pole second only to white, and while it is knotty and apt to be crooked it lasts well and usually has a good big butt, which is a decided advantage. Sawed redwood, six by six or even six by four, makes a good pole second only to cedar, and while it does not last quite so long is recommended where it will make a saving of fifteen per cent. Pine, oak, elm or ash are not to be considered for a moment, as they, and in fact all woods other than cedar and redwood, will rot down in a very few years. You will remember that a pole does not rot either above or below the ground, but just at the ground, where it is alternately wet and dry. This you can easily verify for yourself by digging up an old pole or post. Some builders advocate a coat of creosote at the weak point, but it is doubtful if this is of any service unless the entire pole is treated, which is too expensive a proposition to be considered. The usual specifications for cedar poles are those known as the "Northwestern Cedarman's Association Specification" and will be found generally satisfactory. They provide for top diameters and length only, while the standard Bell specification gives the diameter at six feet from the butt as well. A twenty-five-foot pole six inches in top diameter should measure nine inches at six feet from the butt.

When the poles are received, it will be found that they are loaded in a rather peculiar manner. The longest flat car is about forty-two feet in the clear, and twenty and twenty-five foot poles are loaded, as a rule, on a thirty-five-foot car with all the butts pointing to the ends of the car and the tops overlapping—"tooth-picked" as the linemen call it. This is a manifest economy and doubles the capacity of the car. Longer poles are loaded in a single pile, butts and tops being alternated, so as to keep the deck of the load as nearly level as possible.

The car-stakes are always fastened by two sets of wires, one at about the middle of the height of the load, the other at the top. The first step in unloading is to cut these wires—the top row first. The stakes will always hold the load while the car is standing still, but it is a wise precaution to throw a rope around the middle of the load and tie its ends to the truss-rods below. The wires being cut, begin at the middle of the car and chop out the stakes on the side from which you will unload, both ways to the ends. Put up good, strong skids (the car-stakes will do) from the ground to the stake-sockets, notch them to fit into the sockets, and also wire them in tightly. When the end stakes are cut, about one third of the load will roll down the skids and should be immediately straightened up and rolled not less than thirty feet back to where they are to be piled. The balance of the load is then rolled off and added to the pile. Three men should easily unload and pile an average car in not to exceed two hours. It seems hardly necessary to say that each length should be piled separately.

Give Much Attention to the Work

The poles will be found free from bark or projecting knots, and on country work are never shaved. Any large knots should be trimmed close with a hand-ax. The poles must be roofed in every case and framed if cross-arms are to be used. For this purpose two pieces of two-by-four stuff are nailed together exactly as one end of a sawbuck is made and stiffened with a brace across the bottom; it should be about three feet high. The top of the pole is placed on this "horse" and the pole turned till it shows a perfectly straight line from the center of the top to a point three feet from the butt with the curve of the pole down. There is no such thing as a perfectly straight pole, and the idea is to have the bend with the line so that tops and butts will form a perfectly straight line when the poles are set. The "roof" is made by sawing from the center line of the top on each side to a point four and one-half inches down the side, making the top end of the pole wedge-shaped. This should be done even if brackets are to be used, so that rain will run off instead of lodging and rotting the top of the pole. The gain is cut two inches below the bottom of the roof, an eighth of an inch wider than the width of the arm and not more than half an inch deep at the deepest point. Too much attention cannot be paid to this part of the work, as the whole appearance of the line depends upon it. The gain is leveled by placing the framing-square on its face and lowering either edge till the square hangs at right angles to the center line of the pole. An eleven-sixteenths-inch hole is bored in the exact center of the gain to accommodate the bolt (five-eighths inch) which fastens the arm to the pole. The old practice was to attach the arm by two six or seven inch lag screws, but this is never seen in modern work; it is not half so strong and about twice as expensive as the single bolt. The arms are fitted before being sent out by attaching the braces, driving and nailing the pins and sawing off the projecting ends of the latter. Under no circumstances fail to nail the pins in. Remember that a man going up the pole will assume that the pins are properly fastened, and if they are not, a serious accident might result. A sixpenny wire nail is generally used.

In the meantime the holes will be dug. For twenty and twenty-five foot poles these should be three and one-half and four feet deep respectively and should be amply large in diameter—at least eight inches larger than the diameter of the largest butt, so as to give plenty of room for tamping. The twenty-foot poles, it should be said, are used for the main part of the line, the twenty-fives for road crossings and the thirties for railroad crossings and such other points as may require them. In ordinary work, which will, in all probability, never require more than two pairs of wires, the poles may be set thirty to the mile, which gives approximately sixty paces between the poles; if a heavy line is to be built, the number of poles per mile should be correspondingly increased. In staking the line, the foreman will set up a stake as far ahead as he can conveniently see and line in the holes by placing a man at each hole and sighting in the shovel-handles. This work must be carefully done by an experienced man, for nothing looks worse or does more to weaken the line than having poles out of alignment. For digging I would advise that you avoid all so-called "digging-tools" as you would a pestilence. In an experience of twenty years in all sorts of soil I have never found anything to take the place of the long-handled shovel and bar. For deep holes a spoon is needed, but not on toll-line or rural work. The hole, as has been said, must be not less than a foot in diameter and dug perfectly straight. A good man should find no difficulty in digging from

twenty-five to thirty holes a day in good soil—of course, rocky soil or extremely heavy clay will cut this down considerably. The poles will be hauled out and delivered one at each hole as fast as they are framed. The arms should be distributed at the same time, and with light poles may best be attached on the ground. For raising the pole pike-poles and a jenny will be required. The pikes should be twelve feet long, and for poles up to thirty feet four will be amply sufficient. The foreman, one man to the jenny and four pikemen will constitute the crew. To set the pole, bring its butt to the edge of the hole and lift it into the crotch of the jenny. Three or four lifts may be taken before applying the pikes. In fact, five men should set the twenties without using the jenny at all. The foreman puts a couple of bars or a four-foot plank in the hole and holds it in position for the pole to slide down when it is raised. He will give all orders as to lifting, etc. As soon as the pole is raised, the foreman goes to the hole ahead, and the four pikemen place themselves around the pole. The jenny man stands at the base of the pole and moves it from one side to the other as directed by the foreman, who "sights in" the butt to line with the poles already set. The pikemen then straighten the pole as the foreman directs so that its top lines with those behind it. In the meantime the jenny man goes across the road and lines the pole the other way. When both he and the foreman are satisfied, the pikes are firmly grounded, and the work of filling the hole begins. This has taken some time to describe, but as a matter of fact it is done very rapidly, two or three minutes sufficing for the entire operation. Two men will slowly shovel the dirt back into the hole and three will tamp the same solidly, so solidly that they will get back into the hole practically all the dirt that came out. Any remaining dirt is neatly banked around the foot of the pole, and the operation is complete. If the cross-arm has been already attached, the jenny man will see that it is at right angles to the line—if it has not been attached, he will watch the gain for the same purpose, ordering the pole turned as may be required. The final result of all this is that the poles are all in line, butts as well as tops, each pole stands exactly straight and with its cross-arm at exact right angles to the line. A word must be added as to corners and curves in the road. A short and simple direction and one that invariably gives the best results is "never make a curve in the line." Even if the road swings on a long curve, it is always possible to get at least three poles in a straight line and, if necessary, the last one must be guyed. Even if the poles are "raked" against the strain, they will soon pull over, and this means slack wire and consequent trouble. As a rule, corners should be turned as nearly at right angles as possible and on a single pole guyed both ways. As stated before, all road crossings will be made on twenty-five-foot poles and all railway crossings on thirties. Threshing-machines are apt to foul wires not over fifteen feet high, but will usually clear under twenty feet. The railroads nearly all require at least a twenty-two-foot clearance over their rails, as modern box cars are in some cases fifteen feet above the rail, and a six-foot brakeman needs at least this much room. It may not be out of place to add that the courts have held that no railway corporation can prevent a crossing of their right of way if reasonable care of their interests and needs is taken. In a subsequent installment another method of crossing will be indicated. H. J. MINHINICK.

Life is a school, but many of us just keep up the habit of playing truant as long as we live.

Even from cutworms one might learn the lesson of making the most of an opportunity.

Just a Few Acres

But Money is Being Made and the Farm Value is Increasing

ONE of the most interesting farms in Ohio is a twenty-five-acre tract of land near Arcanum, in Darke County, that is owned by Mr. Allen Geer. Of recent years the doctrine of "the little farm well tilled" has been widely preached but rarely practiced. This practical farm which is worked by Mr. Geer is one of the few exceptions where the possibility has been matured into a profitable actuality by the intensive pursuit of modern methods and up-to-date management. The farm is divided into five-acre plots on which a four-year rotation is followed: clover, corn, tobacco and wheat constituting the crops that are raised. The land is of a rolling nature, while the soil is a rich, black loam which is never surfeited with water, due to six hundred and fifty rods of tile laid at a maximum depth of thirty inches, which furnish adequate means for thorough underdrainage.

The most striking features about the system of management which Mr. Geer follows are that he farms according to a method which includes the happy blending of practical and scientific agriculture; furthermore, he farms intensively, as he appreciates the necessity of playing square with the soil. He not only maintains the supplies of plant-food in balance in the soil, but he

also annually increases them by the generous application of well-conserved stable manure. In the five years which he has owned his twenty-five-acre farm he has distributed five thousand tons of manure over the fields. A large portion of this fertilizer he secured in the neighboring town for the hauling of it, while the rest of the manure cost him from ten to fifteen cents a load.

As a supplement to this fertilizer, Mr. Geer yearly turns under the clover crop, which adds plenty of nitrogen and humus to the soil. To show that his efforts in replenishing the fertility of his soil have not been in vain, it is only necessary to mention that last year this progressive countryman harvested four hundred and fifty bushels of corn of fine quality from his five-acre cornfield, while for the past three years his wheat has never gone below thirty-nine bushels to the acre. His most profitable cash crop has been tobacco; his 1911 return from four and three-quarters acres amounted to \$707.40. His tobacco usually averages around thirteen hundred and fifty pounds to the acre.

This far-sighted Ohian selects his seed-corn in the fall according to the methods advocated by his State agricultural college. He eliminates the inferior specimens and retains only the ears that correspond to the ideal which he has in mind. He efficiently cures these ears in a warm, well-ventilated attic, using the corn-tree composed of an upright, into which are fastened finishing-nails so that the ears of corn can be stuck by the butts on these nails and held in a position where the air can freely circulate around them. In the early spring Mr. Geer subjects his selected corn to thorough germination tests, and only the fit, the ears which survive these trials and indicate maximum powers of germination, are used in seeding the next year's corn-field.

Even though corn production is not the major operation of this small farm, nevertheless many of our profligate corn-belt farmers can profitably pattern their systems of soil management and crop rotation, as well as general farm activities, after this money-making Buckeye State project. It is one of the most notable demonstrations in the Middle West of what can be accomplished on a small acreage. And the best part of the proposition is that the Geer place is a regular Klondike nugget in its ability to draw money. During the last five years its owner, in addition to gaining an ample livelihood for himself and his family from the farm, has annually disposed of more than \$900 worth of produce that was raised on this little tract.

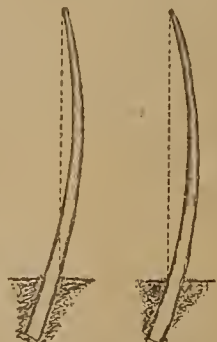
Using Silage for Hogs and Beef Cattle

Another Ohio farm recently demonstrated the profit which accrues to the countryman who conserves all the stable manure and uses it as fertilizer on his corn and small grain-fields. G. L. Hyslop, of Henry County, is the countryman referred to who last year raised twenty tons of corn-silage to the acre as the result of the efficient utilization of barnyard manure. Formerly he utilized a manure-shed, in which he stored all the fertilizer, wherein it was completely protected from injurious weathering and leaching until such time as he was able to spread it over the fields. Mr. Hyslop uses his silage to fatten hogs and beef-cattle.

Recently he has completed the erection of a \$6,000 barn that is ninety by ninety-two feet in dimension and is equipped with long feeding-sheds which extend along two sides of the barn, being provided with foundation walls and floors of concrete. These sheds are so constructed that manure to the depth of two and one-half feet can accumulate in them, being packed and trampled by the animals. The manure is under shelter, and by using plenty of bedding the odors are controlled and the stock are protected against extreme filthiness. Then when the owner has spare time, he can drive into the sheds with his manure-spreader or farm-wagon and haul the valuable fertilizer back to the land. The barn has a capacity for one hundred and twenty-eight head of cattle, forty hogs and seven horses, while four silos in the center of the structure accommodate six hundred and forty tons of silage. Last year the corn crop of thirty-two acres filled these silos with succulent roughage.

These results in bumper corn production on farms where corn was raised more as a side-line than as a major crop should set the corn-grower to thinking. Any corn-raiser in the country who is at all favored by local conditions can duplicate and perhaps improve on these records if he will only practice common-sense, dollar-wise methods in the conservation and intensive utilization of barnyard manure. Fortunately, there is seldom a deficit in the supply of manure available for fertilizing purposes. As a usual thing, the supply is more in evidence than the demand, with the result that many residents of small cities and towns have to pay from twenty-five to fifty cents a load to have the refuse removed. Of course, there is the danger of contaminating the home fields with noxious weeds introduced in the manure from livery-stables and town barns, but the farmer who is wideawake can control this difficulty by allowing it to stand in a pile for a year and by intensive early cultivation subsequent to deep plowing in the preparation of the seed-bed.

GEORGE H. DACY.



Incorrect Correct method method

Crops and Soils

Do You Know Beans?

Here May Be an Idea for an Untried Leguminous Crop for Regions Adapted to It

LIVING parallel with the north shore of Lake Erie, in the counties of Kent and Elgin, is the bean district of Ontario, Canada. This section comprises about 40,000 acres and produces on an average 750,000 bushels annually. Within this limited area over one million dollars' worth of beans have for many years been exported to the cities, mines and lumber camps of Canada, as well as to foreign countries. So important has this crop become as a source of revenue that the farmers regard it as of more value than the wheat, oats and barley crops combined, and to it may be attributed the making of this section into one of the most wealthy, as well as one of the most progressive, in the province.

Early in the past century a French settlement was established in North Kent and made bean-growing in a small way a part of their farm operations. While no shipping to outside points was attempted, so far as there is any record much was done to prove the adaptability of the soil and climate, thus laying the foundation of the industry as it exists to-day. In 1856 Mr. Seger Handy moved into the district from New York, and having had experience in bean-growing, seized the opportunity of developing this new field in a commercial way. His first shipment was made to the United States, there being no market at that time in Canada. Several years later, as the result of the American Civil War, there sprang up a large demand for beans, and in this way the young industry got its first real stimulus. Until recently this was our only foreign market, and on it we depended to take practically all our surplus; a duty of forty-five cents a bushel on Canadian beans now places that market beyond our reach.

Topographically, this section is almost ideal for growing beans. The soil varies from a gravelly and sandy nature to a rich, black loam, resting upon a fairly open clay subsoil. The contour of the land is slightly rolling, thus affording excellent natural drainage. This, however, is in all parts supplemented with tile drains in the hollows and natural watercourses. While it is thus protected against a wet season, it is also protected against a dry one. Being in close proximity to the water, it is subject to very heavy dews which are deposited from the moisture-laden air coming from the lakes. Moreover, this nearness to the lake prevents extremes of temperature, so that it seldom, if ever, happens that a crop is injured by frost either in spring or fall.

Those unfamiliar with the growing of beans, commercially, are apt to think that a great deal of labor is involved. Few hundred-acre farms in the bean district, however, have less than twenty-five acres each year, and where from fifty to seventy-five acres are grown annually, as is the case on many farms, there is no more difficulty than in handling any other grain crop. The land is thoroughly cultivated in the spring, having been plowed the previous fall to form a firm yet mellow seed-bed and to kill as many weeds as possible before the crop is sown. Any time from May 24th to June 10th the seed is sown with an ordinary grain-drill or a regular bean-planter, using about three pecks to the acre, in drills twenty-seven inches apart.

The main feature in successful bean-growing is clean cultivation. On the best-managed farms hand hoeing is seldom resorted to. Beginning by having the land well prepared before seeding, the crop is harrowed before and after it comes up, to break the crust and to destroy any small weeds that may have started. As soon as the rows can be seen, the two-row horse cultivators are kept going as often as possible until the crop comes in blossom, after which they are stopped entirely. The appearance of many thirty or forty acre bean-fields about the middle of July, the plants completely covering the ground and not a weed to be seen, is an object-lesson well worthy of remembering.

The crop is generally ready for harvesting in from eighty to one hundred days after planting. For this purpose a two-horse bean-puller is employed. This machine is an attachment which can be put on any ordinary cultivator. It has two large knives set in a V shape, which cut the plants off below the ground and draw two rows into one. After the beans are pulled, a side-delivery rake is used, and eight rows are thrown into one windrow. They are then left on the ground to dry for about a week, and this is the most critical time in the handling of the crop. Turning every few days to hasten the drying is necessary. If this is done when the straw is a little damp, the work is greatly facilitated by using the rake, which will turn satisfactorily twenty to twenty-five acres a day without danger of shelling. The object in curing beans is to keep the bunches or windrows from settling on the ground, which, by excluding

the air, causes the grain to be blackened and spoiled. In hauling, the fork is generally used to load the beans. A few growers are using the hay-loader, but the crop must be very dry when handled, and this method shells considerable and is not generally employed.

The thrashing is done with regular bean-mills made for the purpose. Some years ago the ordinary grain-separator was the only machine available. This did not give good satisfaction, owing to the fact that a great many beans were broken and thus rendered unsalable. Since adopting the bean-mill, the old practice of hand-picking on the farms has gone out entirely, the clay and other dirt being mostly removed in the course of thrashing, leaving the beans fit for market.

When brought into the elevator, the beans are run through a grader. A small sample of ten or fifteen pounds is then taken and hand-picked, nothing but clean, unspotted, whole beans being allowed to pass. The refuse picked out is weighed, and for every pound of such material five cents a bushel is deducted from the market price. For instance, if beans are worth \$1.40 a bushel, and a sample picks four pounds to the bushel, the farmer will receive \$1.20 for his beans. Usually they are again cleaned by machinery, after which they are supposed to pick less than two pounds, and are sold in this condition as "prime beans" to the Ontario, Quebec and western trade. The European and maritime trade demand all hand-picked beans. All hand-picking is done by women, who are generally paid three cents a pound for the dirt they pick out. They are arranged at a long table, the beans passing before them on a canvas.

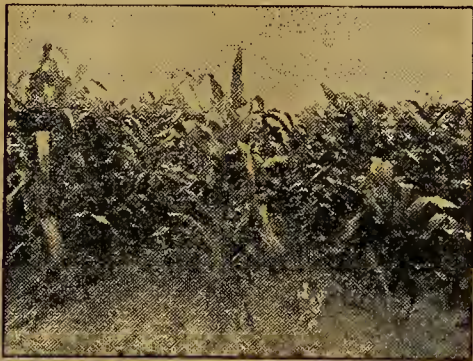
At present France is our largest foreign market, importing from us alone an average of 85,000 bushels a year. Great Britain and the West Indies also take a large quantity. Each market demands a particular variety; the small, white bean being the favorite in France and the home market. Great Britain calls for a somewhat larger bean, while the West Indies prefer the colored kinds, such as the Red Kidneys and Marrowfats. All things considered, bean-growing here is a profitable business. The soil and climate are so well adapted, the crop is so free from insects and diseases, and the farmers have so well learned the art of handling it, that a paying return is almost a certainty.

J. HUGH MCKENNEY.

Two-Hundred-Bushel Corn

WHEN, in November, 1909, the result was announced of the notable contest in corn-growing in Wake County, North Carolina, and that James F. Botts, a young farmer, had produced 227 bushels on a measured acre, he was hailed as a man who had done much for agriculture.

In the past three years North Carolina's corn crop has doubled. Botts shipped corn to every State in the Union. With some of these seeds Jerry Moore, a South Carolina lad, won in 1910, and last year another lad, named Parker, of Bertie County, North Carolina, got a yield of 235 bushels, or 198½, crib-dried, three months after the harvesting. Parker now holds the record.



This year's corn, two months after planting

Thousands of North Carolina men and boys are competitors in this year's contests. Botts is again in the race. Last year on forty acres he got an average of 138 bushels. He intended to dynamite his land last November, but did not do so until the middle of March. He used eight-ounce charges, twenty-five per cent. strength, planted forty-two inches deep and twelve feet apart. This thoroughly pulverized the ground to a depth of four feet. His corn, of his one type, Botts' Prolific, was planted April 9th. A photograph made of this test acre exactly sixty days later shows remarkable growth. On the sixth day of July this corn was ten feet high, and was silking and tasseling, giving wonderful promise of a crop. It is planted in rows four and one-half feet apart, and from eight to ten inches in the drill, whereas in 1909 the rows were only forty-two inches apart. The number of stalks was then estimated at 19,000, this year it is about 13,000. It remains to be seen how the yields will compare, as this season the stalks are larger and better eared than they were three years ago. For three weeks up to July 6th the weather was quite dry, but this corn, then planted, did not show any lack of moisture and made a far finer showing than thirty acres in a field adjoining.

The interest in this test experiment is great, and farmers, both men and boys, are

going to see the corn from far and near. State officials and officers of the Agricultural Department are this year to measure the crop and verify the acre on which it is grown.

FRED A. OLDS.

There are lessons to be learned from fools, but it takes wisdom to get them.

Capital is the keel that steadies the financial boat. The greater the risk, the steadier must be the boat.

The poultry-keeper who works for uniformity in the size, shape and color of the eggs that he markets to private customers is sure to be well repaid for his labors.

All ewes, and every other kind of young breeding stock, should be fed and cared for with a view to developing their breeding qualities, rather than putting on great amounts of fat or flesh.

The fact that one acre of silage will feed three cows for six months, while it will take six acres of the old-fashioned corn-fodder to feed the same number that long, ought to be convincing argument in favor of the silo.

If our farmers would make a combined effort to market nothing but strictly fresh, clean eggs, the price for these products would remain higher during the period of hot weather, but just as long as some persist in selling soiled and rotten eggs, all of us will have to suffer for it by accepting less for our eggs.

A Safe-Guard

DURING the winter farmers are often compelled to leave valuable robes openly exposed in a buggy, where there is much danger of their being stolen. To mitigate this danger, I arranged my buggy as follows:

The space beneath the seat was enclosed in the rear by firmly screwing a half-inch board, cut to exactly fit the place, to the rear uprights at the side of the bed supporting the seat. A removable door was made to enclose the front of the space by using half-inch boards and modeling after the flexible rear endgate of the ordinary farm-wagon bed. A strong staple in the hinged board, passing through a slot in the rigid one, formed the latch, which was secured by a padlock. A bit of strap iron at each side of the bed, reaching from the sill to the lower framework of the seat, formed slots by which the door was held in place.

The advantage of a removable door is that it need be carried only when needed.

P. C. GROSE.



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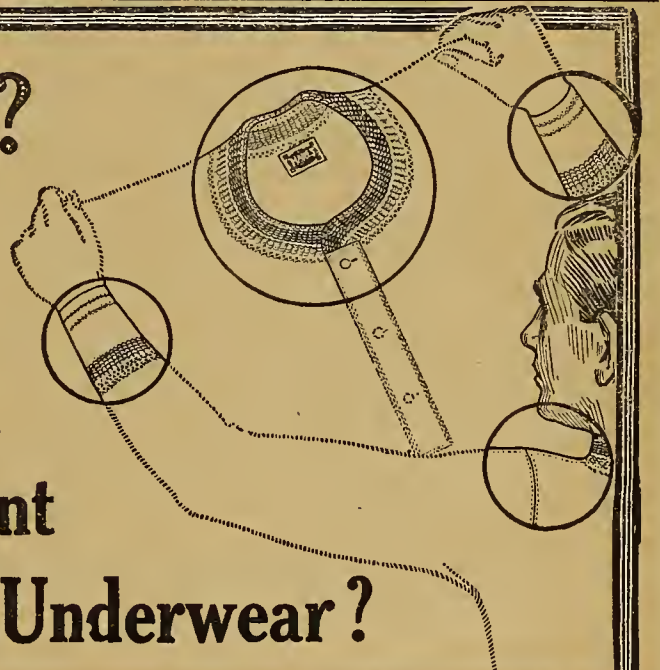
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ELASTIC KNIT UNDERWEAR

Intensive Boy-Culture

I LIVE in a small town near Detroit, Michigan. This town, like nearly all towns of similar size, is without an adequate supply of fresh vegetables. This fact does not bother me much, as I have a small garden (fifty feet square, to be exact) in the rear of my cottage, from which I have been able to supply my table throughout the summer.

But I also have a small boy who, like all little boys, is continually asking for pennies. He seemed to have no conception of their real value. This, of course, was a bad state of affairs, and I decided to find some way for my boy to earn money.

My former experience with the grocers' meager supply of stale greens immediately suggested the sale of fresh vegetables. The size of my garden was the only objection to this plan. This objection was overcome by a suggestion received through an article published in the FARM AND FIRESIDE. I therefore determined to try interplanting, with the following result:

The west side of my garden for about five feet is shaded by maple-trees which are planted in the street. Things, I have found, do not grow there in mid-summer. This strip I planted early to radishes, lettuce and onion-sets. I next planted a row, each, of salsify and parsnips, planting radishes thinly in the same rows. These vegetables start slowly, and the radishes mark the rows, thus making cultivation easy. Radishes are ready for sale before they do any damage to the younger plants.

Next comes corn, with rows three and one-half feet apart and hills three feet apart in the row. Between the hills of corn I planted more radishes. Between the rows I planted spinach and beets, leaving just room to run the hand cultivator between each row.

Then comes two rows of tomato-plants, with rows four feet apart and plants five feet apart in the row. Tomatoes require plenty of room if they yield well, but they are interplanted the same way as the corn.

The rest of the space is devoted to string-beans and peas, with a row of pole Lima beans growing next to a high board fence on the east. This fence acts as a support to the beans.

It is now the twenty-first of June. We have had all the early vegetables we wished for the table, my son has sold the balance (about eight dollars' worth), and the later vegetables look fine.

Next year I shall require the boy to do at least a part of the work, because the sales have come so easy this year that he has not learned that it is really hard to earn a dollar.

A. J. RICKEL.

Storing Fruit Properly

[CONTINUED FROM PAGE 5]

room. When the same fruit stands in the rooms for a long time, it may not be necessary to ice more than once a week even in fairly warm weather. Where fruit is constantly being brought in and taken out again for shipment, it will usually be necessary to ice daily.

The great advantages of this system as thus far developed here at the college are the cheapness with which it can be run, requiring no high-priced engineers; the fact that any one of the rooms may be run without the others, thereby reducing the cost proportionately; the fact that there is no costly machinery to get out of order and give large repair bills, and most of all the fact that it works satisfactorily, that it "delivers the goods." Of course, it is especially adapted to those sections where natural ice may be secured.

Now I realize, of course, that our college building is not altogether adapted to the requirements of a regular commercial storage-house. Many of its features are for experimental or demonstration work and would therefore not be needed in a commercial house. But by relatively slight changes it could be adapted to commercial use, and these changes would all be such as to greatly reduce the cost. It seems to me that the thing to do would be to retain our basement arrangement to be used for the storage of the winter varieties of apples. It is understood, of course, that the temperature in these basement rooms is controlled by the very perfect insulation of the walls and by allowing cold air to come in through the windows when the outside air is lower in temperature than that of the rooms. By watching the matter carefully and opening the windows in cool nights and closing them promptly when the outside temperature rises, it is surprising how quickly the temperature may be forced down to a reasonably low point. One change in our plan, it has seemed to me, might be very desirable, and that is to connect one or more of these basement rooms by an air-shaft with one of the refrigerated rooms above, and then, by a system of fans, force the cold air down into the basement room. This would enable one to force down the temperature in these rooms before the cold nights arrived.

On the main floor very decided changes would have to be made. There would need to be a good-sized packing-room of course, but this would not need to be as large as our classroom and might be so arranged as to be used in part for storage when packing work was not actively going on. Aside from this packing-room, the balance of this entire

Garden and Orchard

floor might be made into two or three large refrigerated storage-rooms with a total capacity of two thousand five hundred to three thousand barrels of apples. These changes would reduce tremendously the cost, which was made unusually high with us by the large number of small rooms, most of them with separate refrigerating systems. Aside from these changes and perhaps a few other minor ones, I believe that the building might be copied throughout for commercial purposes.

As to cost, that would, of course, vary largely with different localities. I have asked the head of the company which built our house for an estimate per barrel, and he writes as follows: "Depending on capacity, the cost per barrel of refrigerated space would be ordinarily from \$2 to \$5. Under favorable conditions and for a plant mostly for winter varieties, the cost may be as low as \$1.50 per barrel, and it is seldom that the cost would run as high as \$5 per barrel, except in very small plants built for special purposes."

The ideal storage for fruits is one which combines the following:

1st. A relatively low temperature, the precise degree varying with the fruit.

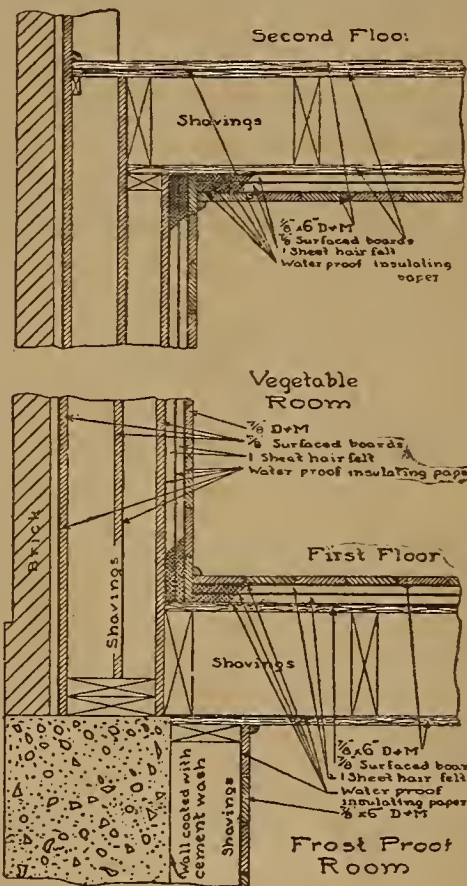
2d. A constant temperature—fluctuations being always detrimental and the more objectionable as they are rapid or extreme.

3d. A reasonably moist atmosphere, yet not too moist. Moisture is extremely important to fruits like russet apples, which lose moisture easily.

4th. Convenience in getting the fruit in and out of storage.

5th. Reasonableness of cost per barrel or box capacity. In estimating capacity, ten cubic feet is usually allowed per barrel and two and one-half cubic feet per bushel box. These amounts allow for alleyways for getting at the various lots in storage.

The writer believes emphatically in the value of good storage and especially local



storage. When possible, that is, when it is an orchard community, the storage ought to be a cooperative one. In the case of large or isolated orchardists, the individual plant will have to be resorted to. But in any event get the storage! It will not pay large dividends every season. In some seasons it will not pay at all. But one year with another it will pay, and pay well. The tendency of prices in pears and apples is almost always upward as the season advances. And as to peaches, we have all seen season after season when the ability on the part of any large grower to hold back the crop for even a week would have paid the interest on the entire cost of a storage-plant.

Whenever the hand works so hard that the brain cannot think, the human machine becomes inefficient.

Late in the season is often a good time to buy next year's machinery. Dealers who are anxious to clean up this year's stock will often sell at from twenty to twenty-five per cent. or more below the season's price.

According to Secretary Wilson, every day in the crop-growing season is worth \$50,000,000 to the farmers of the United States. This wealth, however, represents the work of nature as well as of men. The big problem for the farmer is to so arrange his affairs that he can keep nature working for him all the time.

Some Insect Helpers

IT IS a sign of an up-to-date farmer to know his friends by sight. And because some insects are nuisances, people have come to believe that all insects are likewise. This is a great mistake; there are thousands of insects whose life activities are given over to helping mankind, and very little credit do they get for it from the ignorant. Among these beneficent insects are the ladybirds; these have done such a good work that finally they are being generally recognized as friends. The case of the ladybird called the *Vedalia* was so widely known that it has done much to bring about a popular understanding of the work of these insects. In 1888 it seemed as if the orange-growing industry in California was to be destroyed through the attacks of the fluted scale-insect, which had been introduced from Australia on nursery stock. The government sent an entomologist to Australia to discover what enemies this scale-insect had in that country that kept it in check. As a result of his studies, the entomologist



The larva, the pupa-skin and the adult of the lady-bird

brought back some little red and black ladybird beetles. These were cared for and colonized on the trees, and after two or three years became thoroughly established and finally practically put an end to the fluted scale, thus saving California millions of dollars annually.

We have ladybirds of our own here in the East doing their good work for us in every orchard and garden. They are all of them small beetles, and each one looks more or less like a pill split in half with legs attached to the flat side. Their colors are usually brick-red and black, although in some cases they are ocher-yellow instead of red. They are fond of polka-dot ornamentation, and may be red with black dots or black with red dots, and one common one is orange-red with no dots at all. The great work that the ladybirds do for us in the East is to free our cultivated plants from plant-lice and scale-insects. Although all the ladybirds are provided with active little legs, yet they all have wings folded under their wing-covers, and are very good fliers. If you disturb one of these little creatures, it will fold up its legs and drop as if dead, thus playing 'possum in a comical manner.

All of the ladybirds have interesting habits; in general, their history is as follows: The mother beetle in the spring lays her eggs, usually yellow in color, here and there on plants. From these eggs hatch strange-looking little creatures. They are neither roly-poly nor shining like their mother, but are long, velvety insects with six stiff short legs. They are usually black, spotted with orange or yellow; there are six warts on each segment, which make the creature's back look quite rough. The absorbing business of each of these young insects is to crawl about on plants and feed upon aphids and scale-insects, and it takes a great many of these to make a breakfast for the rapacious young beetle.

The larva as it feeds and grows is obliged to shed its skin several times in order to get more room for new growth; and finally, after it has killed and eaten probably hundreds of the plant-lice, it finds a secluded spot beneath a leaf and hangs itself up head downward. Soon its skin splits open, and now the creature looks very differently than before. It is legless and half-globular in form and more or less spotted. After a time this skin bursts open and out comes a full-grown ladybird beetle, ready to go on with the good work.

Since the beetles must spend the winter in safety, they seek warm nooks and corners, and often come into our houses, and here they meet with hard treatment from foolish women-folk, who mistake them sometimes for an unwelcome bedfellow. But the ladybird is very different in appearance from the bedbug, for it is rounded and shining, while the bedbug is flat and "has no wings at all." The ladybird is sometimes taken for the carpet-beetle, but this little rascal is smaller and is not shining. It has black, dull wing-covers spotted with white and with two scarlet dots, while the ladybirds are never scarlet.

It is the plain duty of us all to get to know insects by sight in their adult and larval forms, so that we may know our friends when we see them.

ANNA B. COMSTOCK.

What Varieties of Fruit Shall We Set?

ONE of the most important questions to decide in the growing of fruit is the selection of varieties. The problem of what to set is difficult because of two things: the effect of environment on the variety and because of the large number of varieties from which to make a selection.

By environment is meant any of the surrounding influences of climate, soil or culture which affect in any way the development of the plant or of the fruit. Conditions must be favorable, or the variety will not do as well as in some other locality in which the requirements are more favorable. A variety may be most profitable in one place, yet be worthless in some other section.

The plants themselves may be first class in every way; soil conditions may be perfect in regard to physical condition, drainage, amount of humus, quantity and character of plant-food; the setting of the plants and the following cultural treatment may be perfect; insects and fungous diseases may be kept in check; yet after all these things have been well done the result may be a disastrous failure because of the selection of the wrong variety—unsuited to the climatic conditions of temperature or length of the growing season.

Each season sees one or more new varieties offered for sale, and the long lists of kinds described in nurserymen's catalogues, experiment station publications and elsewhere make the proper selection most difficult. To this confusion is added the fact that the final selection also involves a study of the purpose for which grown, whether for home use, local, special or general market.

The horticultural department of the State Experiment Station at Geneva, New York, is engaged in the study of many problems along fruit lines, one of which is the study of the behavior of varieties when grown under uniform climatic and soil conditions. For years many of the newer varieties have been secured directly from the originator or introducer and have been planted in the variety orchards at the station, careful records being kept each year in regard to their development. While special attention is given to varieties originating within the State or in adjoining States, because other things being equal, the new varieties which have originated in the same general latitude and climatic conditions of New York State are usually more likely to be of value in that State, yet varieties are received from Maine to California and are also imported from Europe.

Many Varieties Discovered by Chance

The table which follows gives a list of the number of varieties of the different fruits in the station collection at the present time. The numbers change each year, new ones being added, and some of the worthless kinds being discarded. In addition, the number of seedling plants under observation at the present time, which have arisen during a study of plant-breeding problems, is also given.

FRUITS AT EXPERIMENT STATION, GENEVA, NEW YORK		
KIND	NO. OF VARIETIES	NO. OF SEEDLINGS
Apples	513	1,221
Apricots	50	
Blackberries	32	
Cherries	95	
Currants	30	
Grapes	282	4,000
Gooseberries	62	
Nectarines	33	
Plums	261	106
Peaches	355	4
Pears	121	1,940
Quinces	10	32
Raspberries	54	1,000
Strawberries	106	662
Total	2,004	8,965

A study of the history of the different varieties shows some facts of interest concerning their origin. By far the greatest number of the well-known commercial varieties grown to-day have been discovered growing as chance seedlings, and but very few have been originated by a systematic crossing of the blossoms of known parents.

The varieties selected for commercial purposes should be adapted, as already indicated, to the locality in which grown and to the purpose for which grown. The surest and safest way of determining their value for any locality is by actual trial under the conditions in that locality. This, however, is a slow method, requiring several years with tree-fruits. Observations will at times give the desired information. If certain varieties are growing best in a locality, it is usually a safe proposition to plant most largely of those same varieties which by long years of trial have shown conclusively their value, especially so if the new orchard is to be located in the immediate neighborhood and under apparently similar conditions. It is unwise to plant extensively for commercial purposes any of the new and untried varieties until their value for the locality has been determined in some way.

O. M. TAYLOR.

GARDENING

BY T. GREINER

Rhubarb for Fall Use

IT IS only a young and vigorous rhubarb-plant and one which has not been cropped excessively during the earlier part of the season which can be expected to give nice fat and brittle stalks in the fall. There is often a limited demand for rhubarb in our markets at that time, unless fruits are very plentiful. The stalks are pulled up, of course, and usually separate easily and naturally from the root crown. Avoid breaking them. Rhubarb is perfectly hardy and can stand northern winters better than hot southern summers.

Old Asparagus-Stalks

So long as the asparagus-plant is in active growth, the root continues to develop and gather up strength for next season's yield. When the tops are dying down or getting yellow, active growth ceases, and the tops may be cut, and should be removed from the land before the seeds have a chance to drop off and grow up as weeds.

Green Onions for Spring

The Egyptian Tree, or Winter, onion is grown by planting top sets or "button" onions in August or September, or soon after they have ripened. It is hardy as an oak and gives the earliest green onions, but it is not of particularly high quality even at its best. This is the onion regularly and freely found in our markets in early spring. From Maryland south the Potato onion is generally grown as a green onion, and bulbs or bulbets should be planted in the fall. The rows may be made from twelve to sixteen inches apart, and the bulbs, or sets, planted several inches apart in the rows. The Egyptian, or Winter, onion might better be planted a little off one side, where it can be left to spread and yield green onions every spring for some years.

The Elusive Curculio

A Canadian reader complains of losses of plum crop caused by the curculio. Has sprayed three times this year, yet lost the crop again. Where plums are few, either in the trees or because there are but few trees, and curculios numerous, this insect is hard to control. With flocks of chickens confined in a plum-orchard, especially if trees are jarred every morning while curculios are present, the job is comparatively easy. The chickens or chicks will eat the beetles as they fall. "Jarring" the trees is the surest way of fighting these insects anyway, but without the chickens sheets or regular curculio-catching devices must be spread under the trees, and the beetles gathered up and destroyed. How to jar? In early morning, while beetles are benumbed with cold, spread the sheet or sheets, or device, hold a block of wood against body of tree, or, if large, against limb after limb, and strike it hard blows with a heavy hammer. Gather up the fallen foe. This is a long-drawn-out battle, however. It should be begun when trees are in bloom and continued, daily if possible, for a number of weeks. Some growers have had good success by spraying the trees with arsenate of lead, at least six pounds to one hundred gallons of water or other spray liquid, and making the first application at once after blooming, and repeating several times at intervals of about ten days. Where trees and plums are many, and curculios comparatively few, the latter may only thin the fruit to the advantage of the grower.

For Fall Planting

Too late now for us here to plant many vegetables in the expectation of growing a crop before winter, with the exception, perhaps, of lettuce, and we also need some plants of that vegetable for planting out on the greenhouse bench in October. I use Grand Rapids mostly, also some Big Boston. Further south flat turnips, winter radishes, etc., may yet be planted.

Cabbages for Winter Use

Of the various methods of keeping a family supply of cabbages for use during winter, the best probably is storage in a regular root-cellar, such as ought to be found on the premises of every rural home, yet is found on very few. Such cellar might be dug in a bank or hillside near the house, or, if on the level, dug about two feet or more below the surrounding surface, making a strong framework for the roof and covering this with straw, corn-stalks, etc., and a layer of soil heavy enough to exclude frost. Face toward south, with cellar-door in front. Provide ventilation, etc. Use this for storing potatoes, apples, beets, carrots, turnips, winter radishes, etc., and also the cabbages cut from the stem. An ordinary house cellar is seldom a very good place for keeping cabbages; but if no other place is available, it may have to answer. In that case leave the stump on the cabbage, and

wrap several thicknesses of newspaper around the head to protect it from wilting, etc. Then hang the cabbage up on the wall or other place. Or you may place an empty barrel in a well-drained spot near the house, top even with the surface, fill this with cabbages cut from the stump, cover with straw, and keep barrel closed enough to shed rain and keep out frost. Accessible at all times. Delay this storage, however, until the beginning of real winter, leaving the cabbages out in a protected spot, standing on their heads, until that time.

What About Celery?

The variety of celery known as "celeriace," or root celery (knob celery), is grown for its round, fleshy root, and is popular among some of the people of foreign extraction. If seed obtained from any of our large seed-houses has failed to grow, the fault is most likely in the management. The seed is small, like other celery-seed, and requires the same conditions for germination. It usually takes ten days to two weeks after sowing, even under most favorable conditions, for the tiny seedlings to show above ground. If the soil is not kept moist on top right along, or allowed to bake, the weak little seedlings may not be able to break through the crust and will perish. I start mine in flats under glass in March, usually. If to be started in open ground, seed should be sown as early in spring as a nice mellow seed-bed can be prepared. The surface of the ground may be covered with burlap or other fabric (single layer), or even paper, until the young plants begin to break ground when the covering must be promptly removed. After that keep cultivated and free from weeds until the plants are large enough for transplanting. Then set them six inches apart in the row, the rows perhaps two or three feet apart.

A Gooseberry Enemy

For the gooseberry fruit-worm which bores into the half-ripe berry and often spoils a good portion of the fruit on gooseberry-bushes, the most sensible thing to do is to gather and destroy all the affected berries and to practise absolutely clean cultivation. The idea is to give the worm no chance to multiply. Spraying with a sulphur-and-whale-oil-soap wash is recommended as a repellent, but the ordinary grower of this fruit hardly ever feels inclined to take the pains of making it. The recipe is as follows: Add one-third pound of sulphur to one and one-half gallons of boiling water, and let boil fifteen minutes. Then add one pound of whale-oil soap, and boil five minutes longer. Mix one pound of the compound to a gallon of water, and use as a spray at a temperature of one hundred and thirty degrees Fahrenheit. Good likewise for the currant-borer.

White-Throated Sparrow

THE white-throats do not breed in Ohio, but for several weeks in the spring and fall they are with us in such large numbers that the wayside thickets and brush-grown pasture-lots are fairly alive with them; then, too, a few individuals are always found among the small flocks of juncos and tree-sparrows, in whose company they remain until the approach of winter, when they travel farther south.

It is always a pleasure for me to pass through some thicket on a late October afternoon as the sun is sinking in the west, and when darkness approaches at a rapid pace, and listen to the white-throats as they



settle among the briars for their night's rest. Like a lot of fussy children, they cannot quiet down, and so they move about and keep up a constant twitter until darkness overtakes them, and then each one remains where he is.

Like all of the sparrow family, these birds are seed-eaters. They arrive in the fall when weed-seeds cover the ground, and the amount of these obnoxious plant-seeds that are thus destroyed would easily make each bird worth its weight in gold. But, because they are looked upon as "sparrows," in remembrance of their pestiferous English cousin, the protection that is theirs by right is denied them, and thus all through the Southland they are slaughtered for the trivial amount of flesh on their breasts. It is high time the farmers both of the North and of the South are doing something for the protection of their "little friends in feathers." H. W. WEISGERBER.

Growing Plants Under Muslin Cover

An Oregon reader asks for information on the kind of plant-cover used for screening cabbage and other seedling plants and radishes as a protection against the maggot. This plan has now really passed the experimental stage. Cabbage-plants and radishes do quite well under the muslin screen, and the flea-beetles and maggots cannot get at them. Make the beds in a fertile piece of ground, using fertilizers freely. Sow seed moderately thick in rows six or eight inches apart, and stake out the exact spot so the frame can be put up even before the plants are up. The boards for the frame may be six to eight inches wide, and galvanized wires may be fastened across the edges of the framework as support for the muslin. The latter should be rather coarse, having from twenty to thirty threads to the inch. If ground is not quite even, bank up soil against the boards so as to leave no chance for flea-beetle or fly (parent of the maggot) to get under the frame from beneath.

Make your preparations, all ye whose plant-beds or radish-patches have suffered from maggot attacks, and grow the plants and radishes under the muslin screen next season. It will pay you many times.

Planting Blackberry-Bushes

Blackberries and raspberries may be successfully planted in fall or spring, spring usually being preferred. If I have good plants in the fall, I do not hesitate to set them. If in spring, we set them as early as possible, the sooner after they are taken up from the nursery row the better. The dewberry is a trailing blackberry, and in flavor much more to my liking than the others. But they are not so productive, and the berries, being gathered less conveniently than common blackberries, on account of the trailing habit of the plant, are hardly ever cultivated on a large scale for market. I have had some plants of the Lucretia, also a Texas sort with large fruit, but have rooted them out again. Plants can be secured from some of our nurserymen and seedsmen. In its various species it is found growing wild quite commonly in waste places, especially on sandy knolls. If you desire to try it, set few plants at the proper time, and train them to stakes.

Small-Fruit Varieties

"What are the best kinds for market?" is another question. Among strawberries we have a good many that are readily salable. In fact, any well-grown, fair-sized strawberry will find takers. I like Marshall, Senator Dunlap and Brandywine for general crop, Ozark for earliest and Gandy for latest. But strawberry varieties do not thrive equally well in all localities. Find out what variety your neighbor has best success with. The standard red raspberry is yet the old Cuthbert, and the standard blackcap the Gregg, with Kansas for an earlier sort. Eldorado is a good hardy blackberry, although much smaller than the older Kit-tatinny, which is not quite hardy. If you can find a better red currant than the Wilder, let us know it. Clusters and berries of largest size; bush very productive. Among gooseberries I know none more reliable, generally, than the Columbus, also known as Chautauqua. Bush is thrifty, very productive, little subject to mildew; berry of largest size and of fairly good quality; greenish-yellow. Industry is an English sort and, like other European gooseberries, subject to mildew, requiring spraying with liver-of-sulphur solution. It is grown to some extent for the canning-houses. No gooseberry suits my own individual taste better than Industry. I grow this in tree form mostly. I like it.

For Success, Feed

We should not imagine that we can raise such crops of celery on any kind of soil or with any kind of manuring. The more than sixty thousand celery-plants on one acre require a lot of food and a lot of water. The muck-lands in South Lima furnish the moisture from below, as that soil, being composed mostly of decayed and decaying vegetable matter, acts very much like a sponge in absorbing and retaining water. Even then irrigation from the top is found useful and beneficial in a dry season. Food is furnished in abundance, also in annual applications of from one to two tons per acre of high-grade complete fertilizer. On our upland loams, whether more or less sandy, or somewhat clayey, our first concern, in order to fit them for growing celery, must be to fill them with vegetable matter, either by the lavish use of stable manure or by plowing down clover or similar crops (which will increase the water-holding capacity of the land). We must also resort to artificial irrigation in a dry time. Unless stable manure of the best kind is used freely, heavy applications of fertilizers will also be required, and may be as necessary as on the muck-lands. With these requirements properly looked after, we can raise as big crops of celery on our strong upland loams, and even on the thin sandy soils of portions of this county, just as well as on South Lima or any other muck-lands.

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Poultry-Raising

Produce Better Poultry

ONE sure way to combat the high cost of living is to produce more and better poultry. What excuse has the farmer for not raising more poultry when eggs are twenty-five cents the year around and table fowls never less than fifteen cents per pound? He has none whatever. As a rule, the women are supposed to be the "boss" of the poultry industry on the farm. The farmer can buy thoroughbred stock and bogs, but when the wife wants good poultry, it is refused her.

One day I happened to visit a prosperous farmer and his wife, and naturally I was anxious to see their poultry, for I believe that one of the really good ways of judging a person is by the way they manage their poultry. I had been telling the farmer and his wife of the coops that I had built for my poultry and was trying to explain to them how much "handier" it was to have the chicks in coops than in old barrels and boxes.

The wife became interested and asked me what my coops cost me. I told her that it would take about four dollars and fifty cents' worth of material and that if she would get it I would make her a coop while I was there. She at once became very anxious to have a coop, but her husband didn't put much faith in "those new-fangled coops of your'n," and he said that he would make her an "A" coop out of some old boards he had that would be "just as good" as my handy and sanitary coops.

Is it any wonder that the housewife is not improving her poultry as fast as her husband is improving his live stock when he refuses to allow her to, and yet she has no objection when he wishes to introduce new blood into his herd. My advice to all farmers is to allow their wives to do what they want to with the poultry. You cannot realize the benefits to be derived from poultry culture until you go about it in a systematic way. Therefore, let everyone unite in giving Uncle Sam "better poultry and more of it."

The farmer may be well educated along the different branches of agriculture—more so than his city cousin—but the city cousin has stolen a march on the farmer when it comes to raising good poultry. If the farmers of the United States could realize the possibilities of the poultry industry as a means for them to enrich themselves, they could better not only their own condition, but that of mankind in general.

As a rule, the farm poultry is left to

shift for itself, no thought being given it except to gather the eggs and later wonder why they don't hatch. It is not given a third of the chance afforded the other branches of the farm work, while, with only a little care and attention, it would return as much profit. Why it is, is one of the unanswered puzzles of modern times.

If every farmer in the United States would buy of some good reliable breeder a good cock every year—say one that would cost about ten dollars,—the advancement made in the farm poultry would be worth all the scrub stock in existence. If he would gradually replace all his scrub stock with pure-breds, the advancement would be worth several millions of dollars.

There is no dispute raised to the fact that the pure-bred is superior in every respect to the scrub. The pure-bred will lay more, eat less and cost less in the end than any scrub. The pure-bred is the first to lay, the first to set and the first to resume laying again. In fact, she is "first in everything," and for this reason, if for no other, she is the more profitable of the two.

CHESLA SHERLOCK.

The Stoneburn Trap-Nest

A SIMPLE wooden trap-nest of Professor Stoneburn's invention—which he has presented to the college instead of patenting—is used in the Connecticut College egg-laying contest. It could be built on any farm. The only part not of wood is a small wire pin which holds the door from swinging outward, the nail on which the trigger hangs and the hinge at the top of the door, which is simply a wire rod. Ordinary blind staples will fasten the door to it.

The nest is a wooden box with a narrow strip nailed on the bottom of the front. For ventilation the swinging wooden door is fastened about an inch below the top of the box, and the door is cut away somewhat to allow the hen to thrust her head only out beneath it. At the left side is a wooden



trigger. To set the nest, swing the door inward, and bring up the trigger, and let the door come back till it rests against the trigger, each holding the other in position.

The hen pushes the door inward on entering, the trigger instantly drops, and as the hen nestles into the straw in the bottom, the door swings down in front of her and against a transverse pin on the side piece. She cannot push the door past this pin, which is simply turned down to allow the door to swing outward when the attendant removes the bird. In each house the row of nests is at the back, and over it are the roost and dropping-board.

J. OLIN HOWE.

No use to pray for peace on earth and be careless about the fences.

A Word to the Land-Looters

By Berton Braley

SOME farmers are nothing but miners; that's plain,
If you'll only consider the way that they do.

The ore that they get is called produce and grain,

And it yields them rich gold for a season or two;

But a mine will run out—that is certain and sure,

And a farm that is run like a mine cannot last.

If you will not restore and you will not manure,

The farm will be only a wreck of the past.

The farmer who gouges the land of its wealth,

And never puts back any wealth in return,
Is robbing himself by his cunning and stealth,

A fact he will know, though it's bitter to learn.

A farm's like a boiler, it cannot make steam
Unless it has fuel to keep up the head,

And he who thinks otherwise wakes from his dream

To find that his boiler is fireless and dead.

Or, you might say a farm is a banking account

On which you are checking for money you need.

To what will your balance of riches amount
If you never put in—and you draw without heed?

The end of the story is easy to see,
Some day—you'll have your own folly to thank—

Your drafts on Dame Nature will come marked "N. G."

Account is exhausted—no funds in the 'bank!"

The Panhandle of Idaho

Has Greatly Diversified Land, climate, altitude and products. It is a country to suit all comers. On one farm of 160 acres was grown a total of 112 different varieties of products!

☐The soil of Northern Idaho is of volcanic origin—very deep, warm and made up of the richest ingredients.

☐All the cereals, corn, potatoes and other vegetables, fruits and grasses grow in abundance.

☐The Nez Perce and Camas Prairie Country is famous for its production of grain, for its blooded cattle, and is particularly well adapted to dairying, hog raising and general farming.

☐The Lewiston-Clarkston region, with its five and ten acre irrigated orchards and vineyards and its free Horticultural School, is very attractive to homeseekers.

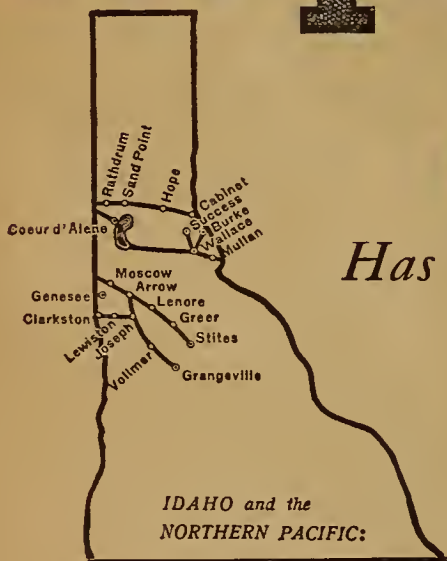
☐Apples, peaches, cherries, berries, vegetables and grapes bring remarkable incomes to growers.

☐Idaho's population increased more than 100% during the last census decade—yet there is plenty of room for more.

☐The State University at Moscow, a State Normal School at Lewiston and the State College at Pullman, Washington, offer exceptional educational advantages.

☐Write today for detailed information and particulars about low fares for Homeseekers and Sightseers to

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☐Ask for our "Opportunities" book which describes the Northern Pacific points where "opportunities" exist in the Panhandle of Idaho.

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The FARMERS' LOBBY.

KINDLY fix your mind, gentle reader, on the fact that some millions of years ago—you may hitch on as many ciphers, after that, as seem necessary to produce the correct appeal to your imagination, but, anyhow, concentrate your thought on the fact that—quite a long spell back—there weren't any Rocky Mountains, and that the Alleghany Mountains were about eight thousand feet taller than they are now. This is very necessary in order that we may get an even start in the subjoined effort to popularize an explanation of the work of the Bureau of Soils.

With that thought about the aforesaid altitude of these now humble mountains firmly gripped, let me explain that popularizing something that came out of laboratories, retorts, glass tubes and the unexplored recesses of the unabridged dictionary consists in reducing it to words of not over seven syllables, that somebody without spectacles and long gray whiskers once before saw in print and can recognize without an introduction. I make bold to say that if a law could be passed—no, I mean enforced—compelling all persons with Ph. D.'s, D. Sc.'s, LL. D.'s, D. D.'s and other d—things hitched to their names to deal exclusively in words no longer than a Cheyenne lariat the world would be made over inside of a million years. Why on earth men will labor with microscopes and telescopes and graduate-glasses and glossaries, all their lives, in order to extract a piece of information out of a rock or a spectrum, and then proceed at once to lock it up again in a lot of polysyllabic phraseology of unstratified irrefragability, is beyond me. The mission of this piece is to unlock a piece of really useful information out of the nickel-steel, burglar-proof, time-locked encasements of impossible language that commonly drive folks away from it, and display it to public view. It's about soils, soil fertility, fertilization, rotation of crops, and the like.

Hoping that knock will keep the scientific gentry occupied for a minute or two, and feeling relieved to have it out of my own system, you and I, dear reader, will go back to the mountains. They're, maybe, at the high spots, twenty thousand feet up, and we are the only folks to look over the scene. Mankind hasn't yet started on its weary way through the vale; hasn't been invented, in fact. The springtime of the world hasn't suspected the worries of constitutional law, interstate commerce, judicial recall or how old is Ann. North America consists mainly of a sausage-shaped string of mountains and plateaus, running from northern New York southwesterly to about the middle of Alabama. New Jersey, Delaware and all the tide-water sections to the south are still under the ocean. Not a foot of Florida has emerged. The Gulf of Mexico occupies most of what will later be the Mississippi Valley.

For millions upon millions of years the waters of ocean and gulf surged around the cliffs and peaks of these mountains, and gradually wore them out. The material that was worn away was carried off by the tides, washed down by the rivers and deposited at the bottom of the ocean or the gulf. In time it became the bigger part of what is now the U. S. A. The ocean subsided, or rather the general level of these lower portions was probably raised up by forces from within, and the ocean backed off.

All Soils are Made of About the Same Materials

THAT was the beginning. The geologists know all about it. One part of the continent stuck its nose up out of the water before another; the winds and the atmospheric elements began to work on it, changing the character of the material that had been first worn away from the original mountain ranges, then left for ages under the ocean, and now exposed to sunlight and air. Still more time passed, and vegetation began to grow on the parts exposed. It decayed and grew again. In some parts, where the soil, formed by this same general process, is vastly older than in others, that soil is very different; but fundamentally it was and is about the same, made by grinding up the same original masses of rocks in those mountains. They prove this by studying out that a sandy, light-gray soil in Florida is made of the same mineral basis as a bright-red, heavy clay soil in Virginia or Maryland. The difference is not in the metal and mineral basis, but in the different effects that differing periods of exposure, different climates, different kinds of vegetation, and so on, have produced. Farther over, to the northwest of this region, the trick

What the Bureau of Soils Says on Soil Fertility

By Judson C. Welliver

was done in a different way. The glacier came down out of the north, ground up everything in its way, melted and left an immense fresh-water lake or system of lakes. That lake is indicated by the Great Lakes of to-day, but it spread over a vastly greater region. When the glacier melted, the ground-up stuff settled to the bottom of this lake; and when the lake dried up or ran out, the soil, much as we find it now, was left.

But, whether it originated in the glacial and fresh-water action, or in the process of disintegration of the original Alleghany Mountains, the soil was made of about the same materials, simply because it all came out of the same original mass of molten material that, cooling down, made this world what it is.

With a hasty apology to the scientific folks for saying it so roughly and low-browedly, and admitting that there are details and modifications that they would have included in the statement, we will pass on to the next step. Here we branch off and start a joint debate with ourselves. There are two general theories of what happens next in the development of soils. One is represented by the view that the government Bureau of Soils maintains; the other is sustained by a school in which are enrolled most of the soil experts of the experiment stations. Not all of them perhaps, but most of them, are not admirers of the Bureau of Soils. In fact, some of them, like Doctor Hopkins, of Illinois, jump on the Bureau every few minutes with hob-nailed boots and allege that its intellectual top story is inhabited by bats.

These experiment-station gentlemen, as I get it, maintain that a certain balance of elements is necessary in the soil to make it produce satisfactorily. They follow the theory of Liebig, who held that the trouble with run-down soils is a lack of either potash, nitrogen or phosphoric acid (especially the latter), or of all three. Add the needed element, and be happy.

Animal Life and Soil Conditions are Much Alike

THE Bureau of Soils, on the other hand, maintains that this problem of fertility and productivity is a very much more complex one. It doesn't claim to be so very sure about anything in particular; but it has been working away trying to get at a few elementals.

For instance, it points out that there is a very close analogy between animal life and soil conditions. A human being, say, is getting along well, until suddenly he develops malaria or typhoid. What makes it? Some of the functions of the system are deranged; it develops that the system has been producing, and failing to relieve itself of, some substances that are injurious. Exactly parallel to this is the experience of some soils: elements develop in them that are injurious to plant life. These elements must be removed, or their malevolent effects must be overcome by the introduction of others that will neutralize them. The answer of Liebig to this question was that we must fertilize rightly; must give to the soil the particular elements that it needs in order to establish the correct balance. On the other hand, the Bureau of Soils opines that, just as a human being may get "run down" by living in the wrong way, so a soil may get "worn out" by being cultivated in the wrong way. It isn't so necessary to add some new element, through fertilization, as it is to give the soil itself, through proper rotation, etc., a chance to rectify its own mistakes. Rotations are also recommended by the Liebigites; and fertilization is by no means rejected by the Bureau.

Underlying the Bureau's viewpoint is the theory that all soils have more or less of the elements necessary to sustain plant life. That takes us back to the lesson in geology and the identical origin of all the soils. Introduce water into this soil, and it takes up in solution a certain amount of various minerals. It can't carry very much of any particular element until it is saturated; and being saturated, why, it's saturated; it can't take any more, no matter how much there is handy; it doesn't need any more. Give it a fair chance, and it will raise a crop.

This is a mightily complicated and hypothetical theory, compared with the orthodox one, that if a soil

needs phosphorus, you should give it phosphorus and make it fertile. But the Bureau of Soils points out some instances that are hard to explain away. For instance, in Japan they can figure out a continuous agricultural history of six thousand years. The lands have been producing throughout that period, and are about as productive now as when it started; more so, if anything, according to the best information. In northern Europe, they were raising about twelve bushels of wheat to the acre three hundred years ago. The land had been cultivated, then, for a thousand years or so. To-day that land produces thirty bushels.

Rotations are Needed for All Soils

DR. MILTON WHITNEY, chief of the soils bureau, insists that proper cultivation and rotation will make run-down soils produce again as well as ever. "The trouble is not with the land, but with the people farming it, and their methods," stoutly declares Doctor Whitney; and without any brickbats for Liebig, I am inclined to think that the Whitney school makes a pretty good case.

The Bureau of Soils is trying to find out all about the changes in soils that are wrought as a result of cultivation. It declares that the mineral and metal basis changes very, very little. The products of vegetable and animal growth, on the other hand, change greatly and modify soil qualities very much. One will be useful and benevolent, another vicious and harmful.

A certain soil, once producing excellent crops of wheat, had become "exhausted." Cow-peas ground very fine were applied and it was found they had restored the soil; it produced a good crop, and did the thing three times in succession; then the soil lapsed back into its first condition of non-productivity.

Why did the cow-peas have that effect? The Bureau took like proportions of potash, phosphoric acid and nitrates—the plant-food elements of cow-peas—and put them into the soil; and it didn't produce the effect of restoring its fertility. The point seemed to be that these various elements, mixed together and applied to the ground, didn't have the genuine cow-pea effect.

Doctor Whitney in a recent address gave this explanation of the operations within the soil of various agents introduced through rotation of crops. He seems to have a considerable backing of authority and experience in favor of his theory that fertilization is, at least, much less necessary, if scientific rotation is followed. His bureau's problem is to develop the correct scientific rotation for various soils and climates. He says:

"We are working now on a soil in Iowa which, with stable manures, every time produces a smaller crop than without. It is very unusual, and I do not wonder that you smile. Now, if there are toxic substances thrown off by plants which the soil is not in a condition to remove or change at once, we try to hasten it by cultivation, by aëration, by oxidization. In many of our systems of rotation, especially in Europe, the need of fallowing or resting the soil is recognized. Another way to maintain fertility is by such a rotation as will produce each year a crop that is not injured by the excreta of the crop of the previous year. These excreted substances are not poisonous alike for all plants. In the Rothamsted experiments, barley follows potatoes after potatoes have been grown so long that the soil will no longer produce them. The barley grows unaffected by the excreta of the potatoes, another crop follows the barley, and then the soil is in condition for potatoes again.

"In the experiments of Lawes and Gilbert they have maintained for fifty years a yield of about thirty bushels of wheat per acre on the same soil where a complete fertilizer has been used. They have seen their yield go down to twelve bushels, when they did not use the fertilizer; and they have kept it up to thirty bushels, without fertilizer, by using a proper rotation of crops. The rotation has had the same effect as the fertilizer."

This is the clincher of the Whitney theory: that fertilizer at times is useful to accomplish the same thing that a proper rotation would do. There are cases where experience has shown that a certain process of fertilization would produce the desired results. In that case, the necessary rotation to do the same thing may not be known. Therefore, better use the fertilizer. But, none the less, the soil bureau is confident that it is going to develop systems of rotation, in time, that will meet the every-day farm requirements.



The Peripatetic Farmers



By Ray McIntyre King

"HAT a love of a bungalow!" exclaimed Mary Baird, as she inspected her new neighbor's brand-new dwelling. "It makes our house look worse than ever by comparison. Some day—but, oh, dear, how these little farms eat money! I want a big centrifugal pump, and a tank-house, and some more up-to-date dairy appliances, and tiling for that seepage lot, and—when do you think we'll get to the house?"

"If my ten acres had such trees and roses as yours," answered the new neighbor, "and brought in such an income, I shouldn't care whether I had the latest thing in house, or not."

"Yes, you would," retorted Mary Baird with her direct, amiable frankness; "you'd need the setting, soft rugs, and stained woodwork, and subdued lights, and window-seats, and all that." Her friendly gaze wandered appreciatively over the details of her new neighbor's dainty afternoon dress, the puffed hair and high-heeled slippers. "You are, my dear, just a—farmeress. I'm a farmer. If I did the orthodox thing, I'd be satisfied to live in town and dust a seven-roomed house, and make myself jabots, and discreetly and tamely live within my husband's income, but I'm a farmer. I've got to farm, just as some women have to go on the stage, or create a scandal, or write. It is my way of expressing myself. But you—well, I've my doubts."

"Oh, I'm a fraud, all right," laughed the little woman deliciously. "You've sized me up, Mrs. Baird. I don't know boo about farming, but I'm going to learn. I've got to learn!"

Mary Baird did not fail to note the almost imperceptible break in the voice and the swift, strained lines about the whimsical little mouth.

"I've always read the country journals," continued the woman, "so when my money came and—and—I was confronted with the necessity of readjusting my life,—why—" a decided break in the gentle voice and a flourish of black-bordered linen made Mary Baird draw her heavy, thick-soled boots sharply back under her khaki skirt and sit very stiffly erect. Mary Baird hated lapses into mortuary emotion. She had cynically observed that the blacker the mourning garments, the more readily they usually faded into bridal robes. For all of which she had studiously avoided any mention of this woman's evidently very recent bereavement; recent, if the newest and smartest of mourning clothes meant anything.

"Then," continued the dainty little widow plaintively, "then I turned to the country. Do you think I can make this farm pay?"

"That depends on yourself," answered Mary Baird crisply. "The farm's all right. I make our farm pay, but I'm a born farmer. And I have my husband's advice and aid, though he has his town business. The farm is my enterprise. Good boy!—he indulges me. He says if I prefer pigs and Leghorns to society and bridge, it is all right with him."

"You don't look like that kind," said the widow, and Mary Baird did not care whether she meant the remark as a compliment or a disparagement.

"But I do hope you'll not degenerate into a mere farmer," said Mary, her fine eyes bent kindly on the widow.

"Degenerate?" queried the widow with puzzled brows.

"Yes, as I have," explained the capable Mary. "Somehow, dainty femininity and efficient farming will not hang together. You're bound to get to caring more for calves and plants than for the set of a collar, of the size of a braid. Let me see, it was pompadours the last I remember of things fashionable. I know what stock I'd have my prunes and oranges budded on, and the per cent. of phosphates I'd sow on the alfalfa, and when to turn the raisin-trays, but to save me I don't know whether women are wearing their skirts one yard wide, or ten."

Mrs. Mason, the delectable little widow, gurgled her little bubbling laugh.

"You are so, so distressingly efficient, Mrs. Baird. How thankful I am that I have you for a neighbor. You shall be my teacher."

"How's your pupil coming on?" queried Mary Baird's husband one night a month later. They were sitting on their porch enjoying one of those superbly tropical California nights, when the stars are close and friendly, and the air heavy with the fragrance of roses and oleanders and other multitudinous blossoming things; when the thick, soft dusk is lifted occasionally by those cool wandering sea-winds that sneak in somehow between the coast barriers and flit coolingly up the summer-bleached inland valley. In the dusk, Malcolm Baird was just a huge figure sprawling restfully in his rocker, a lazy voice in the darkness, a voice behind a glowing cigar spark.

The last sleepy chick had been long since tucked into its fireless brooder, and the whir of the cream-separator was long since silenced, and Mary Baird, farmer, felt free to join her husband in one of their confidential, comradely evenings.

"My pupil? I disclaim her," cried Mary hotly. "She's no disciple of mine. And I'm so disappointed in her! At first she seemed so enthusiastic and intelligent. But she's spent these precious planting days, not in planting her crops, but in putting the finishing-touches on her house. She

did—just to appease me, I think—hire a little garden planted. Think of being a farmer and hiring someone to plant your garden! And, of all men, whom do you suppose she hired? The six-weeks' widower!"

"Not him!" jeered Malcolm. "Now, that's what I call being a successful woman farmer—getting strings promptly on the nearest widower."

"Humph," said Mary Baird, "any woman can land a six-weeks' widower! That's what disappoints me so—I thought her something more than any woman. You see, I'd hoped so much of her. I do so want a congenial woman neighbor. I was so interested in making her farming venture a success. And I helped her in numberless ways. But you hear me, Malcolm, the next woman farmer I undertake to tutor must be a slattern with a college education, at least six children and no income. That will guarantee that she'll stick to the farming, because she has to!"

"How do you make yourself fit into all your requirements?" drawled her husband.

"Oh, I'm the exceptional woman," answered Mary Baird in her most matter-of-fact tone.

"You bet you are!" exclaimed her husband admiringly. "And I'd love you just the same, no matter what you took a notion to run—a farm, or a foundry, or foreign missions. It is the woman a man loves, not her avocation."

"Thank you," said Mary happily. "I'm wondering how long my little widow's farming experiment will hold out."

"Till her money gives out," quoth Malcolm, worldly wise. "Then she'll marry the first man that comes handy."

"I'm afraid so," said Mary. "And the pity of it is that she is much too fine to throw herself away just to secure a continuing hired man."

The very next morning, one of those clear, hot Sacramento Valley summer mornings, after Mary Baird had pinned a La Marque bud on her husband's lapel and sent him off strong as a lion to his day's work in town, she armed herself with a basin of kerosene and water, and repaired to her garden. Down on her knees, she nosed around under her squash-vines. A crumpled sun-bonnet was pulled low to shade her eyes from the fierce glare. Her browned, competent hands rattled the rank green growths.

"What on earth are you gathering?" came the surprised and surprising query.

Mary Baird looked up from her task to see the pretty San Francisco widow reposing gracefully in the shade of a camphor-tree. Her wide sun-hat was especially becoming, and her lavender and lace morning dress most charming.

"Squash-bugs!" said Mary with a note of savagery not meant solely for the kingdom of depredating insects.

"That's what must be ailing my vines. I must hire Johnny Smith to pick them off."

Thereat Mary Baird arose to the full of her five feet ten inches of dignity and severity.

"The first principle of profitable gardening is, Do it yourself."

"Oh, but I can't," protested the widow drearily. "It is so hot. And I feel so like malaria. And if I should get sick, everything is lost."

She looked so utterly wretched that Mary Baird repented instantly. "Such an incompetent, irresponsible little thing," she thought compassionately. "What's the use of rowing with her?"

"Malaria? Oh, but I know how you feel! The first day you're afraid you're going to die. The second day you're afraid you can't die! But you'll survive. We all do. It is just an unpleasant incident, like first love, or having a tooth pulled. All we valley folk go through it some time or another, and then live to a hundred!"

"You're that cheerful!" said the widow wanly. "But you have health and happiness, so I can't see that you deserve much credit, Mrs. Baird, for your optimism."

Mary Baird opened her eyes wide and studied intently the troubled face of her visitor.

"Perhaps not," she answered absently. She was wondering if her neighbor might not have something worse than malarial fever burning her vitals.

Mary Baird, watching the indifferent efforts at farming by her neighbor soon forgot her compassion in the daily accumulating contempt for such shiftlessness.

"What that woman wants," Mary told herself cynically as she picked her daily stint of berries, "is not a farm, but a husband. And such a lovely little farm to go to rack and ruin! Why, the worst man farmer wouldn't farm so carelessly as she does. Posing as a woman farmer, you'd think now she'd have some pride."

She forged steadily through the briery vines, picking the ripe fruit. That is one of the penalties of being a successful woman farmer in California: you can't let your crop rot ungathered for lack of the pickers not to be had for love or money. And while she picked, only pausing occasionally to wipe the perspiration from her face with her gingham apron, she had to listen to the *tinkle, tinkle*, of her neighbor's piano.

"She'd better be hoeing her tomatoes, or spraying her chicken-house," mused Mary Baird, who hated a piano with a virulent hatred. Her musical education had been limited to a six-month in childhood, when an accomplished Boston Conservatory aunt had locked her for an hour daily in an ebonized parlor, with her feelings and an upright piano.

Tinkle, tinkle, tinkle, ran the inane, idiotic accompaniment to Mary Baird's thoughts.

"Musical? Shucks!" scoffed Mary aloud to her berries. "When a woman pretends she loves music so that she must sit and thump all of a glorious morning, it is not music she loves, but the sound of her own fingers! That piano is a profanation of the sound this morning of the great winds coming up the valley. Music? If she'd only be quiet, I might hear that chorus of birds in the great oak at the barn. Music? That meadow-lark in the magnolia is spilling more music on the air than her old music-rack holds.

What is her printed score—the best of it—but an imitation of winds and waves and birds, the natural music of earth?

"When you have the real music, why should you bother much with the imitation? Music? Fudge! Her music is just a sound trap to catch some man!"

Mary Baird had an abounding contempt for the female drone whose accomplishments are designed merely to attract the working male. The heat and the stooping and the piano-tinkling kept getting more and more on her nerves. Presently her strong, sustaining philosophy began to fail her utterly. Wasn't she, Mary Baird, doing a lot of unnecessary drudgery in the world? What was the use of a woman's making two blades of grass grow where none had grown before? What man cared whether a woman did it, or not?

Mary Baird, pecking automatically at the bushes, had bitter visions of that other woman, daintily dressed, amusing herself in her cool, well-appointed parlor. And Mary Baird was dangerously near to revolt against Mary Baird. The indoor Mary Baird that might have tinkled and idled and been inane and charming was up in arms against the outdoors Mary Baird that gloried in the soil and things a-growing. One said, "What's the need of a woman exerting herself, except to attract, when there's always a man delighted to assume the burden of your existence?" But the other retorted, "Can an eagle from the crags be content in a canary's cage?"

Tinkle, tinkle, tinkle, ran on the idiotic accompaniment. *A woman might as well sit down and be pleasing; there's always a man to care for her; that is the easiest way, the easiest way, the easiest way, tinkle, tinkle, tinkle!*

Mary Baird swung a crate of berries up on her broad, strong shoulder, and with the physical act she seemed to lift herself to higher spiritual planes. And the outdoor Mary had her foot once more on the neck of the indoor Mary.

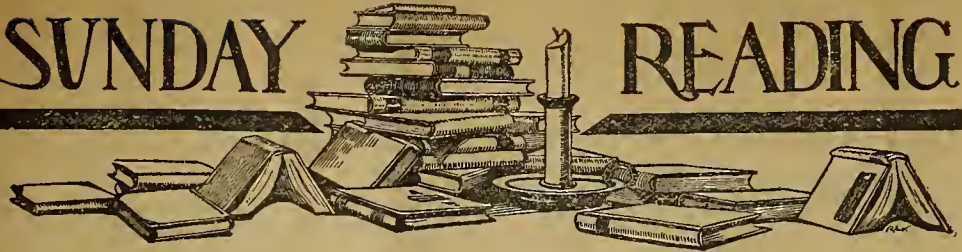
"We're not of a kind, she and I," said Mary, arriving at the usual conclusion of her morning's troubled cogitations. "Mrs. Mason and I are not of a kind; we can't be friends and comrades."

But the decision afforded her no peace, no pleasure. She had hoped so much of this new neighbor. She had longed so to have one woman [CONCLUDED ON PAGE 23]



"The pretty San Francisco widow reposing gracefully in the shade of a camphor-tree"

SUNDAY READING



The Parable of the Cut Glass

By the Rev. Elot White

THE prophet Jeremiah, in the eighteenth chapter of his book, uses a parable of a potter and his clay, which has been familiarly referred to in all the ages since his time. He says the Lord bade him go to "the potter's house" and there await the divine teaching. So he made the visit as he was directed, and found the craftsman forming the clay on his wheel. "And the vessel that he made of clay," continues the prophet, "was marred in the hand of the potter: so he made it again another vessel, as seemed good to the potter to make it."

And then while Jeremiah watched this process of the old-time handiwork, suddenly he heard the inward Voice saying to him, in behalf of his people Israel, "Cannot I do with you as this potter? saith the Lord. Behold, as the clay is in the potter's hand, so are ye in mine hand, O house of Israel."

So homely and yet so appropriate is this parable that it is not strange that it has been continually recalled by later teachers, and has slipped into the common speech of many nations. And so the proverb, "As clay in the hands of the potter," that always signifies helplessness in the control of some irresistible power, traces its descent from this parable of the Hebrew prophet long ago.

The writer was impressively reminded of this noble instruction recently, when visiting in a great city department-store a room devoted to the production of cut glass. Here were shown all the processes in this delicate manufacture, from the first channeling of the cup, dish or vase with the outlines of the pattern it was to bear, to the final exquisite finishing and burnishing of its every detail.

The wheels on which the glass was ground were very little different from those primitive appliances that Jeremiah saw the potter using, except that, instead of the clay whirling about on a spindle for the artisan to press and shape between his fingers, here the workmen held the vessels in their hands and applied them at the required angles to the grinding-wheels before them. But still it was the skill and power of hand and foot that perfected these products of cut glass, and modern machinery and the carelessness too often resulting from its use seemed not to have affected this industry at all. So that, although Jeremiah would probably have been amazed and bewildered to the limit of endurance by a modern machine-shop or clashing mill, he could have comprehended after only a few words of explanation the activities of this workroom so like the "potter's house" of his own time.

How quickly the venerable prophet would have found spiritual instruction in the cut-glass room! For example, where the vessel was first put to the grinding-wheel by the firm-lipped craftsman, it was soiled and opaque, like a soul that has been left without guidance and discipline; and then, as it was pressed against the rough edge that delved into it so sharply, it gave forth a kind of plaintive, moaning sound as though actually suffering from the abrasion.

"Behold," the prophet might have cried to his hearers, "even so your spirits are darkened by the impurities of this world, and though they bewail the pain, they must be held firmly to the great Master Workman's wheel of experience and discipline, until they receive the pattern He intends them to bear and are counted worthy of the purifying He has purposed for every soul that He accepteth!"

But the superintendent of the cut-glass room says that sometimes when a piece is nearly finished, and much time and labor have been devoted to perfect its pattern, suddenly it will break asunder between the craftsman's hands. Some hidden flaw in the glass, perhaps, has only just shown its disastrous presence, and how great is the ruin of the shattered vessel! The superintendent adds that there is no need to fine the artisans for such calamities, as they who have expended so much effort on the broken work always feel the saddest over its loss.

Again, how quickly the teacher of long ago, who found so much wisdom in the potter's house, would have recognized the

spiritual significance of these facts of the cut-glass room! "So may come ruin in an instant even to a life that the Master Workman toileth and yearneth over long, because of some secret fault and evil that it clings to against all warnings. And the Divine Craftsman gazeth on the fragments of the cherished vessel in his hands with infinite sorrow!"

But now, of the cut-glass vases, bowls and receptacles of so many shapes and patterns, which did not break, but came safely through the processes of grooving, grinding and polishing, what was the "latter end"? Truly, glorious! For on a long table, with its top all one mirror to reflect the glitter and grace of the vessels standing upon it, were displayed the finished products of this difficult manufacture. As from the myriad facets of clustered diamonds all the colors of the rainbow flashed from the intricate designs adorning the crowding forms, where now transparent in spotless purity they seemed lightly floating on the mirror that gave back the image of their radiant company.

Surely Jeremiah saw no such splendor as this in the potter's house, for vessels of clay would look dull indeed beside this sparkling kaleidoscope of carven glass. Would he have continued his own teaching then, or perhaps have said to us, "Read in your Book of Revelation, written in a later day than mine, the fulfilment of the parable of the cut glass?"

For truly one who imagined the prophet using this modern manufacture set forth the divine way with human lives, could not fail to realize how vividly this bright assemblage would serve to represent the multitude of the redeemed. As certainly as these products of human skill had to pass through their keen delving with the patterns and be purged utterly from the soiled gloom of their first state, so must men's souls endure the trials, grief and pain of earth before they can come "out of the great tribulation" and be counted worthy of the heavenly purity and joy.

And did not St. John in his Revelation see the mighty array of the redeemed standing on a "sea of glass"? Just as the vessels of the human handicraft had their beauty redoubled by the mirror on which they were ranged, so the seer of the New Testament beheld the splendor of the victorious company in heaven returned by the ocean of Divine Love whereon they rested, and into the depths of which they never wearied of gazing.

I was walking along a quiet road in a southern State when I came upon a dilapidated cabin. There was no door nor window, and the cabin had but one room. The floor was rotten. The fireplace was crumbling. The soul of the house was gone. I didn't feel comfortable there. No amount of money could have induced me to have spent a night there. Just as that cabin looked to me, so any house must look to God in which the spirit of Jesus is not.

The Council of Mothers

Cora A. Matson Dolson

A "MOTHERS' Council," did you say, Where you would have me go To solve the vexing problems that We mothers only know?

I wonder could it straighten out, Through "interchange of thought," The tangles and the questions that My last half-hour has brought?

For instance, "Mama, how could God Make everyone of dirt?" Then, "Teddy's tumbled off the steps, And you must kiss his hurt!"

"May I go fishing, Mama, say, With Bobby and with Jem?" "Our Topsy's got four kittens, and May we keep all of them?"

And "Ethel's birthday party comes Next Saturday, and I Must have my white dress clean to wear! "The boys took all the pie!"

"Oh, Teddy's climbed up on the curb, And looking in the well!" "I didn't break the pitcher, I Just touched it, and it fell!"

You frown! Your Council does not deal With trifles such as this: The folly of the thought, to cure A flesh-bruise by a kiss.

Then I will hold my Council here, With babes for company, And seek for mother-wisdom from The God who gave them me.

Let Us Be Frank

By Mrs. A. J. Wortman

LET us be frank with the boys and girls, and instruct and guide them so that they shall at least know the dangers that confront them. Tell them of the secrets of life, and teach them their part in keeping that wonderful structure, the body, pure and sacred for the use intended. Old-fashioned people will say that it is a pity to brush the bloom off their fresh young lives, but we had better do that than leave the necessary process to an unfeeling world. And by all means let us go with our children, seeing to their pleasures and knowing at first hand what their amusements are. Let them have their good times and their innocent flirtations at their parties, under proper chaperonage, but when it is time to go home, take them under your own protection, and, until the age of discretion, make it part of your duty to see that they are provided with plenty of wholesome pleasure, under your own judicious oversight.

To thousands of mothers, this is familiar territory, but for the younger ones, those who have the tiny ones in their charge, this is written, and if it is the means of awakening one mother to a realization of her responsibility and thereby saving one precious girl or boy, it will not have been in vain.

Cause and Effect

THE powder lay in heaps—a threat Of death—where powder should not lie; Some fool threw down a cigarette— And flaming ruin rent the sky.

Whereat, a solemn jury met And laid the blame, in wisdom rare, On him that threw the cigarette, Not them that left the powder there.

Upon the heaps of Want and Shame Whereon men build, one evil day Some fool will fling a word of flame— And what will follow, who shall say?

But should all earth be overset, We'll lay the blame, in dull despair, On him that threw the cigarette, Not them that put the powder there. —Arthur Guiterman, in *Life*.

I Believe!

By G. Henry

DO I believe in God? I do. Do I fear God? I do not.

Good human fathers are not feared by their children. Surely God in His great goodness is more lenient, more loving, more forgiving than clay mortals—were He not all-generous, all-forgiving, we would not, could not, endure, for we offend over and over again.

Supreme God, permitting us to stumble blindly and stray wilfully, forever and anon breaking the laws He left for our guidance, must be believed in.

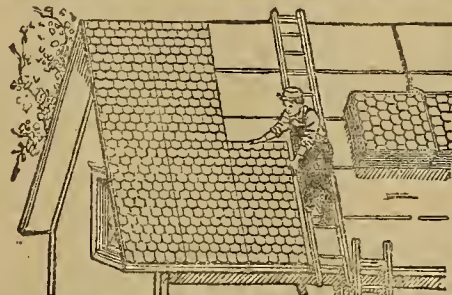
The grass, the birds, the beasts, the flowers, the babies, patient mothers, hard-working fathers, all attest His greatness, His goodness, His existence.

God is God, whether or not man be made in His image; nature is the proof of God, and but for nature we should perish, for we are of and live by nature. I believe in God because He helps me—even me.

In deep trouble I have asked and received. Weak and weakening, I have asked Him for strength, and strength has come to me. Sick and sickening, I have asked for the will to perform daily tasks, and my bodily aches have ceased.

The sun shines, and the moon sheds her light, and the brooks purl, and the rains fall, and the snows come, and the birds sing, and the flowers bloom. The answer is God.

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Good Fun for All Children

KEWPIE KUTOUTS in many colors will appear in *Woman's Home Companion* for October

Now, the Kewpies were discovered by Rose O'Neill. They are always having fun and helping Dotty Darling and her Baby Brother.

Beginning in the October *Companion*, these Kewpie Cut-ups become Kewpie Kut-outs, all in color, with fronts and backs and pretty clothes too.



Children, get
your scissors!



Think of the fun you can have with these Kewpie playfellows! The first page of Kewpie Kutouts contains Wag, the chief, Dotty Darling, Dotty Darling's Baby Brother, and clothes for Dotty Darling too.

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and send it to us with your mother's name and address. We will send you by return mail the October *Woman's Home Companion*, postage paid.

**WOMAN'S HOME
COMPANION**

383 Fourth Ave., NEW YORK

OUR YOUNG FOLKS' DEPARTMENT

Conducted by Cousin Sally

Saving the Situation

By Arnot Chester

"WHY, what's the matter, young people?" Mr. Walton inquired, as he stepped from the library, book in hand, out into the piazza where the children were sitting. "From the sound of Rob's voice just now, I should say someone had been rubbing up his fur the wrong way. What's the trouble, Rob?"

"It's just Betty's pure contrariness, Uncle Arthur; she's enough to provoke a saint!" was the angry reply.

"And a saint, as we all know, our esteemed Rob is far from being!" Betty chimed in, with a mischievous glance at her brother; for, like most teases, Betty seldom lost her own temper.

"But what special manifestation of the said contrariness has excited your ire at the present time, my boy?" questioned his uncle with a half-smile.

"Well, it's this way," Rob explained, "we fellows, Charlie and Will Ashly and I, have dug out a cave in the wood like the houses the geography-book says the Aleutian Islanders live in. We've got a ladder to get in and out by, and we've roofed over the top with some boards to make it all snug and shipshape. It's ready now, so we're going to move in; we'll take down some stools and an oil-stove and some pots and things, and we'll make believe we're Aleutian Islanders and have a grand old time, you bet! And here now, Betty says she wants to come to the cave, too. You know, Uncle Arthur, a girl can't expect to do everything a boy does! It stands to reason she'd just be in the way and a spoil-sport and ruin the whole thing!" ended Rob with decision.

"But I wouldn't be a spoil-sport," Betty protested, for the delights of an underground dwelling had taken firm hold upon her imagination. "I'll promise not to ask to go hunting and fishing with you, Rob, if you'll only let me come?" she urged persuasively. "I'll stay in the cave the whole time and cook the game you bring home and keep everything nice and tidy for you boys, like a real Indian squaw. And if there should be an accident while you're out shooting, or anything terrible happened, I'd be able to help, you know."

"Humph," Rob grunted contemptuously, "girls are no sort of good at a pinch. I'd pity the chap that found himself in a corner, if he had to depend on a woman to get him out of it!"

"Then, I can tell you, your pity would probably be wasted, Master Rob," Mr. Walton said dryly. "So far from losing her head in an emergency, woman's wit has proved superior to man's time and time again. As it so happens, only yesterday, in my reading I came across one such instance, which I'll give you now, if you like?"

"Yes, fire ahead, please?" Rob responded.

"Well, then, to begin at the beginning, I must tell you that in the grounds surrounding Edinburgh Castle there is to be seen a curious old cannon which has been honored by having a special name of its own bestowed upon it. 'Mons Meg,' as it is called, dates back to the sixteenth century. It was the handiwork of a blacksmith and his sons who lived in the town of Buchan in Scotland, and was first used by the Scottish king in his operations against the grim, gray castle of Threave, the stronghold of his powerful and rebellious vassal, the Earl of Douglass. The charge of Mons Meg consisted of a peck of gunpowder and a granite ball the weight of a cow, so you may imagine the size of the gun. We are told that the first discharge of this monster produced, as well it might, confusion and dismay among the inmates of Threave Castle. And this effect was naturally greatly increased when the second shot came crashing through the massive walls, making a hole almost as large as a window, and tearing away the right hand of the Countess, as she sat at the table in the banqueting-hall in the act of raising a wine-cup to her lips. After this frightful accident, panic seized the garrison, and they soon surrendered.

"Was the Countess' hand really shot off, Uncle Arthur?" Betty asked.

"Yes, this is said to be a historical fact," Mr. Walton replied; "indeed, as late as 1841 a Mr. Gordan, who rented the island on which Threave Castle stands, discovered an immense granite ball which on

examination was found to be in all respects like those belonging to Mons Meg. And about the same time a workman, employed to clear out some rubbish when repairing the castle, found a massive gold ring marked 'Margaret de Douglass,' which is supposed to be the very ring that was on the Countess' hand when it was shot off in the siege.

"The cannon was afterward taken to Edinburgh, exactly when, I cannot tell you, but it has been in the Castle grounds for many and many a long year.

"So ends the introductory chapter of Mons Meg's history, which I thought would interest you, although it has nothing to do with our story proper, which, by the way, is also a true one.

"The hero of this tale is a certain George Harvey, who afterward became a celebrated London physician. One summer day George, who was then ten years old, was playing with a younger boy in the Castle grounds. Suddenly it struck George that it would be high fun to see what Mons Meg looked like from inside. It wasn't exactly an easy job, but he wriggled into the gun somehow, his companion looking on meanwhile, open-eyed with admiration for his pluck. He crawled along pretty well until he got to the touch-hole, through which he sent forth a shout of triumph to his little friend; and then thinking he had about as much of Mons

catch hold of it, and so be dragged out backward. This was accordingly done. And when George had hooked himself onto the rope, slowly and carefully the men outside pulled him along to fresh air and liberty. But cautiously as it was done the passage over the dust-covered, rusty surface of Mons Meg was anything but an agreeable experience, and George never forgot his prank, nor his mother's cleverness in extricating him from it. You may be sure, Rob, he never undervalued a woman's wit in an emergency," Mr. Walton concluded, turning to his nephew with a smile.

"I say, Bet, it's all right about the cave, you know," Rob announced after a moment's cogitation. "We'll take you along, if you're so bent on going; and maybe, after all, it will be more fun to have you, for as girls go," he conceded graciously, "you're a jolly good sort."

"Oh, Rob, do you really mean it? How splendid it will be," Betty cried.

And her radiant face was full reward to her uncle for his interrupted afternoon's reading.

Letters from Cousins

COUSIN Frances Watson of Nebraska wrote me a letter some time ago, in which she says they have a pony named Maud. Frances loves to ride horseback.

Cousin Myrtle Reed of Pennsylvania thinks it would be fine to have all of the cousins together. She says: "I would like to see all of the cousins together. There would surely be a lot."

Cousin Donald Van Hoozen of Indiana has had trouble with his garden. The chickens got in and ate up almost all of his head lettuce. His beans and peas did real well.

Cousins Alice and Mary Harner, who live on a farm in Pennsylvania, think our motto is fine, and in their letter they say, "We will try and live up to it." I hope that all of my cousins are trying to live up to our motto.

Cousin Gertrude Gallup of New York lives where she can see the Hudson River plainly. For her pets she has two cats and a dog. The cats' names are Billy and Timothy, and the dog's name is Jack.

Cousin Clara Ridgell of Maryland, in a letter she wrote me some time ago, says her father has a sawmill, and she loves to watch him saw up the big logs. Her father also has a farm, and she helps her mother feed the chickens.

Cousin Gladys Hodgdon of New Hampshire, one of the prize-winners in our "What Our School Needs" contest, says in a letter to me: "I have received the flag you sent me. It is very pretty and I like it very much."

Bridget's Secret

By Eugene C. Dolson

SAID Bridget, "I've a note from Tam— The same as comes to woo me; But stuff yer ears wid cotton, mam, The whole ye rade it to me."

Answers to Puzzles

ENIGMATICAL PLANTS: 1, wheat; 2, rice; 3, flax; 4, millet; 5, sugar-cane; 6, corn; 7, timothy; 8, clover.

A Hot Time: The teacher's name was Timothy. The boys' names were: Thomas, Anthony, Theodore, Bartholomew, Horatio.

An Amended Fable

By Ramsey Benson

THE peasant in the fable, as was the fashion of the peasantry in those days, left the care of the poultry wholly to his wife. He couldn't be got so much as to whitewash a chicken-coop.

Now the goose perceived all this, and was nettled by it.

"Why," the fowl asked herself, "should I lay a golden egg for that lazy man? I simply won't do it. I'll just lay my usual egg with a trading stamp, which I know will please my mistress much better."

And the woman, furthermore, though she was just dying to order the new davenport for her front room, had more sense than to kill the goose in order to get the necessary stamps all at once.



"'But I wouldn't be a spoil-sport,' Betty protested"

The Housewife's Letter-Box

Do You Need Help?

Have you been looking for a special recipe for years? Do you need any information on household matters? And do you meet with little problems in the home that you wish someone would solve for you—someone who has had a little more experience than you? Then why not make use of YOUR OWN department and ask the questions which have been troubling you? This department has proved that the spirit of helpfulness is abroad in the land, especially among the women of the farm. That our readers have the mutual desire to help one another is evidenced by the large and prompt response we have had to the questions which are printed here monthly. There is no payment made for contributions to these columns. All answers and inquiries should be addressed to "The Housewife's Letter-Box," Farm and Fireside, Springfield, Ohio. If immediate answer is desired, it will be sent, provided a two-cent stamp is enclosed.

Questions Asked

Will someone please tell me—

- How to pack grapes for winter?
S. E. M., Virginia.
- How to make a cross-stitch star?
MRS. M. B., Wisconsin.
- How to knit honeycomb slippers?
MRS. L. L. J., Virginia.
- How to make buns with dry yeast?
E. G. B., Pennsylvania.
- How to cover a cotton felt mattress?
J. W. L., Nebraska.
- How to make mission stain for furniture?
MRS. J. A. F., New York.
- Why cucumbers shrivel up after they are pickled?
E. J., Illinois.
- How to make quilt-blocks of the letters R and G?
MRS. D. A. K., Michigan.
- How to make dill pickles, such as are put on the market?
MRS. J. C. W., Kansas.
- How to pickle onions and cauliflower to keep for winter use?
MRS. J. B. A., Texas.
- How to make elderberry wine? A recipe for cocoanut pie?
MRS. W. H. E., Pennsylvania.
- How to make portières of Job's-tears or Job's-tears and beads?
MRS. L. D. T., Ohio.
- How to make Spanish pork-chops; also French baked beans?
MISS M. M., Michigan.
- The best way of cleaning dust and smoke from chenille portières?
MRS. S. P. S., Connecticut.
- How to take new-milk stain out of black goods so it will not leave a spot?
MRS. R. D. T., Michigan.
- How to clean white canvas shoes which are so stained that the stains show through the white dressing?
E. P., New York.
- How to make southern corn pone, peach cobbler, beaten biscuits and extra fine raisin pie?
MRS. E. E. K., Pennsylvania.
- How to retain the pungent taste in nasturtium-seeds pickled in the green state for pickles?
W. S., Washington.
- How to dry figs? How to dry grapes? How to can green beans, okra and cabbage without salicylic acid or other injurious preservatives?
X. Y. Z., Mississippi.
- How to remove the stain caused from leaving water stand in a glass water-bottle? Also, how to take a claret-wine stain out of a white table-cloth which has been laundered?
MRS. W. P. P., California.

Questions Answered

- How to Make Hard Icing That Will Not Go to Sugar, for Mrs. P. A. T., Missouri—One and one-half cupfuls of sugar, one-half cupful of sweet cream (quite thick). Boil until thick, and flavor to suit taste.
A. M. K., Michigan.
- Chocolate Icing, for Mrs. R. J., Missouri—One and one-half cupfuls of brown sugar, piece of butter the size of an egg, one-half cupful of sweet milk and two tablespoonfuls of grated chocolate. Boil from fifteen to twenty-five minutes. Flavor with vanilla.
H. S., Ohio.
- To Make a Feather Comfort, for Mrs. C. D. H., Washington—Make a sack of closely woven cotton goods the required size, with a twelve-inch quilted border on three sides. Then put one and one-half pounds of down in the sack, and sew the open end of the sack. The firmer and thinner the cloth, the better.
S. F. C., New York.
- To Prepare Grape-Juice for Market, for Mrs. A. C. W., Kansas—Remove the grapes from the stems, put in a kettle with water enough to cover them, and cook until soft. Strain through a jelly-bag or several thicknesses of cheese-cloth, and to each quart of juice add a cupful of sugar. Boil, and bottle while hot, sealing it air-tight.
C. J., Pennsylvania.
- Potato Salad, for Mrs. H. G., Kansas—Boil six potatoes until they are done. Then mash them, and add two medium-sized onions and salt and pepper to taste. Over this pour a dressing made as follows: One egg beaten until it is light, one teaspoonful of sugar, one-fourth teaspoonful of mustard, four tablespoonfuls of vinegar, two tablespoonfuls of water, one teaspoonful of butter. Boil until thick.
G. A., Texas.

Corn Bread, for Mrs. S. M., Illinois—Mix together one pint of corn-meal, one pint of flour, one pint of sour milk and two well-beaten eggs. Then add one teaspoonful of soda in a little of the sour milk, two tablespoonfuls of sugar and one teaspoonful of melted butter. Bake in a hot oven for twenty minutes.
E. J., Illinois.

How to Cook the Windsor Bean (horse-bean), for W. S., Washington—Soak the beans in water overnight. In the morning the skins will slip off very easily. Put the beans in a baking-dish, season with salt and pepper, and cover with sweet milk. Cover dish, and bake slowly for two hours. Uncover, dot with bits of butter, and bake without the cover until a delicate brown.
C. J., Pennsylvania.

Cucumber Pickles, for Mrs. J. B. A., Texas—To make sweet cucumber pickles, wash the cucumbers, put them into a large jar, add one tablespoonful of salt and one-half teaspoonful of alum. Pour boiling water over them, and the next morning wash them again. Place in fruit-jars. Take two cupfuls of vinegar, one cupful of water, one-half teaspoonful of mustard-seed and three-fourths cupful of white and brown sugar, mixed. Let this mixture come to a boil, and then pour over the cucumbers.
E. M., Wisconsin.

For sour cucumber pickles Mrs. E. L. B. gives the following recipe: Pick cucumbers when from two to three inches long, wipe clean and pack in quart jars as full as you can. Then put in one dessertspoonful of dry mustard, one dessertspoonful of salt, and fill the jar with good cider vinegar, cold. I have put pickles up this way for years and have never lost a jar.

To Prepare Eggplant, for M. C. K., Missouri—Peel and slice the eggplant, and put in salted water from half an hour to two hours, as convenient, before cooking. Have your grease smoking-hot, roll the slices in meal, and fry, peppering to suit the taste, and adding more salt if necessary. The slices should not be too thick, a little thicker than you would slice Irish potatoes for frying is about right. If desired, the slices may be rolled in flour and fried. In frying just put in enough of the eggplant to cover the bottom of the pan, fry brown, and turn.
M. K., Arkansas.

To Can Corn, for Mrs. L. M., Illinois, and D. P., Kentucky—The following recipe for canning corn was published in The Housewife's Letter-Box July 10, 1911: Cut corn from the cob, and pack it in glass fruit-jars, pressing it down closely with a potato-masher. As soon as the juice comes on the top of corn, put on the covers, and screw them only partly on. Put a board (or some hay) in the bottom of a wash-boiler, and stand jars on it. Then pour in cold water to come nearly to covers, and boil two hours for one-quart jars, and three hours for two-quart jars. When done, take jars out, and, while hot, screw the covers on as tightly as possible. When they are cold, screw again. The corn should be kept in a cool, dark place.
MRS. G., Michigan.

To Can Green Peas, for Mrs. J. B. A., Texas—Fill your jars with peas, cover with cold water, and place rubber and cover on. Do not screw covers down tightly. Place the cans in a boiler with cold water two-thirds as high as the cans. Put cover on boiler and set over the fire. Boil one hour each day for three successive days. At the end of each boiling tighten up rings, and at the beginning of each boiling remove clamps or loosen ring. Be sure to place something in the bottom of the boiler to keep the cans from touching the bottom. A board, or some hay, answers the purpose very well. Send to the United States Department of Agriculture, Washington, D. C., and ask for Farmers' Bulletin No. 359, "Canning Vegetables in the Home." N. E. S., New York.

If Mrs. R. A. K., Virginia, will send a stamped and self-addressed envelope to the Editor of The Housewife's Letter-Box, I will tell her where she can get pattern of the sunflower quilt.

If Mrs. H. E. P., New York, will send a stamped and self-addressed envelope to the Editor of The Housewife's Letter-Box, I will tell her where she can get the seed of the Gibraltar onion.

If Mrs. O. P., Arkansas, will look in The Housewife's Letter-Box in the February 10, 1911, issue of FARM AND FIRESIDE, she will find directions for resilvering a mirror.

Will Mrs. N. R., Ohio, who contributed the album quilt-block, please tell Mrs. H. S., Nebraska, the number of blocks she put in her quilt and how many inches across she makes them?

If Mrs. M. J. C., Iowa, will send an addressed and stamped envelope to the Editor of The Housewife's Letter-Box, directions for the zigzag stitch will be sent her.

If Mrs. B. H., Washington, will send a stamped and self-addressed envelope to the Editor of The Housewife's Letter-Box, pattern of the oak-leaf cross-stitch design will be sent her.

Quince Preserves, for E. M., Indiana—Pare quinces, cut into eight sections, and remove cores. Boil in water until tender. Take out the quinces, and for each pound of fruit add a pound of granulated sugar to the water in which they were cooked. When this syrup boils, put in the fruit, and cook until it is transparent. Put in glass jars, and seal while hot. The quince-parings, boiled in just enough water to cover them, mixed with an equal amount of apple-juice, makes excellent jelly.
C. J., Pennsylvania.

Mrs. C. J., Pennsylvania, has sent us the following recipe for potato salad. Boil six medium-sized potatoes, cut into cubes, and with them mix a sliced onion. While the potatoes are still warm, dress with the following: One-fourth pound of bacon cut into small pieces and fried until crisp. Put one tablespoonful of flour into the hot grease, and add one cupful of vinegar and water mixed to the desired strength. Boil until thick, and mix with the potato and onion. This may be served either hot or cold.

Spiced Sweet Apples, for M. C. B., Ohio—Pare, core and quarter the apples, and to seven pounds of fruit take three pounds of sugar, a pint of vinegar, one ounce of stick cinnamon and one-half ounce of whole cloves. Cook the apples in this until tender, and seal in glass jars.
C. J., Pennsylvania.

Cream-Peppermint Candy, for Mrs. B. H., Pennsylvania—Three cupfuls of granulated sugar, three-fourths cupful of cold water. Place over the fire, and boil, without stirring, until it will form a ball when dropped into cold water. Add one-fourth teaspoonful of cream of tartar, and remove from the fire. Let stand five minutes, and add eight drops of oil of peppermint. Beat until a smooth cream is formed. Should it become too hard before it creams, add a very little hot water. Mold into balls, and lay upon waxed paper to harden.
C. J., Pennsylvania.

BOYS! Get This AIR-RIFLE Without Spending One Cent

The Daisy Air-Rifle is a repeater. It shoots 350 times without reloading. It is strong, durable and shoots accurately.

It cultivates trueness of sight and evenness of nerve.

This rifle is harmless. It uses no powder—just air.

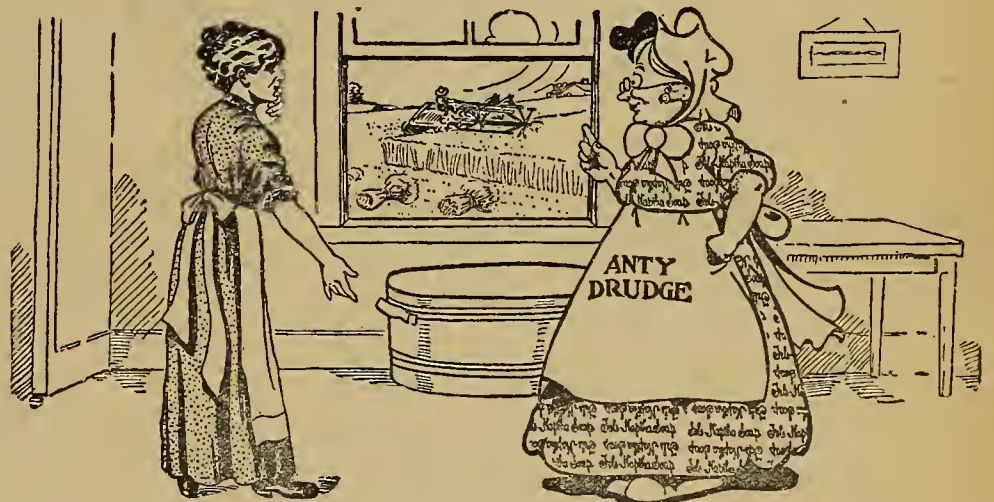
There is no smoke, no noise. Air is plentiful and shot costs but 10c for 1,000.

These fine air-rifles are provided with pistol-grip, true sights, and are so strongly made that it is almost impossible for them to get out of order. Boys have use for it every minute—hunting in the woods, shooting at targets, drilling as soldiers, and innumerable uses that only boys can discover. Every boy will want one of these rifles, and this is an unusual opportunity to get a high-class Air-Rifle. Get your subscriptions at once and send your order in early.

BOYS

Send a postal to FARM AND FIRESIDE to-day. Just say you want an Air-Rifle without having to pay one cent. Thousands of happy boys easily earned them this way.

Write to-day. Address
FARM AND FIRESIDE, Springfield, O.



Anty Drudge to the discouraged

Mrs. F. Armer—"Oh, dear, I hate to think of wash day again, steaming over hot suds from daylight to night!"

Anty Drudge—"Do you still wash that way? Look at Henry out there. Is he cutting the grain with a sickle? Not much! He uses a modern binder. You should use Fels-Naptha Soap. You'll have no boiling and you can do the wash in half the time and have it cleaner, too."

In some countries farmers still plow with a crooked stick. But in America there are all sorts of time-saving, labor-saving, money-saving farm implements.

And there are just as many inventions by which farmers' wives can make their work easier. Washing, for instance, has always been the hardest of work. But the invention of Fels-Naptha Soap has taken all the drudgery even out of this.

Get a cake from the store and try the Fels-Naptha way of washing flannels, colored things, white goods—anything and everything washable. No boiling, no hard rubbing—just cool or lukewarm water. Cuts the time in half; ditto the work.

For full particulars, write Fels-Naptha, Philadelphia

A Fashion Exhibit of the Fall and Winter Styles Which Will Interest Every Woman

With Practical Suggestions and Designs for Your New Clothes, by Grace Margaret Gould

AT THE beginning of each season it is wise for every woman to familiarize herself regarding the new fashion tendencies before she starts making her own clothes. Let her know her own dress needs, and then start in a businesslike, practical way to make for herself what is modish and yet what will suit and fit in with these needs of hers. If she looks over these pages carefully, she will see that plaits are returning, but the old-fashioned plaited skirt, full and flaring, is still just as far behind the times as it has been for many seasons past. The straight line is still the correct line, and though plaits are used, they are all carefully taped on the under side and all made to have the straight effect. Plaited panels are in vogue. Very few dresses will be worn this autumn showing a high-waist effect. The normal waist-line is now considered the most correct.

Long sleeves are much favored, and the sleeve which is put in the normal arm-hole will be used more than the kimono style. Robespierre collars and Directoire revers are fashionable, and belted effects are still seen.

To be fashionably correct this autumn and winter, you must have at least one or two dresses made of two different materials, and surely this is good news for the woman who must make over her last year's clothes. Not only are two different materials used in combination but two different colors. Such materials as serge, the serge showing a decided rib, and smooth cloth, like broadcloth or French flannel, will be used in combination, and many of the new materials show cord effects in up-and-down stripes as well as bayadere.



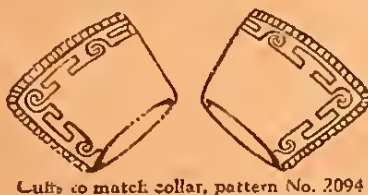
No. 1891—Shirt Waist with Yoke
22 to 46 inch bust. The price of this pattern is ten cents



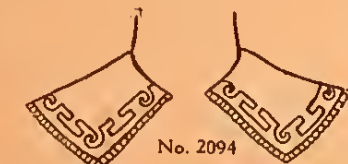
The slit brim is a feature of the new picture hats which are usually trimmed with softly shaded ostrich-plumes



No. 2094—Collar and Cuff Set
Cut in one size only. Pattern, ten cents

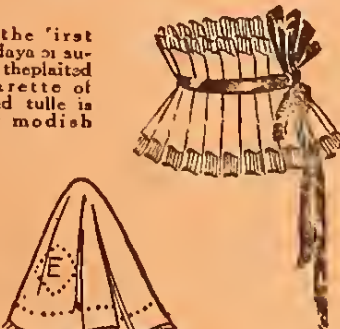


Cuffs to match collar, pattern No. 2094



No. 2094

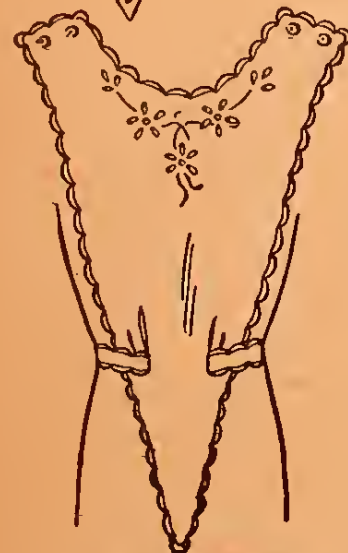
For the first cool days of autumn the plaited collarlette of shaded tulle is very modish



The new initial handkerchiefs are round in shape



The high stock with narrow tab is fashionable. This one of white pique with black button trimming is very smart



The hand-embroidered silk tunic is an attractive addition to a simple dress



No. 2110
No. 2111



No. 2059



No. 2083
No. 2084



No. 2084

THE costume, patterns Nos. 2110 and 2111, was especially designed to suit the needs of the elderly woman. It combines, with comfort, many of the new style features for fall and winter and is adaptable to a number of different materials in either wool or silk weaves

IN COSTUME Nos. 2083 and 2084 is shown a modified ponier which is suitable for both tailored suits and one-piece dresses. In this skirt the two front pieces are fastened to the back portion with braids and buttons to match in either black or a harmonizing color



No. 2110
No. 2111

No. 2110—Waist with Shoulder Drapery

32 to 42 inch bust. Material required for 36-inch bust, two and seven-eighths yards of thirty-six-inch material, one-half yard of contrasting material, and five eighths of a yard of fine net. The price of this waist pattern is ten cents

No. 2111—Six-Gored Skirt with Panel

22 to 32 inch waist. Length of skirt, 41 inches. Material required for 26-inch waist, seven yards of twenty-two-inch material, or four and one-fourth yards of thirty-six-inch material. The price of this gored skirt pattern is ten cents

For every one of the attractive costumes shown on this page there is a ten-cent Woman's Home Companion pattern. Order from: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 203 McClintock Building, Denver, Colorado

No. 2059—Coat with Shawl Collar

32 to 42 inch bust. Material required for medium size, or 36-inch bust, five and one-eighth yards of thirty-six-inch material, three fourths of a yard of contrasting material. Serge and heavy wool mixtures are suitable for this coat. Pattern, ten cents

No. 2083—Long-Sleeved Waist

32 to 44 inch bust. Material for 36-inch bust, two and one-fourth yards of thirty-six-inch material, with one-half yard of lace for collar and cuffs, and one-half yard of net for chemisette. The price of this waist pattern is ten cents

No. 2084—Skirt in Pannier Effect

22 to 34 inch waist. Length of skirt, 41 inches. Material required for 26-inch waist, six and one-half yards of twenty-two-inch material, or four yards of thirty-six-inch material. The price of this skirt pattern in pannier effect is ten cents

The Costumes Illustrated Can Easily be Made from Our Woman's Home Companion Patterns

NEWS about the new hat fashions is always of interest to women. This year the tailored models are small, some of them quite small, in fact. The dress hats, on the other hand, remain large, and many of them show a more or less irregular brim. All the crowns both on tailored and dress hats are lower, and the head sizes remain large.

Just as two or three colors or fabrics are combined in one costume, so they are combined in this season's new hats. White silk moire models with black velvet brim facings are decidedly modish, while other hats of velvet and satin, telt and satin, and fur combined with some soft material are also very fashionable.

The trimmings are unusually simple this season, more depending upon arrangement than on massiveness. A single ostrich-plume, a fancy feathery trimmings for this autumn and winter.

The hat shown in the upper right-hand corner of this page illustrates one of the many ways of using taffeta silk ribbon. Here the loops are arranged to simulate an aigrette and are fastened to the high upstanding brim with a small loop ornament of the ribbon. The hat in the upper left-hand corner of the opposite page is of white felt with black velvet brim facing. A single ostrich-plume, and, by the way, the most fashionable ones are in shaded effects this year, is the only trimming. Satin ostrich-plumes are very much in vogue this season. A double piece of satin, that is, one piece laid on top of another, is shirred through the center and fastened to a velvet-covered wire. The edges are fringed (raveled) for four or five inches to give a soft, natural, ostrich-feather effect.



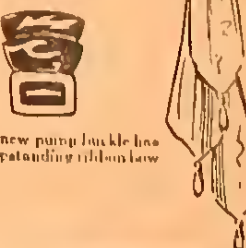
No. 2120—Tucked Waist with Robespierre Collar
32 to 42 inch bust. The price of this pattern is ten cents



The tailored hat of white silk moire with black velvet brim facing is look-ronable trimmed with ribbon aigrette



Satin sash with satin throaters and tassels trimming



The new pump buckle has an upstanding ribbon loop



Black and white suede belt with black insets and buckle



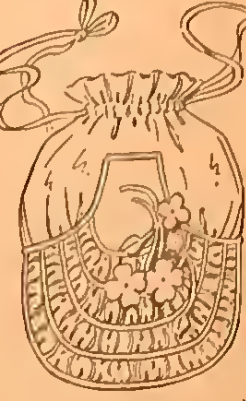
New form collar of white linen with silk tie run through two pairs of eyelets in the collar and tied in a loose knot. The ends are trimmed with tiny buttons



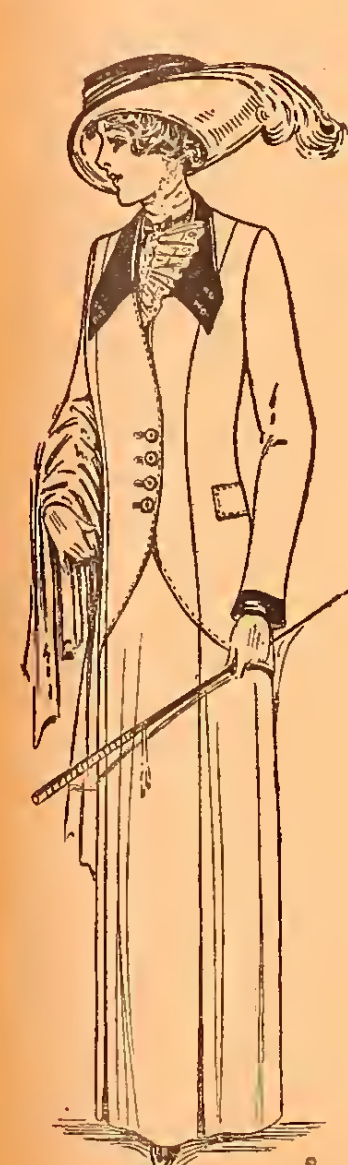
The correct shape for the autumn pocketbook is narrow and long



Black leather belt with white leather strap and two buckles



Party bag of plaid and striped silk for carrying tea and slippers



No. 2085
No. 2002

No. 2085—Semi-Fitted Coat

32 to 44 inch bust. Material required for medium size, or 36-inch bust, two and three-fourths yards of forty-four-inch material, with one-half yard of contrasting material for collar and cuffs. The price of this coat pattern is ten cents

No. 2002—Six-Gored Skirt

22 to 30 waist. Material required for 26-inch waist, four yards of thirty-six-inch material, or two and three-eighths yards of fifty-four-inch material. This skirt is made with foot plaits which give extra width. The price of this pattern, ten cents

No. 1997—Wrapper with Yoke

32 to 44 bust. Material for 36-inch bust, five and one-fourth yards of thirty-six-inch material, with five eighths of a yard of contrasting material twenty-seven inches wide for trimming. The price of this practical wrapper pattern is ten cents



No. 2099
No. 2100

No. 2099—Plaited Waist

32 to 42 bust. Material required for 26-inch bust, two and one-eighth yards of thirty-six-inch material, with one-half yard of contrasting material and three eighths of a yard of lace for yoke. The price of this waist pattern is ten cents

No. 2100—Skirt with Panels

22 to 32 waist. Material required for 26-inch waist, six yards of twenty-four-inch material, or five yards of thirty-six-inch material. The skirt with plaited panels is fashionable this year. The price of this pattern is ten cents



No. 2120—Tucked Waist with Robespierre Collar
32 to 42 inch bust. The price of this pattern is ten cents



No. 1997

It is time to send in your order for the new fall and winter catalogue of Woman's Home Companion patterns. Its price is four cents, and it is filled with designs which will help every woman in selecting her new clothes and in remodeling her old ones. It may be ordered from any of our pattern depots, addresses of which are given on the opposite page



No. 2099
No. 2100

No. 1997

The Gift Club

Jean West
Secretary



THERE'S so much to tell you to-day and so little space to tell it! I think some time I shall have to ask Mr. Quick, our Editor, to let me have a big, whole page so that I can talk to you just as long as I'd like. And let you talk back, by means of your letters! That's the only way that we Club girls can learn to know one another better, isn't it?

Most of our Gift Club girls have had a busy summer helping with the housework, the canning and preserving, and working right out in the fields with the men folks. But still they have found time to squeeze out an hour now and then for our delightful and exceedingly profitable Club work. Just read what Miss Mary C., who lives in Minnesota, writes me:

DEAR MISS WEST:

I hope that not all The Gift Club girls have been as busy as I, or I'm afraid that the Club would be rather deserted this summer. You see, it was this way. Papa was taken sick in May, and there was no one to run the farm and look after the house but me. Of course, I had always helped before, but it was different to have all the responsibility and get right out with the men to see that everything went all right. So please forgive me if I haven't done much for our lovely Club.

"Forgive me if I haven't done much!"

Why, do you know that in spite of her full, busy life this dear girl managed to earn a silver toilet-set and a manicure-set for her dresser and a complete new set of table-silver! Now, I call that pretty fine, and so will you other Gift Club girls, I'm sure.

Here's a new member of The Gift Club who tells me that she is going to start now to earn her Christmas presents through the Club. "It's so fine," she says, "to know that I won't have to worry and scheme at the last moment and wonder how I'm ever going to buy enough presents to go around. There'll be no wondering this year, for now that I've found you and the wonderful Gift Club, I'm not going to let you go!"

There are heaps of such letters in my mail-bag. I'd like to show them all to you. This from a little ten-year-old member will interest you:

Thank you very much for the pretty silver manicure-set and the roller-skates. I just love them, and Mama says I'm lucky to be a Gift Club girl! You have so many nice surprises for us! My chum, Mildred, is going to join, too.

Now that fall is here, you FARM AND FIRESIDE girls will have more time to yourselves. I want you to spend part of this time in The Gift Club, because I know just how much you would enjoy being "one of us." I'm a girl myself, and I know that every girl has a soft spot in her heart for dainty little luxuries, both for herself and for her home. Now, for instance, Miss Not-a-Member, wouldn't you like to have a beautiful gold ring set with two big pearls or an engraved bracelet, or a dainty gold locket and chain with a place for two pictures, or a silver comb, brush and mirror, or a fine leather hand-bag, or new silver and attractive linen for the table, or—but what's the use? I can't begin to describe all the treasures in our Gift Cupboard. The only thing for you to do is to become a member, and then you'll see for yourself what a "magic" Club ours is.

"How can I become a member?" you ask. Just by writing me and saying that you'd like to know how to earn all our splendid gifts for yourself. There are absolutely no dues—nothing but plenty of presents for you and a jolly time earning them! Write me to-day—at once—for our dainty little booklet! You will enjoy reading it, and I'll send it absolutely free!

Jean West

Secretary, The Gift Club,
FARM AND FIRESIDE, Springfield, Ohio.

The Measure of a Girl

By Cora A. Thompson

IF THERE is ever one time more than another when a girl needs mothering, it's when she has reached the end of her rural-school work, and must leave the home nest to go to the high school in the near-by town or city. It is then the mother is shaken with vague fears. All girls have impulses which puzzle and frighten their mothers. The father does not understand and many times does not care over much.

If I could have voice with every country girl when entering high school, I would say, make the most of your opportunity. Remember, you are royally born, you country maidens. Don't sell your birthright for a mess of city pottage. By your conduct you're measured. Determine in the beginning that not one moment of your time shall go to waste. Make every power within you respond to its best. True education draws from a noble mind every latent force.

The high school is the gateway through which you pass to success or failure. Right education is not how much we learn, but what we learn. Many great lessons you will learn from experience. The first step in your high-school education should be character-building. Character is the foundation of your future. Work is nature's provision for happiness, and work and dig and delve you must, if you succeed. You must make Industry and Nature your teachers also, for you must broaden your education outside of books and schoolroom. No girl is properly educated to-day who cannot run a home on the same business principles as those on which her father runs his farm. You must get out of the rut of all book-learning. It takes practical sense practically demonstrated in your curriculum to make a rounded-out education. The girl is expected, at present, to learn a twofold part; this is not as it should be, but that's another story. Under present conditions the girl is obliged to leave high school a polished parrot, without the ability to keep a house or to be a wage-earner. This is not the fault of the girl, but the faulty school system. Dear girls, you must learn the dignity of work, the duty and privilege of honest toil. If education does not equip a girl to be a wage-earner and home-maker, there's something wrong with that education.

Don't let your high-school learning lift you above your parents' language. Don't be worried because father's English is not correct, or that his clothing smells of the soil when your classmates visit you. And it isn't necessary for you to correct mother for wiping the perspiration from off her throbbing brow with the corner of her apron when she leaves the hot kitchen for a moment, where she's preparing a toothsome repast for you and your grammatical chums.

Dear girls, you need mothering so. I love all of you because I have high-school girls of my own. I am writing these lines to you amidst the stress of

homely duties and constant interruptions. Practising that which I preach, to be happy we must work, and we must never be too busy to help one another. I want all girls to have a good time. But there are different ways of having a good time. Beautify your minds by seeking and associating with people wiser than yourselves, people who do not gossip. Be jolly and youthful, but careful. You need fun and sunshine, but have clean fun, a strong, healthy, life-giving fun.

Dress neatly, care for the little niceties of your toilet, they mean so much. Remember, cleanliness is next to godliness. Don't wear false hair, rats or other shams. Remember, it has taken us long years to evolve away from our ugly ancestors; don't undo the work of centuries by a moment of folly. Make others ashamed of their shams by a sane mind and honest purpose. Be careful how you use perfume, just a faint,



elusive suggestion of sweet smell. Be pleasant by keeping your mind untainted by evil thoughts. Smile! Be polite and deferential to older people. Remember, by your acts they are measuring you.

Perhaps you drive to and fro. You have to keep your horse in a livery barn with others. I cannot make it emphatic enough what your conduct should be in caring for your horse. Hurry! The livery barn is no place for a self-respecting girl to linger. Have no conversations at this place; it's harmful and unladylike. If your country home is too far to drive to and fro, and you are obliged to stay in town overnight, don't go out on the street at night alone and unprotected; you can't afford it. Don't hang around the post-office lobby and giggle and flirt; it injures your reputation. Don't go down to the depot to see the trains come in. I do not want to say all men are bad, yet there are many strangers to be careful

of, and who would while away the idle hour with a foolish girl to her own injury. Don't do it. Don't talk slang or chew gum, especially in public places. Be careful how you judge; be lenient with another's mistakes. Speak kindly of and to all. Keep your personality pure; do not defile it by a freedom of manner. Familiarity takes the polish from the jewel. If a classmate gives you her confidence, keep it sacred; but for yourself have no confidence save your mother. Dear girls, Mother was once a girl herself and made her little mistakes and can tell you all about it. The road is very much the same which she has passed over, and she can help you over the rough places; mother and daughter should be comrades.

I know a bright young girl whose mother tried to tell some important truths a girl should know, when she said, "Now, Mother, you just hush up; I don't want to hear anything about it, and if I do, I can find out from someone besides you." Poor deluded girl, I tremble for her future. Another girl is deceiving her mother. The trusting mother thinks she has her daughter's confidence, and all the time the girl is flirting, idling her time along the road to walk and talk with the boys, writes silly notes and many other silly things seemingly harmless, but she is cheating herself, her mother, her teacher, and by and by it will bring her the blush of shame. Dear girls, DON'T! You can't afford it. A girl is not measured by her beauty, her popularity, her wit, her beaux. Ah, no. By her conduct. What is education? Character. Are you building yours with concrete blocks of honor, industry, truth, high and noble purpose?

Are you educating yourself to make a noble teacher, an honorable citizen, an honest employee? Greatest of all, would you make an upright, God-fearing, virtuous wife and mother? In the world's measure, would you come up to these standards?

You are living in a new era. Work and education are to go hand in hand. Your education will never be complete; education, work and life travel together. The work of the world must be done; do your part like a woman. You belong to this new régime of things, which with slow but insidious force is pushing the old aside. It will fit men and women to earn their living and at the same time to cultivate their minds. Nobody can give you education, it is your own growth. To grow you must work, or your development will be lopsided and you'll be a cripple. Do not set too much store on basket-ball and athletic sports. Home is a fine gymnasium; hustle up and milk the cows, wash and iron your shirt-waists, make your parents' work lighter and their hearts happier by a little help. You'll be better morally, mentally and physically for it. When you're measured, dear country girl, do not be found wanting.

What Hope College Sent to Hilltop Farm

By Henry Wolfe

"I'VE had the time of my life. At home folks look down on farming but here everybody's keen for it," said Andrews to me after the box packing of the apples was over and he was ready to leave.

Mann and I had been to the summer school at Hope Agricultural College, and had come to Hilltop Farm boiling over with the enthusiasm there acquired. Everybody at Hope College wanted to be a farmer, professors and students alike. They all thought it the best profession in the world. We had thoroughly believed this too, and had preached that doctrine morning, noon and night since our arrival at Hilltop.

Mr. West had been a farmer for fifty years, and he was glad to have us talk so enthusiastically of his life-work. Mrs. West and the girls liked it too, for they had been brought up on the place and knew every detail of farming, from milking cows to packing apples. Our approval of the work was an approval of them. Of course they liked it, and of course we got extra mince pies and could call on them for help in the packing-house when we needed it. Mann and I stirred up everyone on the place to better work, to more of it and to a belief in its future. The boys that were helping to pick the apples then and there applied for jobs for next year. They wanted to be with a crowd that worked for the love of the thing, that laughed at the daily worries. When the cow kicked over the pail of milk that careful Will had just persuaded her to give, Mann instantly volunteered to tackle the job next time. What Mann knew about milking wasn't enough to speak of, but it was the spirit of that farm to try

anything, and to keep things going ahead.

Mann was young and enthusiastic. He would have been the life of a crowd anywhere, but there was something deeper and stronger than mere enthusiasm that he brought to that Hilltop. And that something he had found at Hope College.

Everyone has heard that the man who makes two blades of grass grow where but one grew before is doing the real work of the world. And this belief was the corner-stone of Hope College. Everyone talked it, everyone believed it, and everyone determined to accomplish it on his own little farm, in his own way some day. Can you imagine anything that would so certainly make for success?

But the faculty did not stop with the belief. They taught us how this wonderful work could be done. They told us in simple, every-day language how we must set about these tasks.

You have heard of the boys' corn club and of the wonderful crop that one of the boys, Jerry Moore, raised on a single acre of land. Perhaps this didn't interest you because it was so far beyond any yield of which you had ever heard. Quite possibly it was ten times that which you were getting from your own field, and you didn't half believe it.

Did you ever take the trouble to figure out with pencil and paper just what a corn crop should be?

If the hills are three and a half feet apart, there would be (in round numbers) 3,500 of them. Each hill should have three stalks, and each stalk three ears. Again in round numbers, this would give 30,000 ears to each acre of land. Now, a moderate ear of dent corn weighs ten

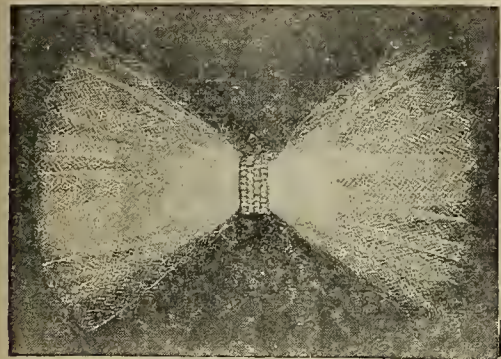
ounces. Thus we have 300,000 ounces, or 18,750 pounds of corn. It takes about seventy pounds of dried corn on the cob to make a bushel. The yield, therefore, should be 270 bushels of corn per acre.

What does this make you think of your yield of twenty-seven bushels per acre? How do you like to think that you raise only one kernel where you should have ten? Doesn't this little problem in arithmetic make you sit up and think? Do you want to believe that fifteen-year-old Jerry Moore can do what you can't? I don't. And as soon as I heard that story told by the professor of field crops at Hope College I determined to take a try at that record myself, some day. Why, Jerry Moore fell more than fifty bushels below a perfect stand of corn! Are you willing to let that stand for a record of this country?

I am not going to try to tell you what we were taught about methods. You can find that out in books and bulletins. The best thing about the college was that it made us sure that farming is the best work in the world.

If you want to keep your boy on the old farm, send him where he will be in touch with men who love farming with all their hearts, men who have given clever brains to solve problems of dairy, field and orchard. They will make these problems so alive with interest for the boy and the promise of success so sure that no lure of the city can charm him away. Send him to an agricultural college for the full course if you can. If that costs too much, send him to the summer school or the winter short course, if you have to sell your best cow to get the money.

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The Peripatetic Farmers

[CONTINUED FROM PAGE 16]

in the neighborhood with whom she might fraternize. She wanted a woman friend, one who loved the farm and its activities as she loved them. A woman's husband, no matter how much he may be to her, can never quite fill a woman's need of another woman's companionship. She had hoped too much from this strange woman's friendship, and now to renounce her took on for Mary Baird some of the aspects of a tragedy.

"If she had tried to farm, though even bunglingly," wailed Mary Baird to herself, "I'd have had hopes of her, but to reproduce her town house and town existence out here in the deep country, and sit down to live up her substance while she waits—waits for what? And I had such hopes of her!"

One scorching summer day Mary Baird heard a small, sweet voice calling outside her screened kitchen.

"Please, Mrs. Baird, if I may trouble you, I'd like an incubator lot of eggs to-morrow morning, and if you'll help me get them started off, I'll be so much obliged."

So it came that next morning Mary Baird and the San Francisco widow were tête-à-tête over an incubator in the widow's kitchen. When that machine was properly adjusted to its maternal duties, the widow led the way to her coziest parlor corner.

"I want to have a real talk with you, Mrs. Baird," she began. (Did she, too, feel the need of a confidante?) "I'm not going to insult you by asking you to keep this secret—you are not the gabbling kind—"

"If it is anything," interrupted Mary Baird hastily, "perhaps you ought not to tell me—I'd rather not know, really."

"I just have to tell you," said the woman desperately, "because I—I want your sympathy, and I need your help. I must make a success of this farm. Every cent I have is tied up here, and I must make it pay. When my father died—I'm wearing black for him—"

"Not for your husband? We thought—" cried Mary Baird in surprise.

"I know," went on the widow hurriedly, "that is why I am telling you this. I'm not wearing black for him—he is gone—away—for a while—five years!"

"Oh!" gasped her listener understandingly. The widow wiped her lips. Mary Baird curiously enough no longer felt affronted by the elaborate display of black-bordered linen. The widow wiped her thin, twitching nostrils, while Mary waited, studying the floor rug.

"My part of my father's estate," the widow resumed presently, "I have put into this farm, and I must make a success of it! A man that comes back has no place in the city. Everybody suspects him. Everybody is ready to give him a kick. Even should he start anew in another city, there are always the same old temptations lying in wait for him. So I took my money and bought this farm. The day he gets out, I'll meet him in the city. Our neighbors here may think I've gone away and got married. I'd like them to think that. It would make it easier for him, don't you think? At any rate, he will have this farm to come to. It will be a new start for him. Can't you see I just must make a success of this farm?"

"I see," said Mary Baird, and the compassion in her voice encouraged the pseudo-widow to continue:

"All my people—I had to get away from them, they nagged me so—they think I ought to give him up. The law makes divorce so easy in my case. They think I ought to give him up, and—and forget him. But how can a woman, once she has borne a man's child, forget him—even though she had no conscious part in his wrong-doing?"

As in a flashlight, Mary Baird saw the days and days of weary wrangling with her people which that woman had undergone, and all the traditions which she had defied, and all the friends she had repudiated, and all the ease she had foregone, and all the chances she was hazarding, all for the ultimate saving of that man who had gone away for five years!

"Do you think, Mrs. Baird, that a woman has any right to be self-righteous—hold herself guiltless of the sins of those nearest to her? How I've tortured myself with that thought all the nights! Maybe, if I had done more, been more, he never would have gone wrong."

"I do not know," said Mary Baird. There are heights and depths of suffering which such simple, strong, secure souls as Mary Baird seem never to have to tread; but this other woman, so weakly feminine, so fragile, so daintily shod for the jagged rocks—she had walked the cañon deeps, but she had also trod the white heights of moral uplift and decision.

"Do you think other people have any right to say just how long a wife shall cling to her husband?"

"Oh, my God, no!" cried Mary Baird with a half-sob. These questions were becoming too poignant. At the moment, she would have given anything to escape from this woman's story, this unfolding of another's tragedy.

"I just must make a success of this farm, however hard it is for me. Don't you see what a chance it means for him, when he comes out?"

"I see," said Mary Baird. "It is the best possible chance. But you?"

"It isn't easy for me," said the widow hastily, "I get so lonely and discouraged, and I am so incompetent. But I think of him. Everything I'm doing is for him. Even my music, I try to keep it up for his sake. He loved it so. I love to dream how it will be when he comes, so secure and free here from temptation. With our music and books and a living guaranteed and outdoor life—don't you think I am providing in the best way for his future?"

Her face shone with the light of utter renunciation, with the rapt exaltation of her

complete consecration to her hard, self-imposed duty, and at last Mary Baird understood and appreciated her new neighbor. Here was a woman of unexpected heroic fiber, a woman she could love, a woman she could help! It was for both women one of those rare, ecstatic moments of complete understanding, complete sympathy.

"My dear," said Mary Baird, with a quick little gesture of affection, "my dear, you are doing the finest thing in the world! Let me help you. We'll make this farm pay, or Mary Baird doesn't know how to farm!"

After a few months, while Mary Baird's husband watched with some amusement, but without jealousy, the growing friendship between the two women farmers, he spoke.

"It seems to a mere man from afar," he teased, "that you two farmers have framed up a partnership."

"Oh, no," explained Mary. "You see, it is more interesting and instructive for us to work together when we can. One day she helps me with the chicken-houses, and the next I help her with something. When we can't work together, we run races to see who gets her work done first, or best. I'm ahead just now on Cassabas, but I do believe she is going to beat me on the tomato crop. You see we are a great incentive to each other."

"That method ought to work fine—for her," responded her husband dryly. "Her farm is looking well, I notice. I bet a cooky you are doing all her head-work, eh?"

"Maybe," admitted Mary Baird smiling. "Maybe. Who wouldn't for such a nice little neighbor?"

Some Fall Recipes

Pumpkin Preserves—Remove all skin and pulp from a medium-sized pumpkin, and cut it into small cubes. For every pound of pumpkin use three fourths of a pound of sugar. Put pumpkin and sugar in layers, in a kettle, adding slices of three lemons to the pumpkin. Let them stand until the next day, then cook slowly until the pumpkin is tender, but not mushy. The syrup should be a little thinner than honey. Seal in jars while hot.

Apricot Marmalade—Select a fine grade of sun-dried fruit, pick over, and wash, then soak in cold water for twenty-four hours. Drain, weigh, and for each pound allow three fourths of a pound of sugar. To four pounds of fruit add the sugar and one scant cupful of water, and cook slowly until reduced to a marmalade, stirring frequently.

Cabbage-and-Beet Suet—An excellent cabbage-and-beet relish may be made after the vegetables are gathered late in the fall by the following directions: Two cupfuls of beet, boiled until tender and chopped fine, three cupfuls of raw cabbage, chopped fine, one cupful of grated horseradish, one cupful of sugar, one teaspoonful of white pepper and two teaspoonfuls of salt. Mix all of the ingredients together, and add enough vinegar to make the mixture of the right consistency. Seal in glass sealing-jars. Excellent with fresh meat and sausage.
ELIZABETH CLARKE HARDY.

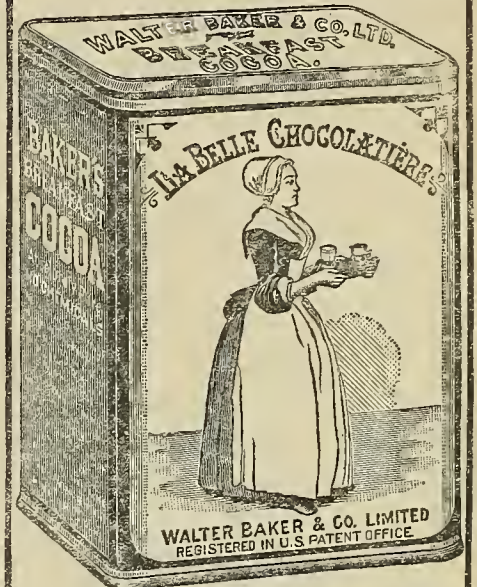
Spiced Plums—Make a syrup, allowing one pound of sugar to one of plums, and to every three pounds of sugar a pint of vinegar. Allow one ounce, each, of ground cinnamon, cloves, mace and allspice to a peck of plums. Prick the plums, add the spices to the syrup, and pour boiling over the plums. Let these stand three days, then skim them out, and boil down the syrup until it is quite thick, and pour hot over the plums in the jar in which they are to be kept. Cover closely.

Grape Juice—Wash the grapes, pick from stems, crush, and put into a preserving-kettle. Do not use any water. Cook slowly until tender. Pour into a cheesecloth jelly-bag, tie the top of bag with stout string, and hang up to drip overnight. It should be allowed to drip in a place entirely free from drafts, for if it cools too quickly all the juice will not be obtained. To every quart of juice allow three quarters of a cupful of sugar. Return to kettle, and boil five minutes. Bottle scalding-hot. After adjusting stoppers, dip in melted paraffin.

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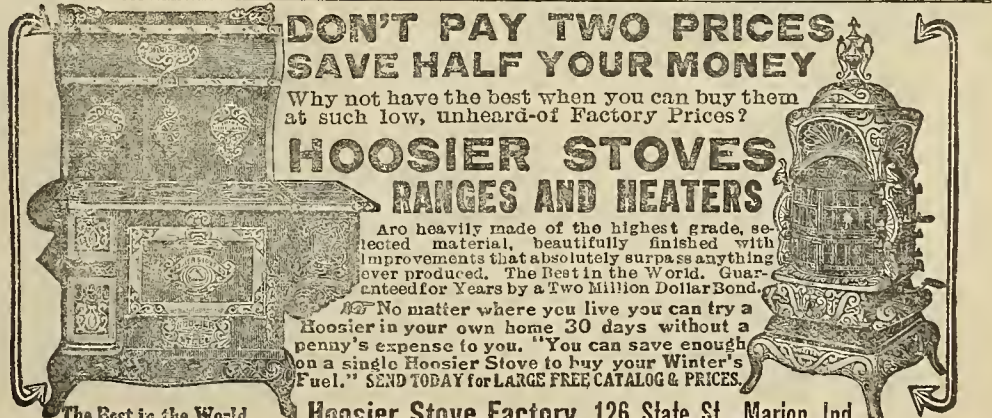
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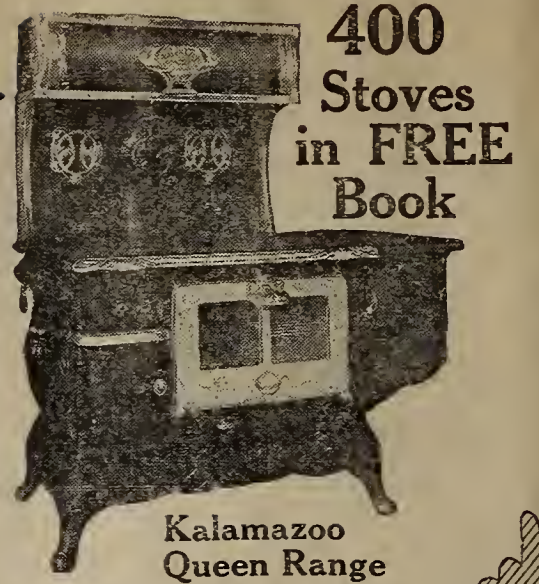
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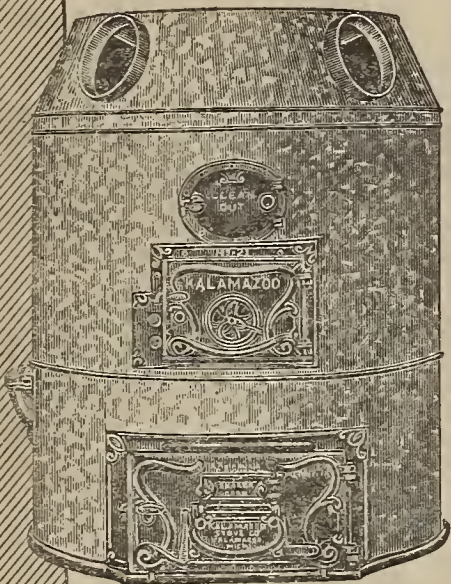
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