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The National Farm Paper - Twice a Month

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Western Edition



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FARM *and* FIRESIDE

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No. 13

Wake County's Holiday

A Good Way to Increase Pride in Our Country Schools

By P. T. HINES

EVERYBODY has heard about cities having "Paint-up and Clean-up" weeks, but who has ever heard of a county's starting out to paint and clean up every school building within its borders in one day? Wake County, North Carolina, decided that this could be done, and did it; and the way it was done may well be adopted by other counties in North Carolina as well as counties in other States.

This paint-up day was made possible by the co-operation of the county superintendent of education, D. F. Giles, the patrons of the schools, and the Wake County members of the Junior Order. The Junior Order members said that if someone would furnish the paint they would spread it. Mr. Giles said that the county would furnish one half the paint if the other half could be secured, and as this looked good to the school patrons and the committeemen of the various schools of the county, they either subscribed the necessary cash or took the amount from the school appropriations.

The original plan was merely to paint the school buildings, but as it developed it was decided to make this day a general county holiday. Men, women, and children gathered at the schools, and the school grounds and buildings were given a general clean-up. Dr. J. Y. Joyner, state superintendent of education; D. F. Giles, county superintendent; W. A. Cooper, state councilor of the Junior Order; L. J. Sears, chairman of the County Board of Education, and a number of other citizens of Raleigh, the state capital and county seat, donned overalls and visited the various schools and helped to spread the paint. These gentlemen are not expert painters, and many people had doubts as to whether they got more paint on themselves or the schoolhouses, but there was no doubt of their interest and enthusiasm, for it was they who instigated the plan.

Dinner was served on the school grounds in picnic style at the various schools visited by these officials of the State and county. The dinners were such as can only be cooked by country housewives; and besides the dinners prepared by these good women there were barbecues, Brunswick stews, etc., and friends of Superintendent Giles and the rest of the party said that they each ate not less than three dinners. And who can blame them?

This movement did not stop with the painting of the buildings in many communities. After the school patrons saw how much better paint made things look, they bought paint and painted the inside of the buildings also. So great was the awakening of community pride that in a few instances land near school buildings was also cleaned off and made presentable as well as the school grounds.

Four hundred and fifty painters, divided into squads of from five to sixteen, wielded brushes during the day. Seven hundred gallons of paint were used, and the wonder of the plan is that the whole county worked together—not a building escaping the coat of white except one or two buildings of brick. Another remarkable thing about the plan was the low cost of painting, which averaged \$28 a building.

Everyone in the communities was interested in the plan, as is shown by the fact that on one of the school buildings a boy of twelve was painting away with the best



Shrubbery, trees, and attractive surroundings are as much a part of the home as the building itself

of them, and on the same building a man of eighty-four was spreading paint with a vim equal to that of the twelve-year-old.

This movement is going to have a lasting effect in Wake County. The patrons now have more pride in their schools than ever seemed possible to arouse.

Yards of Beauty

By MRS. J. L. NESBITT

I WAS once called upon to plan the landscape gardening around a millionaire's home, and the only stipulation he made was that I must make use of the native wild shrubs. Nor was this a difficult restriction. The stately elder, the sweet brier, the modest wild rose, the unassuming pokeberry, the clinging bittersweet, the ever-gracious wild grape, the ivy, sumac, dogwood, maple ash—all these and

and not seriously affected by pests. This applies also to other shrubbery. In selecting trees consider the matter of litter and the shedding of leaves. Some trees, such as catalpas, are beautiful, and have many desirable qualities, but the flowers which they shed litter the ground and will cause stains on clothing that are difficult to remove. While a great many interesting and valuable points about nursery stock may be learned from books and the pamphlets of nursery companies, observation is equally important. Consider the ultimate size of the trees which you plant. Oaks, elms, and other large trees should not be planted near the house, as in time they will shut out too much light, unless pruned heavily, which will destroy their beauty.

The improvement of one's home grounds is usually as contagious as idle gossip, once it is well under way. It is much more interesting and worthy of respect. I feel that the exterior of my own home does not belong to me alone. I have a moral responsibility to add to the attractiveness of the neighborhood in which I live, and therefore my grounds in part at least belong to the owner of every eye that gazes upon it. The architecture of the house, the decoration of the grounds, the walks, fences, and general surroundings are each man's contribution to his community. It is one way in which we can give pleasure and enjoyment to other people.

Whether the house is a log cabin or a mansion, it is, after all, a home, a place of love and adoration. It should be the most restful place on earth. To make it so costs mostly thought and play. The tenant's problem is somewhat different, but a few seeds will make a profusion of pretty plants some of which may possibly be moved. But the attractiveness even of a tenant's home is not a quality that easily dies. I have observed that landowners desire the neat and efficient tenant. Plants and flowers about the house show ideals that go with character. A pretty yard may be the means of attracting congenial people and making friends.



Every schoolhouse in the county received a coat of paint and a general clean-up between sun-up and sun-down. Some of the men in overalls are state officials

"In-and-In" Breeding

Rearing Six Generations of Chickens with No New Blood

By M. RUSSELL JAMES

VIGOR, productiveness, and uniformity are the three cardinal points at which I, in common with others, am aiming in my utility poultry-breeding operations. But in working for the first two we are in danger of overlooking the importance of the third quality—uniformity. This does not so much matter in the family flock, but in commercial flocks uniformity is of equal value with vigor and productiveness. I find that a flock may be vigorous and productive yet fail in hitting the high places in market returns through lack of uniformity in its product. When a breeder "shies" at the rock of inbreeding, the important part of uniformity is sacrificed by the constant introduction of new blood to insure vigor.

Isn't it a singular fact that while for centuries the scientific principles of stock-breeding have been studied and practiced by poultry fanciers in their work of originating and perfecting breeds, utility poultry-breeding is still largely governed by "say so," and at once takes fright at the very word "inbreeding." Yet all who are acquainted with the facts know that all of our best breeds of domestic stock that have been highly developed along special lines are the results of intelligent inbreeding.

On every hand we hear, "Common fowls run out." And small wonder they "run out" when ordinary farm and back-yard poultry flocks are considered. For, as a rule, we find promiscuous breeding where all sorts and conditions of fowls run together, and the flock soon becomes a mongrel mixture. Any lack of stamina in pure-bred fowls is not due to inbreeding as commonly charged, but to the fancier's having sacrificed the important point of vigor in his breeding stock in his attempt to secure color, carriage, markings, and unnatural conformation. Let me cite an example furnished by a recent letter I received on the subject of inbreeding. Dr. Foreman of Illinois furnished me his experience from the standpoint of the fancier:

"I have been breeding exclusively the Partridge Plymouth Rock, a bird that might readily be believed would be hard to breed true to standard requirements. The colors are such that there are a dozen different ways by which it might be rendered 'off' and virtually spoil the plumage. In its proper form I think it is the most beautiful of any of our domestic fowls. I began five years ago with eggs from the strain of Noftzger, the originator of the variety. I have religiously excluded every other fowl from my yard, using only my own birds of common blood as breeders. I have no hesitation in saying they are better and more vigorous to-day than when I began. I have had other breeders of the variety want to exchange males with me; but invariably I tell them 'nothing doing,' that no matter how good their birds are I would not put one of them among my flock under any consideration. Notwithstanding I have bred always 'in and in,' I have no trouble with the health or stamina or size of my fowls. Me for in-and-in breeding all the time."

Vigor is Key Word to Success

THE experience of Dr. Foreman along exhibition-stock lines is almost exactly a counterpart of my own with utility stock. My start in this experiment of securing uniformity in the commercial flock was made by mating a S. C. White Leghorn cock with seven of his pullet daughters. From the first hatch of this mating, brought off in January, 1912, the best cockerel and four of the best pullets were selected, and mated the following December. The chicks from this mating were fine healthy birds, and were used to make up the general flock. As one of the four original pullets developed into a much finer hen than any of the other three, the next season this hen was mated with the same male bird. From this mating nine of their daughters were selected, and mated the following season with their sire, now in his third year. From this mating one cockerel, the counterpart of his sire, was selected and used to replace his sire in the breeding pen with the nine females. In choosing the birds for the first inbred mating, great vigor was my first requirement, and there has been no deterioration and absolutely no sickness—not even a cold or mopey case in any of the descendants. Each season's hatch has shown a

satisfactory improvement in uniformity. The nine females used the last two seasons as breeders for this test averaged more than 200 eggs each in their pullet year, and 139 eggs each during the first nine months at this writing of their second year. Twenty-four of their daughters from an uncultured incubator hatch brought off April 11, 1916, had laid an average of eight eggs each when six months from the shell. The first egg was laid August 29th. Four of the lot, however, did not produce until after they were six months old. The cockerel from the first inbred mating was used as a breeder in this test for three years, the eggs from his pen each season being exceptionally high in fertility and hatchability.

My experience and observation both show that selection is an all-important point in all breeding, but doubly important when inbreeding is practiced. The law governing inbreeding is that dominant qualities in the parents are intensified in the offspring. If



Pullets "in-and-in" bred for five years. Began laying when 4½ months old, made flock average of more than 200 eggs

such qualities in both parents are good and desirable ones, inbreeding makes for improvement in the stock and is the method by which special qualities desired can become fixed and reliable in a strain of fowl. But if the parents are defective and weak, with bad traits predominating, the young will be more defective and worthless than their parents, and inbreeding means going from bad to worse by the shortest route.

When practicing inbreeding for utility purposes, it is not enough that a bird be in perfect health when mated. It should never have been ailing in the least degree. That it has at one time succumbed to some ailment or disease indicates a weakness. The experienced utility poultry breeder knows that birds which conform nearest to the standard-breed type in shape and size are the most productive and profitable fowls; also, that early maturity and great activity are the most reliable signs of vigor and productiveness.

My next step is to test the females of the birds selected, by either trap-nesting or individual pens, as to the sort of eggs produced. If the hen lays abnormal eggs her fine points should not save her from the discard. Incidentally it may be said that the shell of the egg is the best index of the fitness of the hen's condition and that of her egg organs.



Representative female closely inbred. Used as a breeder for three years



Two-year-old inbred cock (in molt), father of pullets pictured above

If the foregoing points are held to in selecting the breeding stock, in-and-in breeding may be practiced with no ill effects. Instead, the commercial poultryman can build up a strain that he can depend upon for uniform results, so that at the beginning of each hatching season he will know just where he stands—just what kind of birds he will get, just when they will begin to lay, and just what sort of eggs they will produce.

In the breeding test here described, the uniformity of the inbred stock is sufficiently well established to select the finest cockerels to head distinct families for line-breeding. By this means the blood lines may be kept distinct while the strain remains the same, and any possible impairment from long-continued in-and-in breeding obviated.

Alfalfa for Horses

By JOHN COLEMAN

ALFAFA hay may be fed to work horses as well as growing horses if it is fed properly, according to Dr. C. W. McCampbell, secretary of the Kansas State Live Stock Registry Board. In order to be fed successfully, alfalfa must be cut at the proper time for horse-feeding purposes and must be fed as a concentrate rather than a roughage.

The method practiced by most of those who have fed alfalfa to work horses in the past, and even those who feed it at the present, has been to fill the manger morning, noon, and night, thus allowing the horses to eat all they wished. Prairie hay has been fed in this way without any serious results. As alfalfa hay is very palatable, horses eat a very large amount, and the results are soft, windy horses that are puffed in the hocks, stocked in the legs, and unable to stand hard work.

"The trouble," explained Dr. McCampbell, "is with the method of feeding and not with the alfalfa hay. It has been said that the proper time to begin cutting alfalfa hay is when the field is about one tenth in bloom. Cutting at such a time makes very good hay for cattle, but such hay is too 'washy' for horses at hard work. To make hay suitable for horses at hard work, the alfalfa hay must be allowed to get rather mature before cutting; in fact, the field should be in full bloom before the mower is started. The hay should then be properly cured and stacked. Special care must be taken to prevent spoiling or molding, as moldy, musty, or dusty hay of any kind is injurious to horses.

"After the hay has been cut at the right time, and properly cared for, the next consideration is the amount to be fed daily. Probably the most important cause of so much trouble with alfalfa hay has been overfeeding. On the average, one pound of alfalfa hay contains more digestible protein than one pound of shelled corn, and is fairly rich in carbohydrates and fats. A person would not think of feeding a 1,200-pound work horse a bushel (56 pounds) of shelled corn in a day, yet by giving the same horse all the alfalfa hay he will eat, as large or a larger amount of digestible protein will be fed daily than is contained in a bushel of shelled corn.

"When large amounts of alfalfa are fed, the horse receives an excessive amount of highly nitrogenous material. This not only overworks the kidneys, but also causes irritation, which may result in a chronic inflammatory condition of the kidneys.

"Another effect of overfeeding with alfalfa is a sort of cloying of the whole system, resulting in impaired nutrition, swelling of the legs and hocks, softness, excessive sweating, and impaired respiration.

"As to the amount to be fed, experience seems to indicate that one and one-fifth pounds to a hundred pounds of live-weight is about the maximum amount for work horses. Horses receiving alfalfa hay will relish limited amounts of prairie, timothy, or cane hay, straw or corn fodder.

"Because of its high proportion of digestible protein, alfalfa balances very well with corn, and these two feeds make the most economical ration the persons who grow alfalfa can feed, and probably as satisfactory as any."

If a person is buying on the market, says Dr. McCampbell, the hay showing the brightest green color is often the poorest for work horses, because it has been cut too green and will be "washy." If a person will buy average, well-cured, clean alfalfa hay, he will be able to reduce the cost of feed by substituting alfalfa hay for part of the prairie or timothy hay. He may substitute one pound of alfalfa hay for one and one-half to two pounds of prairie or timothy hay, until from one third to one half of the prairie or timothy hay has been replaced by alfalfa hay. The amount used depends on the quality of the alfalfa substituted for the other hay.

How to Keep Well

Methods That are Health Insurance for the Family

By ALICE PRESTON MILLS



Well-drained roads and yards, and kerosene will keep the mosquitoes under control

THE health of the family is endangered if the sewage, the garbage, and the rubbish of the farm are allowed to accumulate. Such waste products endanger health because they become the breeding grounds of disease germs of many kinds.

The excrement of the human body, which composes the greater part of the sewage of the farm home, is the most dangerous of the waste products. This danger will be lessened if a chamber of brick or concrete is built beneath the seat of the outdoor closet instead of the usual pit, and if pails of galvanized iron are placed under the openings in the seat. Access to the rear of the chamber from the outside may be made by means of a close-fitting door.

If the seats in the closet are kept covered the flies will be kept away. The contents of the pails in the closet should be buried far enough away from the house and the family water supply to prevent contamination by drainage. Burying the excrement under a foot of earth is sufficient.

The slop jars used in the home should be washed with hot water and soap every day. The water pitcher should be scalded once a week with a solution of common soda.

Disposing of the garbage of the farm is not as much of a task as the removing of the farm-home sewage. All bits of raw or cooked food can be fed to the hogs and the chickens. Bones and gristle can be ground and fed to the chickens. Melon rinds will be relished by the chickens or the pigs. Corncobs and fruit seeds can be buried or burned.

Bury the Useless Garbage

MANY farm homes are provided with a covered galvanized iron pail or other receptacle into which garbage is placed. If the garbage pails are not covered, large numbers of flies will be attracted by the refuse food.

Garbage that is not fed to live stock or burned should not be buried more than a foot deep, because the germs that reduce it live near the surface of the soil. A shallow trench will therefore serve the purpose.

If the garbage pail is washed often with a strong solution of soda and hot water it will not become sour. The flies will be discouraged further if the porch or shed floor where the pail stands is scrubbed with a preparation of chloride of lime and water.

The rubbish, which usually consists of broken bottles, tin cans, and old clothing and rubbers, is not dangerous in itself, but it collects dust and disease germs. Cans and bottles fill with stagnant water which becomes the breeding place of myriads of mosquitoes. Tin cans and bottles should be placed in a pit. A covering of soil prevents the accumulation of water and scum.

Old clothing and rubbers should be sorted carefully. All garments or articles which are not fit for sale to the traveling junkman should be burned. If a wire

container is used for holding rubbish while it burns, danger of fire will be lessened.

A canvas bag supported from a wire hanger near the kitchen door makes a good place to store papers until enough have accumulated to justify a bonfire.

Houseflies are dangerous because they carry millions of germs on their feet. Flies should be kept out of the home. A few are apt to get past the doors, especially if there are several children in the family. The children will be more interested in seeing that the doors are closed if the reasons for keeping the flies out of the house are explained.

Pursue the flies which have entered the home. Use swatters, sticky paper, and fluids. The fluids are somewhat dangerous, as children may drink them, or the flies in their struggles may fall into food, water, or milk; but the fly poisons are effectual and, if used carefully, may be recommended. Screen fly traps are successful for catching flies.

Mosquitoes may be kept under control by covering all stagnant water with a thin film of kerosene, thus destroying their chances to emerge from the water for air. If this rule were observed generally, the danger from malarial fevers and other diseases which are spread by mosquitoes would be lessened greatly.

Whether or not there is a bath, there should be a sink in every farm kitchen, and it should be preferably of enameled iron. A plain iron sink will rust if free from grease. A sink requires careful attention.

A lye solution should not be poured in the drain pipe. Lye will harden the grease deposit into a soap-like substance on the sides of the pipe. There is no better disinfectant than common soda, and a hot solution makes the best wash.

A closed cupboard beneath the sink is certain to be damp and evil-smelling. It makes a good place for cockroaches. If annoyed with cockroaches, mice, and other house pests, do not accept them as necessities. Their mere presence betrays insanitary conditions. First discover and rectify these, then fight the vermin to extermination.

Of course, doors, windows, and porches used for sleeping purposes should be well screened. See that your screens fit tightly, and carefully mend all breaks in them before they are put up in the spring. Not only teach the children not to hold doors open, but put a spring on the screens so that they will close of themselves. If you cannot afford wire screens for all of the windows, cotton mosquito netting will be better than no protection at all. Enough for all the windows in the average house may be bought for a dollar.

The mother in the farm family should be the health officer for the farm, because on her falls most of the burden of nursing and caring for the sick members. Then, too, she spends more time in the house and around the yard than any other member of the family,

and it is her duty to see that personal hygiene is observed in her home, and that the sanitary conditions of the house, yard, and outbuildings are all they should be.

Pretty shrubs, vines on the porch and around the windows, a border of bright flowers, or a well-kept lawn will often stimulate interest in orderliness. Grounds cannot be beautiful without being sanitary.

The Government has done a great deal toward helping farmers to improve the appearance and healthfulness of the farms, and bulletins on healthful water and sewage systems and on fighting the mosquito and the fly are supplied by the United States Department of Agriculture to those who ask for them.

The country must keep up with the city in the battle against harmful germs, and this can only be done by constant vigilance and systematic planning.

With careful regard for the sanitary conditions of the home, with proper food, and with attention to personal cleanliness, much of the fear of disease vanishes.

Disease-Free Hogs

By CLYDE G. HASKINS

TWENTY years a hog breeder without cholera ever entering his herd is the record made by W. V. Hoppe of Richardson County, Nebraska. His good fortune in raising hogs he attributes to cleanliness in feed and in the hog houses and pens. Vaccination has not been responsible for his success, for it was in 1915 that Mr. Hoppe vaccinated his hogs for the first time.

The farm is equipped with a large up-to-date hog house, with the usual pens surrounding it, but the greatest asset is an alfalfa pasture with running water from a spring which heads on the same farm. Thus the carrying of disease in the water from other farms is prevented. Common barrel salt is kept in the troughs all the time, and often wood ashes are mixed with it.

Mr. Hoppe has great faith in charcoal, which he usually makes by raking up the corncobs and burning them in the pens.

When ear corn is fed this is a good way to keep the pens neat and clean in addition to the value received from the charcoal. He does not believe in a hog wallow. He does believe that it is a breeder of filth unless it is in a spring creek. The pens are kept as clean as possible, and the young stock is always fed on a board floor. When the older stock is fed in the pen the location is changed often, and a place where the ground is hard is always selected. If lice are discovered, the hogs are shut in the hog house and sprayed with crude oil once a week for three weeks, or are dipped.

Plenty of bedding is used and is changed

often. Mr. Hoppe contends that hogs cannot take on fat at night when they lay on a hard bed. Before feeding any grain the hogs should be watered or sloped, he says. It is a mistake to feed a hog when he is thirsty, for he will take his grain too fast and gulp it down.

The great battle is the fight against worms, and that is continued everlastingly. The hogs are fed a worm expeller once a month. In the winter the brood sows are given a feed of corn in the morning and a feed of oats in the evening. The floor of the hog house is strewn with alfalfa in the morning for them to eat during the day. The last cutting of alfalfa is preferred by Mr. Hoppe for hog feed. If he has no alfalfa, the hogs receive a slop of shorts once a day. Care is taken not to give the brood sows too much corn.

When about two months old the pigs are weaned. The mothers are penned up and the pigs naturally run away and wean themselves. Mr. Hoppe is careful to feed the sows lightly at weaning time so the milk flow will be decreased and stopped quickly rather than increased. Too much feed at this time makes bad udders. The pigs are fed as soon as they will eat—when about six weeks old. They are taught to go through a creep to a part of the hog house set aside for them, and are tempted with skimmed milk. The sows are fed in their part of the hog house until the pigs know what feed is and can eat.

Dishwater and other slop from the kitchen are not fed to the hogs, and it is not gathered up in town for fear that it may convey disease or carry poisons. The pigs run in the alfalfa pasture, and are given fresh water three times a day, or have access to the spring.



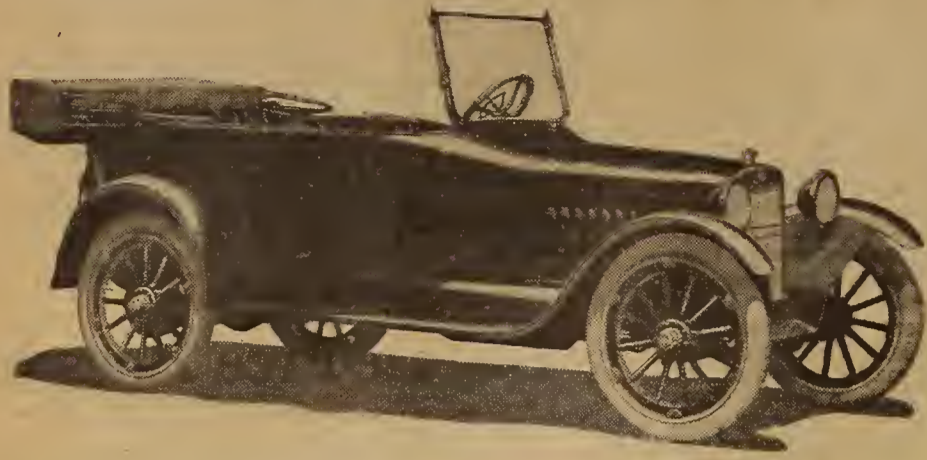
Yards free of rubbish and other trash improve the healthfulness of a farm



With careful regard for the sanitary conditions of the home, with proper food and personal cleanliness, much of the fear of disease vanishes

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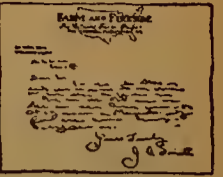
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The Editor's Letter

Sharing Farm Returns with the Children



I HAVE noticed quite a difference of opinion among parents in the matter of providing for their children or of being provided for by them. Stripped of all embellishments, the reasoning simmers down to either a liberal view of the case or a close view. The liberal-minded parent wants, even at considerable cost, to see his children educated and trained to face the world with a fair chance of success.

The other kind of parent feels that his children owe him an obligation for being in the world and that, to earn their board, clothes, and shelter, they should work without pay at least until they are of age. Nor does this reasoning imply any lack of love. Between these two extremes are no doubt countless other ideas, tempered by financial circumstances and varying degrees of affection. And in the carrying out of these ideas we have an endless succession of human experience with complete happiness at one extreme and bitter heartache at the other.

Sometimes I think we fail to realize that children grow up nearly as fast mentally as they do physically, and young men in particular do some serious thinking about what they are going to do with their lives. All this is prompted by a thoughtful letter from a young farmer in Michigan.

"When I was a boy of fifteen," he begins, "I was doing a man's work on the farm. I was strong and healthy, and worked side by side with my father day after day, the year around, to help pay for the farm. All the education I had was as far as the fifth grade, but I was thankful for that much. The farm was paid for in a few years and things looked better for us.

"At nineteen I began to want a little spending money of my own, as all young men do. I could get this by going out and working for neighbors, but sometimes when we were busy at home and I could not work out I would run short. When I asked Father for some he would ask me what I wanted it for. I would tell him I wanted to go out in the evening and thought I might need it. Then he would say: 'For goodness' sake, have you spent all that money you earned from So-and-so?'—which wouldn't be over one or two days that I had worked for my neighbor. I would tell him, 'Yes,' and finally with a lot of coaxing he would give me a dollar. Well, that was hardly enough to take me to town and back, for my car fare was 50 cents, which left only 50 cents to spend. You know that when a young man goes out once in a while with a party of young folks 50 cents doesn't go very far.

"THE result was that I always came home with a mean feeling toward Father. After reaching the age of twenty-one I made up my mind I would look out for myself unless Father paid me for my work. Well, he promised to pay me \$100 a year and buy my clothes, which I had been doing for the last few years. On that agreement I worked two years, and figured I had \$200 coming. So I asked him for it, and it was the same old story again: 'What do you want to do with it?' I told him I thought it wasn't any of his business. He refused to pay me at all, so I left the following spring with a sore heart toward Father. I had been gone two years when he sold the farm and moved to the town in which I was working.

"Mother asked me to come and board with them, which I did, giving Mother the board money. But Father thought he ought to have the money, as he was paying the grocery bill, and there the trouble commenced again. He called me a good-for-nothing and a hobo. Well, things finally got so bad that I would go out evenings to quench my anger in beer and whisky, and soon I was coming home drunk every night. Finally I thought, 'If I keep this up I sure will be a hobo,' so I made up my mind to stop, and did. A little later I married, and now have charge of a 20-acre fruit farm, this being my third year in that work. And let me tell you it does me good to hear my neighbors talk about me and say, 'That is the best man Pratt

(the owner) ever had on his farm,' and people going by in the summer saying, 'Doesn't that farm look fine? Not a weed in sight and everything spick and span.'

"For this is true. I take just as much interest in this farm as if it were my own, because that is what he is paying me for. My wife and I are just as happy as can be, and I must not forget to mention our baby boy. You can imagine how proud I am when I come in the house for my meals to see my son stretch out his arms and say, 'Papa, papa.' He was a year old the first of January.

"And now, dear Editor, if you think this letter is worth while to publish, do so, for maybe some other father has a son growing up, and I hope when he reads this he will look into the future and do the right thing by giving his son an interest in the farm."

THE story you have just read impressed me with the earnestness that a good many young men must have in their hearts, though it seldom shows on the surface, for an acquired characteristic of civilization is the ability to control the feelings. So a little later I took pains to ask another young man who is now managing his father's farm how he manages to get along so well.

"Father was one of four sons," he answered, "three of whom were given quite an extensive schooling. But when Father, who was the youngest, grew up he was denied the schooling because his father was getting so old he could not work the farm alone. Yet no substitute or compensation of any kind was offered for the loss of schooling.

"When his children grew up he took special pains to see they were fairly treated in such matters. My brothers and sisters received good educations. When I had finished common school I was the only boy at home, and we were farming 141 acres. Father was beginning to weary a little of the work and wished me to take active charge. One day he presented the case to me in this way. I might go to high school and college if I wished. On the other hand, if I cared to remain on the farm and take active charge, getting off a little while each winter to attend the short agricultural course, he would arrange things so I would be paid all that was due me.

"I chose the latter proposition. I worked hard on the farm and then crammed a lot of practical schooling into a couple of months each winter. Thus each year, until I was of age, I was earning a man's wages almost the whole year and, besides, I was not costing Father anything for schooling. I was making money for him and saving him money at the same time. I was too young to be given much money at that time, so received only a small spending allowance.

"But Father was square with me. He had been keeping figures and knew what I had saved him in those years. So when I became of age and was ready to invest in real estate, Father presented me with a check that ran into four figures."

One of the most successful arrangements I have learned of is a combination salary-and-share agreement. The farmer pays his son a small weekly wage every Saturday night, and also gives him a share in the crop and livestock returns at the end of the year. Thus the son is not wholly without money as he goes along, while at the same time he is compelled to shoulder a part of the responsibility of loss or gain that goes with farming.

These plans seem to favor the son considerably, and yet I think he should be favored a little. But, anyhow, why not talk matters over first in a casual way and then finally decide on some workable plan that suits all concerned? That's better than letting things drift, as so many of us are likely to do; for what greater comfort can there be in later life than to have your children say, "Father was square with me."

The Editor

Paints That Endure

Varied Views on the Ready-Mixed and Home-Made Products

By D. S. BURCH



These buildings of an Iowa hog farm are all painted gray with white trimmings, ready-mixed paint being used. Two coats were applied in 1907, one coat in 1911, and one coat in 1915

LATELY I have been talking with two men who will paint their houses this spring. One of the houses is new; the other will be a repainting job. The owner of the new house is planning to put on the first two coats himself and hire an expert painter to apply the last one. He expects to use a home-mixed paint made from the best white lead, oil, and pigments.

The other owner has already purchased 10 gallons of ready-mixed paint and, as he lives in the city, where painting is done chiefly by contract, has engaged a painter to do all the work. But this man is a trifle worried about the outcome. "I bought ready-mixed paint," he told me, "of the best grade I could buy, because I want a first-class job. But a friend of mine, who is a painter, tells me it won't wear as well as a hand-mixed paint. What do you think about it?"

Both of these men are progressive in their ideas, up-to-date in their reading, and fair-minded in their conclusions. And yet their attitudes show how the popular opinion on painting problems has lagged behind the real progress of the industry. It would be better for the first man, who knows little about such work, to hire an expert painter to put on the priming coat and, if he desires to save expense by doing part of the work, to apply the final coats himself.

Priming Coat Most Important

The second man has no grounds for worry over his purchase of ready-mixed paint if it is as good as he thinks it is. While some experienced painters honestly argue against them, tests have shown high-grade factory-made paints to be of superior lasting qualities in addition to being more uniform in color and composition, more finely ground, and consequently possessed of a greater spreading quality. The chief problem of this man is to see that his painter does good work. Here are a few simple observations with which to check up the qualifications of a painter. For outside work a first-class painter uses either a full round brush with long elastic bristles, or a flat brush not over three inches wide but thick and full of good bristles. He rubs the paint well into the wood, using plenty of wrist motion. Poor painters, to hasten their work, will sometimes use a flat wall brush as much as five inches wide, and simply "flow" the paint on with long sweeps of the arm and without rubbing it in.

A good painter does not over-thin his paint to save work or to make it spread farther. He does not apply a first coat of paint to unseasoned wood nor to any outside wood within twenty-four hours after a rain, nor when snow, frost, or dew is on the ground. He does not use yellow ochre in priming. In three coats' work he uses a little turpentine in the second coat to "kill" the gloss and make the last coat hold better, but otherwise he uses turpentine and benzine sparingly. And, chief of all, he stirs his paints thoroughly before beginning work and at frequent intervals as he proceeds.

The priming coat is the most important of all, for it is the coat that chiefly

preserves the wood. It holds all the other coats not only the first time a building is painted, but of all other jobs as well. "Putting on a cheap priming coat is one of the most foolish attempts a property owner can make to save money" is the comment of a master painter who understands human nature as well as he knows painters' practices. "The upper coats will hide a cheap primer for a little while, but weathering will soon make the paint loosen its hold. The only sure way ever to get a satisfactory job of painting on a poorly primed house is to burn off all the paint down to the bare wood with a blow torch and begin all over again, using a good priming coat to start with. This of course is an expensive process, avoidable by using a good priming coat in the beginning."

When estimating the expense of the average painting job, one third is commonly allowed for materials and two thirds for labor, which means that for a house requiring nine gallons of paint the cost of high-grade materials for two coats will be around \$30, and the cost of labor \$60, making a total of about \$90. On most farms where field work is not too pressing, the natural inclination is to save the \$60 labor bill, if possible, by dispensing with the services of a painter and thus controlling the entire situation, including quality of materials and the proper application. This is sensible reasoning, especially if the local painters are not strictly first-class. But the actual net saving by doing the work yourself will need revision according to the nature of the work. A painter furnishes his own brushes, ladders, scaffolding, and miscellaneous equipment. Thus, for certain classes of work requiring a complete painting outfit the cost of such equipment would eat considerably into the saving. Painting is also hard work for those not accustomed to it, and the painting of cornices, ceilings, and overhead work of any kind often proves more difficult and disagreeable than many who read

this will believe until they undertake it.

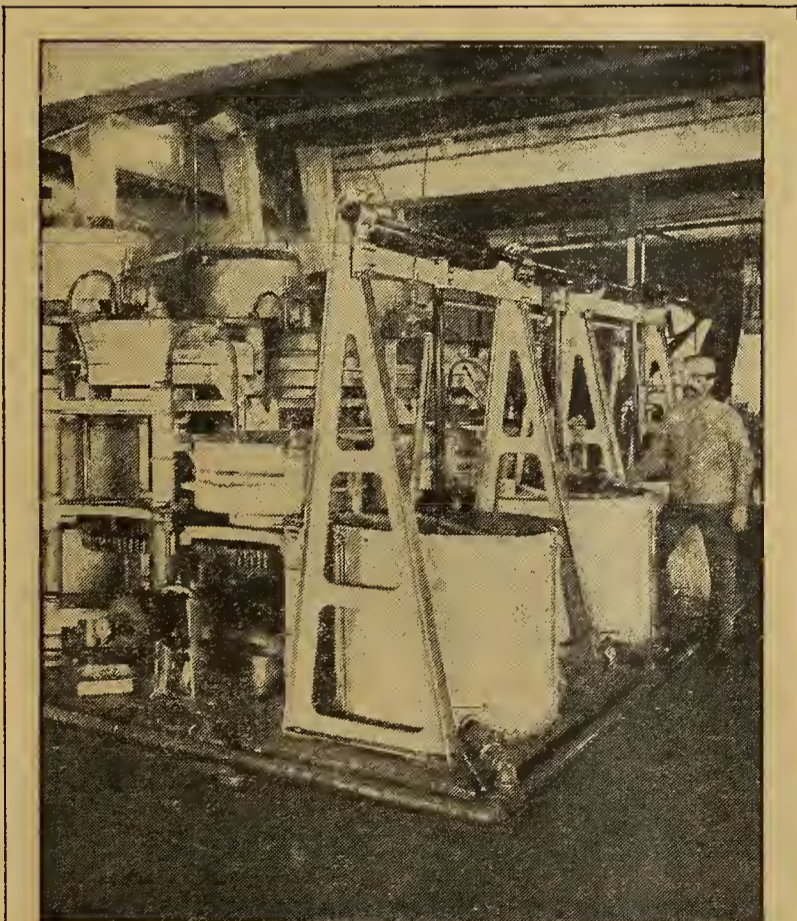
On the other hand, for straightaway work on ordinary buildings, and when you already own or can borrow ladders and other equipment, there is considerable saving and satisfaction in doing your own painting. The proper coatings to use for special surfaces such as tin, steel, galvanized iron, brick, or concrete will need a little study, but with the abundance of free literature to be had on any painting problem, no one need go uninformed. In fact, the person who looks into such matters is likely to get better results than the painter who relies entirely on his own experience, which may never have included a similar problem.

About Matching Colors

For the man (or woman) who does his own painting the wisest course is to use a high-grade ready-mixed paint of a standard color. The proper mixing of paint colors, either dry or liquid, calls for considerable experience, and amateur attempts to get special shades or blends not shown on the color cards frequently go wide of the mark. For instance, anyone unfamiliar with the method of securing a plum color of bluish-gray tint would perhaps spoil a good deal of paint before finally succeeding. No blue coloring is needed at all, but, speaking for one class of pigments, a blue-gray plum color is readily secured from gray and red. Therefore it is best to select suitable colors from a color card and use them as they are, without any attempt at blending. Another reason for adhering to standard colors is your ability to match them exactly in case you should need more paint to complete the job, or if at a later time you want to paint an addition or some outbuildings to match the first work. The large paint companies have color experts who test every batch of paint by comparing it with a carefully preserved standard. Standard colors are thus maintained indefinitely.

As already noted, the quality of factory-mixed paint is sometimes challenged by painters who prefer to "mix their own." No doubt they are sincere in their belief that with pure white lead, oil, and pigments they can make a paint that surpasses the ready-mixed product. But the manufacture of paint is both a mechanical and chemical process, and improved machinery helps materially in grinding and mixing. Furthermore, white lead and oil, though forming the basis for all high-class paints, make a seemingly too soft covering to endure hard weathering. Like pure gold, which is made stronger, harder, and more durable by the addition of silver and copper, a lead and oil paint may be hardened by zinc, barium, and other products corresponding to alloys.

A high-grade ready-mixed paint is composed of a variety of ingredients each pure in itself but mixed together in proportions that weathering tests have shown to be most durable. Paint ingredients have advanced considerably in price during the past few years, and at the present time the cost of the [CONTINUED ON PAGE 11]



A battery of paint-making machines. The top and bottom rows are mixers; the intermediate machines are grinders

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FARM and FIRESIDE

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April 7, 1917

Broaden County-Agent Work

"ONE of the needs of the day," suggests a practical farmer, "is to carry the work of the county agent to the many renters who are antagonistic, largely because of a misunderstanding. We should have a law framed on a broader plane and providing for a representative farm visitor, one who will not overshoot the mark."

Surely there is much of sense in what this man has to say. The great difficulty in most agricultural work of an educational character is to reach the people who are most in need of help. One reason why this is true is that the man who is engaged in a 365-day fight to make ends meet feels that he has no time to attend meetings of the county farm bureau or to take part in the movable school of agriculture courses or the neighborhood farmers' institute. He may be wrong, but this is his attitude. He is honest—perhaps honestly mistaken. He ought to be reached. To reach him is to help him, his family, the farm owner, and the community.

What is true of the renter is true also of the farm owner who is in debt. These are the men who should be considered first of all. How to reach them is the big problem. Perhaps "a representative farm visitor, one who will not overshoot the mark," will point the way. If the mountain will not come to Mahomet, may not Mahomet go to the mountain?

A New Side Line

THE American farmer and his thrifty son contribute liberally to the \$60,000,000 worth of North American furs marketed in England during a normal year. None know better than they that the available supply of fur-bearing animals is decreasing rapidly.

Many farmers have gone into the production of fur-bearing animals as a side line. They have found that many animals can be domesticated and that their pelts will sell at remunerative prices. Among those now being grown domestically are fox, otter, skunk, mink, raccoon, fisher, and beaver.

Each kind of animal requires a specific environment, but the range is sufficiently wide to make it possible to conduct fur-farming of some kind in almost any locality. The Northern States, however, usually produce the best pelts, for which the highest prices are paid.

To a considerable extent fur-bearing animals consume products of the farm, such as refuse meat, fruit, vegetables, and table scraps, and can be given much the same diet as the farm dog or cat. Thus not infrequently domesticated fur-bearing animals grow to maturity without much actual cash outlay.

The prices paid in recent years for good, prime pelts certainly are encouraging to the industry. Prime skunk

skins in New York City during the last decade have commanded on an average of \$3 apiece; No. 1 Northern mink close to \$7; beaver, \$8. For breeding purposes the live animals usually sell at a substantial premium over the value of their pelts.

Much advancement has been made by the breeders of farm live stock by organization, and it is only reasonable to expect like benefits to accrue to breeders of fur-bearing animals.

Marauding Dogs, Beware!

THE high cost of clothing bids fair to put and keep the dog in his place where every other curb has failed. As never before, there is being shown a disposition for sheep owners and woolen manufacturers to get together with the object of restricting the liberties of our dog population.

Heretofore a few dog owners have been able to dominate the dog policy of the entire country. In the past all that has been necessary was the introduction of a few stories at the psychological moment before legislators and all the teeth have been at once extracted from our dog laws.

The wool interests of the entire country are aroused as never before, and mutton hunger is also aiding and abetting the movement for a dog restriction that will restrict. Forty-cent wool may not put a crimp in the liberties of the dog sufficient to safeguard the wool-bearing sheep, but when wool mounts to 50 and 60 cents a pound, as it will, then watch the dog retire to the seclusion of his kennel and paddock, no more to roam in wanton marauding.

A Market Problem

IN ANY campaign that city people begin against a conspiracy to raise the high cost of living, care should be exercised that the great producing classes of the country—the farmers—are not made to suffer, and that farming, a fundamental industry, is not crippled.

The truth is that the market baskets of America have so long been filled with such a great variety of things and at so small a cost—filled just as the purchaser would have them—that the real science of marketing, likewise a proper appreciation of the producer, has been lost sight of.

If the zeal of the enthusiasts who are to-day attacking the high cost of living can be directed toward a solution of the real market problem it will be well. There is need of co-operative purchasing, perhaps, under some circumstances, of direct country buying on the part of dwellers in city compartments and by neighborhood groups. A suitable substitute for the old-fashioned cellar would help the city people.

The problem of solving the high cost of living must be looked upon as one personal to each purchaser. It is likewise a big problem—too big to be permanently solved by a boycott.

Federal Good-Roads Policy

IN THE expenditure of \$85,000,000 for good roads under the Federal Aid Road Act, the Government places no restrictions upon the kinds of highways to be constructed. Commenting on the false report that plans for only expensive roads will be approved, Secretary Houston says: "There is not the slightest truth in such a report. States may submit for approval any kind of road, even an earth road, and approval will be given if the construction be substantial in character, suitable for traffic needs, and meets the terms of the federal act. No particular kind of material will be required or favored by the Department of Agriculture to the detriment of other materials."

A broad government policy of this kind will impress on state legislatures and highway officials the sincerity of the Federal Aid Road Act.

Clean-up Days

IN a select suburb of an Eastern city the people live happily, but in a manner which would scarcely appeal to the normal freedom-loving and independent American citizen. For that suburb is a highly restricted district. Before a property owner can paint his house or make a flower bed or make extensive repairs that can be seen from the outside he must get permission from the committee which has the matter in charge. The purpose of such regulations is to build up a high-class community, at least from the standpoint of exterior beauty, and to prevent either newcomers or old residents from doing anything to their property which will detract from appearance of the neighborhood. While the method of securing congenial surroundings in this case is grossly artificial, the desire is a natural one. But in the country the same results may be secured at less expense and without any loss of independence.

A certain farmer who owns 200 acres of land through which runs a beautiful river has repeatedly refused to sell camping sites along the river for fear of having the land fall into the hands of undesirable neighbors. He will lease, but not sell; he has a large family of girls and wants to keep the home surroundings pleasant and enjoyable.

This feeling is the basis of the clean-up campaigns now held in many communities during the spring, when Mother Nature sets the example by dressing the earth in fresh attire with an added touch of apple-blossom perfume. The clean-up days are the direct occasion for making repairs, removing trash, and converting untidy places into beauty spots. The plan is a good one, and in addition to making the farm and community a better place to live it is a health measure as well. This is especially true in the country, where the surroundings are completely in our own hands. The absence of sewers, closeness of buildings to water supply, and the natural accumulation of tin cans, manure, and junk make clean premises a matter of obvious importance. Why not hold a family council and appoint a home clean-up day in which all the family helps!

Our Letter Box

Warns Land Buyers

DEAR EDITOR: Desiring to be of benefit to land seekers and especially widows who would invest, I offer the following: It has come to my notice the different ways that land grafters have of selling practically valueless land, so-called dry land. I know of one concern which transfers land back and forth among its members to make a showing on the recorder's books at the court house. Then they show what a good investment it is: "Look here, how many times this land has been sold the last two years."

Another outfit spent a great deal of money on buildings, etc., to fix up "farms" of the 160-acre type. These farms are put in charge of dummies who testify to the bounteous crops that can be raised, etc. Then the auto whirled them off to distant green fields. During droughts, when the semi-arid land burns up, they do not appear with prospective purchasers.

L. K. SMITH, Colorado.

A Chance for Someone

DEAR EDITOR: We are in something of a predicament. Wife and I are living here on a 640-acre claim, well watered, fenced, and as good grazing land as can be found in this part of the State. We have been living here three and one-half years and can "prove up" at any time or stay five years more without rent or taxes.

The predicament referred to is that we are without means further to develop our ranch. Cattle are the sure means of making money in this country, as they can be grazed fully nine months each year and often eleven months out of the twelve. What we are now on the lookout for is a semi-invalid in need of the curative qualities of this splendid climate—someone who would be willing to go in with us in a cattle partnership by putting about \$5,000 against our land

and services according to some satisfactory contract we could agree upon. The party furnishing the capital could become a member of our family if desired or live in a separate cottage.

I am confident that within five years such a linking up of capital, land, and labor would result in most attractive results for all concerned.

A stipulation we should want to go with this offer would be that the party furnishing the capital should be of absolute trustworthiness, of good moral character, and preferably educated and cultured. Surely there must be someone needing the health-giving life of this splendid Montana climate who would be willing to capitalize a proposition like that I have outlined and make some money and regain health to boot.

M. A. GRAY, Montana.

"Like Father, Like Son"

DEAR EDITOR: While I am writing you in regard to another matter, I want to take the opportunity to thank you for your promptness in affording me such valuable information about farm tractors.

My father took FARM AND FIRESIDE when I was a boy, and "like father, like son." I, too, have always had it in my home since having a home of my own. We surely do enjoy your paper. Wife can hardly wait until it comes.

ANDREW WALTON, Missouri.

An Old Subscriber

DEAR EDITOR: When sending my renewal yesterday, I did a little figuring to determine just when I first subscribed for FARM AND FIRESIDE. If I was not one of the very first, I was not far behind the forefront of the procession of early subscribers. As a boy I lived on my father's farm about a mile north of what was then the center of Springfield, on the "Urbana Pike." The Odd Fellows' Home now occupies the site of our old farm. Later we moved into Springfield and occupied a house which, with other buildings, was afterwards removed to furnish the site for the present home of FARM AND FIRESIDE.

After leaving our Springfield farm I soon came to Pittsburgh, and finally got into business, and have lived here ever since. I am now eighty-five years old, and am the oldest living dry-goods merchant in Pittsburgh. I am the oldest member of the Second Presbyterian Church and the oldest person in the suburban village where I now live.

When paying my life insurance dues recently, the agent informed me that I am the oldest remaining person listed on their books.

I have always been actively interested in Y. M. C. A. work. Our organization here was started sixty years ago with 200 members. It now has 10,000 members. Our association here was the fourth oldest in the world, and yours in Springfield was started soon afterward.

I am still keenly interested in good reading, and have never lost interest in farming matters and FARM AND FIRESIDE. My home grounds now consist of one acre, where I enjoy my recreation among our trees and flowers. I have on this home acre 60 varieties of ornamental trees, also fruit trees, two fine lawns, five large beds of ferns, and a grand old white oak tree which is estimated to be two hundred years old. Trees and shrubbery that I planted twenty-five years ago are now a perpetual joy throughout the years.

DANIEL COOPER, Pennsylvania.

Young but Canny

DEAR EDITOR: I am amused at the reference to the "boy of twenty-three as grain inspector" in Mr. Welliver's page in the December 2d issue of FARM AND FIRESIDE. The "dealer" seems to think that gray hair and possibly whiskers are essential to good judgment in grain inspection.

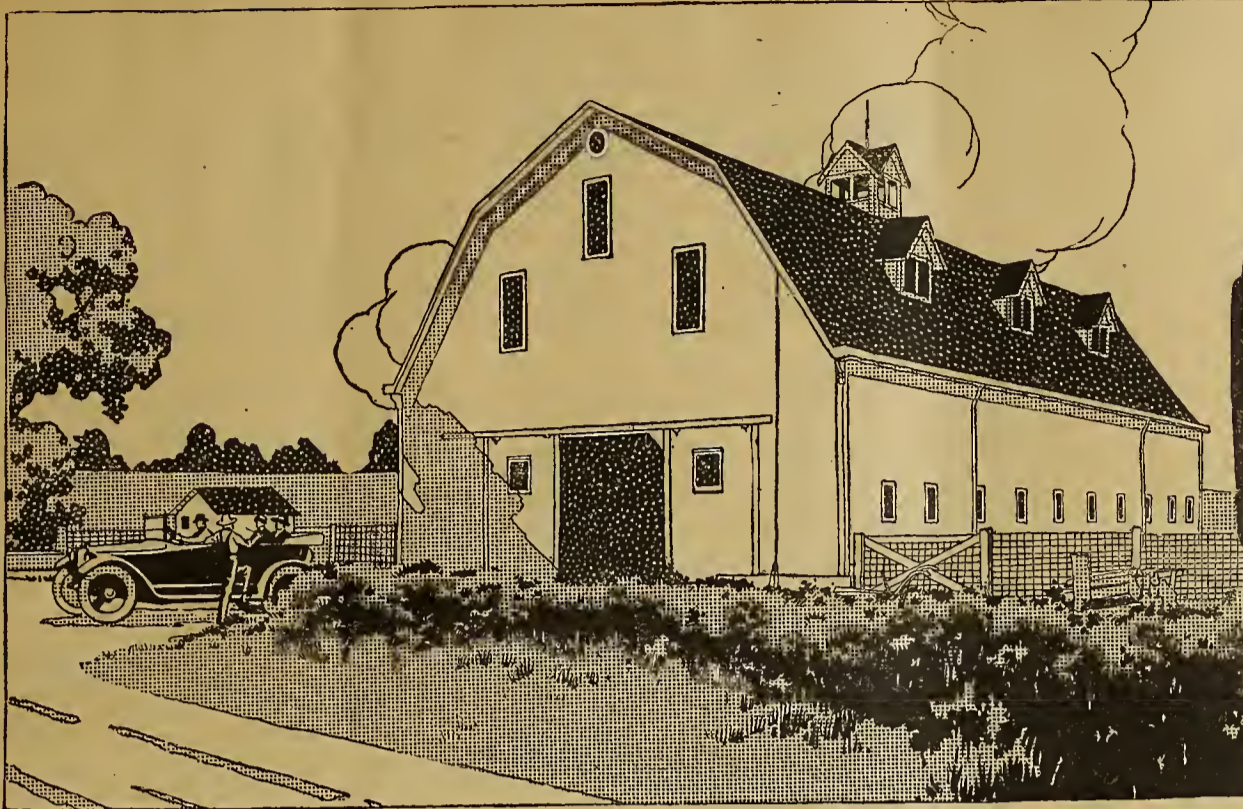
At the age of nineteen I, a green farm boy, obtained a position with the grain inspector at the greatest grain-handling point in the United States. At twenty-two I was the highest salaried deputy in the office, and continued to be such until my resignation at twenty-six to go into business for myself. During the entire time of my services my decisions were rarely criticized.

B. L. SENNETT, New York.

Likes Sugar Peas

DEAR EDITOR: Again I see sugar peas mentioned in FARM AND FIRESIDE. Since coming West in '65, I have never seen a sugar pea. I have written to friends in West Virginia (my home State) asking if it were possible to get the seed there, but it seems they are not growing them in the immediate neighborhood I lived in. They are most delicious, and I have longed for them.

MRS. A. J. RUDELL, Illinois.



Live Stock Barn—Robbins & Sons, Horace, Ind.



Draw Your Own Conclusions

We could very properly tell you in this advertisement that we believe Goodyear Tires will serve you better than any others.

And we could do it honestly, for that is our profound conviction.

But we prefer that you get your information from less interested sources—from sources you know are unbiased, and uninfluenced by any consideration save the character of the tires themselves.

We prefer that you get it from people right around you—from your neighbor, and the fellow farther up the road—from any of the motor car owners in your township.

So we suggest that you ask any of these people what sort of service they are getting from the tires they use.

Compare the results enjoyed by Goodyear users as against those delivered users of other tires, and draw your own conclusions.

Doubtless this suggestion awakens your astonishment. Manufacturers are not as a rule in the habit of recommending indiscriminate and searching comparisons of their product with others.

But Goodyear recommends it with supremest confidence.

For we know that the materials and

makeup of this tire are of the highest and most efficient character it is possible to put in such a product.

And we know that the skill and precision of the men and machines in our factories are given without reserve to the unqualified goodness of this product.

That it will serve far beyond ordinary capacities we feel with the deepest certainty.

And supporting our belief is the fact that today Goodyear Tires are bought by more motorists than is any other brand. These motorists would not buy Goodyear Tires, and continue to buy them, if they did not offer conspicuously better value.

When you come to Goodyear Tires, buy them from a Goodyear Service Station Dealer. There's one near you, pledged to help you get bigger returns from your investment.

He has Goodyear Tires in stock, and Goodyear Tubes. *Better* tubes—able to support the casing in its hardest work without faltering.

He has Goodyear Tire-Saver Kits in stock, also. Ask him about them, for your own good. They are a most important detail in tire conservation.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR
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MEDICATED SALT

BLUE BAG BRAND

WORMS cause a large share of live stock losses. Blue Bag Brand Medicated Salt is prepared with reliable worm medicines that will effectively rid your stock of worms. In addition, Blue Bag Brand Medicated Salt will put flesh back on worm-infested stock after destroying the parasites. It will put new life into your animals—make their eyes bright and their coats sleek and healthy—all at a remarkably low cost per head. Three cents' worth of Blue Bag Brand Medicated Salt will last a sheep sixty days, a hog sixty days, a horse fifteen days, a cow fifteen days.

You can feed Blue Bag Brand Medicated Salt with perfect safety and with absolute certainty of seeing an improvement in your stock. Let them dose themselves with this reliable remedy. They will not take more than they require. Remember, healthy-appearing stock often are worm-infested. Protect your animals against worms by feeding Blue Bag Brand Medicated Salt.

Sears, Roebuck and Co., Chicago

Prices of Blue Bag Brand Medicated Salt.

No. 8B800 1/4 25-pound pail, net wt. Shpg. wt., 27 lbs. Price \$1.45
 No. 8B801 1/4 50-pound pail, net wt. Shpg. wt., 54 lbs. Price \$2.35
 No. 8B802 1/4 100-pound drum, net wt. Shpg. wt., 110 lbs. Price \$3.95
 No. 8B803 1/4 300-pound drum, net wt. Shpg. wt., 325 lbs. Price \$8.98

We have prepared a Catalog of Stock and Poultry Feeds that you should have. It gives hundreds of interesting facts about Blue Bag Brand Feeds, quotes low prices and will prove a valuable handbook for you. May we send you a copy?

Just write and ask for Stock Feed Catalog No. 7271F, and as soon as we receive your request a copy of this book will be sent you.

Why Not Let Blue Bag Brand Medicated Salt Rid Your Stock of Worms?



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BLUE BAG BRAND

SAVE 40% ON YOUR TIRES



3500 Mile Guarantee

Manufacturers of high-grade tires sell us their surplus stock or over-production for spot cash. These tires, actually firsts, are sold as blemished, at a REDUCTION OF 40%.

Size	Plain	H-Skid	Guaranteed
30x3	\$7.00	\$7.55	\$2.00
30x3 1/2	9.05	10.10	2.35
32x3 1/2	10.60	11.80	2.60
34x3 1/2	11.05	12.10	2.70
31x4	13.40	15.10	3.20
32x4	13.70	14.90	3.25
33x4	14.30	15.60	3.30
34x4	14.65	15.95	3.40
35x4	15.45	16.90	3.50
36x4	15.65	16.95	3.60
34x4 1/2	19.70	21.50	4.15
35x4 1/2	20.65	22.45	4.25
36x4 1/2	20.95	22.85	4.35
37x4 1/2	21.80	23.75	4.50
35x5	22.65	24.75	4.90
36x5	24.65	26.90	5.15
37x5	24.00	26.20	5.25

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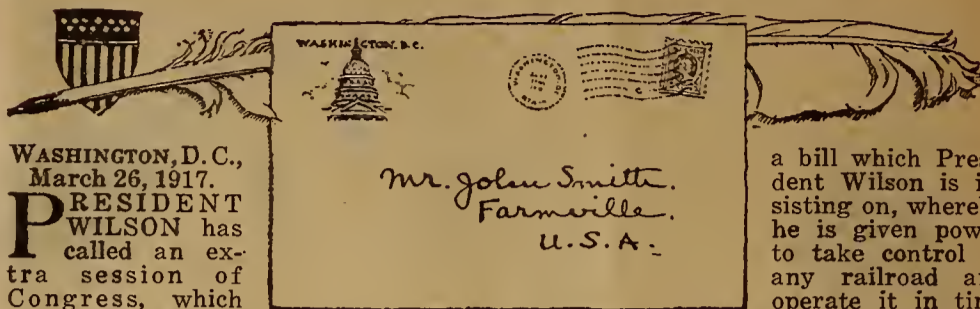
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Millions for Defense

Extra-Session Congress to Enact Measures

By JOHN SNURE



WASHINGTON, D. C.,
 March 26, 1917.

PRESIDENT WILSON has called an extra session of Congress, which statesmen of cool

judgment are pronouncing the most momentous since the days when the Civil War broke over the nation. A warlike setting has been given this session because at the time of announcing it the President also decided he had power to arm merchant ships to resist attacks of submarines. Certain it is that, with the order for the arming of ships given, few leaders in the Senate or in the House believe it will be possible for the United States to keep out of the European struggle.

To appreciate the magnitude of the tasks before Congress, let us understand the three things it has to do:

To pass appropriation bills amounting to more than a half-billion dollars.

To enact important measures for national defense and preparedness for war.

To dispose of a number of other bills of far-reaching character which would, as a rule, be sufficient work for a single session.

How long it will take to do these things no one can tell. If the menace of war grows more threatening, Congress may be obliged to sit all summer and fall, until the time for the regular session opens next December.

A half-billion dollars looks like a big amount of money, but Congress this spring will appropriate it almost as a matter of routine. When the old Congress died March 4th, five great appropriation bills failed to pass because of the jam of bills in the closing days of that Congress. These bills must be passed before the beginning of the next fiscal year, July 1st, or a lot of government activities will be stopped. In fact, some of the wheels of Government have been doing much creaking because the old Congress quit and went home leaving part of the appropriation bills sidetracked. At one time the stopping of the Bureau of Engraving, where the paper money of the Government is made, was threatened because of lack of appropriations.

The appropriation bills to be passed in the extra session are:

The army appropriation bill, which provides for maintenance of the army, and which amounts to \$278,000,000.

The sundry civil bill, providing money for a great many of the departments of the Government, and amounting to \$139,000,000.

The general deficiency bill, amounting to \$62,000,000.

The urgent deficiency bill, amounting to \$80,000,000.

The military academy bill, providing for the West Point Military Academy, amounting to \$1,300,000.

IN THE measures looking to preparedness for war which this Congress will consider, one of the foremost is the Chamberlain bill for universal military training. It promises to arouse a controversy little less bitter than conscription has aroused in England. Senator Chamberlain has announced his purpose to do all possible to pass it, and has declared it could be passed if the Administration would get behind it. Thus far the President has not defined his position. In the Chamberlain bill the time of training is six months, after which the young man passes into the army reserve of the United States.

President Wilson wants important railroad bills passed. In part, these relate to preparing the country for war.

One is a measure for the government investigation of railroad wage and labor disputes. This is the bill which the President urges should include a provision like the Canadian Disputes Act, forbidding strikes or lockouts while the investigation is in progress. But the railroad employees insist they must not be forbidden to strike, and the probabilities are that the measure will be passed providing simply for a government inquiry into such disputes and publication of the facts without any effort to prevent strikes while the investigation is on.

Related directly to the war crisis and to the possibility of a railroad strike is

a bill which President Wilson is insisting on, whereby he is given power to take control of any railroad and operate it in time of war or grave

emergency for military purposes. Back in 1862, in Civil War times, Congress passed a law much like this, under which President Lincoln had power to seize and operate railroads. The law expired with the close of the war.

By virtue of the legislation which will be passed by the new Congress and which has already been passed by the old Congress, President Wilson will have most sweeping powers to seize and operate railroads, telegraphs, telephones, factories for the making of war material, ships, shipyards, harbor facilities, elevators, and so on. Never before in the history of the Government has such tremendous authority over the transportation and industry of the nation been granted. That it has been granted—or is to be—is due to the lessons of the war in Europe under stress of which nations like Great Britain, France, and Germany have undertaken the control or domination of practically all industry.

MANY men, and patriotic too, look with doubt and misgiving on the extent to which the Central Government at Washington in these days of stress and storm is being clothed with power. They fear it will never be given back. Be that as it may, the Government at Washington is being vastly strengthened.

Not entirely is this due to the danger of war growing out of the submarine crisis. In part, it is due to the fact that the President and Congress are beginning to realize that if the United States is to hold its own in the markets of the world after the war, in competition with other great nations, it must prepare itself for that struggle, and the resources at command of the Government must be organized behind the country's industries.

The feeling of the people is still growing that the Government must absolutely take over and own and control certain industries now privately owned and managed. When great nations like Great Britain take over the coal mines of that country, it makes high officials and men in Congress sit up and ask themselves whether a new order of things is not at hand for the United States of America.

Prominent in a long list of measures which are calling for the consideration of Congress are the national prohibition and the woman suffrage amendments. The tireless men and women who have for years advocated these measures will again be at the front and in the fray with renewed energy. No action is expected in the extra session, but ground will be broken.

The Congress just closed made strides forward in prohibition. In the passage of the bill to make dry the District of Columbia and in the passage of the Jones-Reed amendments to the post-office bill, no one denies that hard blows were struck for prohibition. The Jones amendment is intended to shut liquor advertising out of dry States, and the Reed amendment to make it a criminal offense to ship liquor into any State that prohibits its manufacture and sale.

One thing may be taken for granted, that if the United States plunges into the vortex of war sweeping legislation to make the whole country dry will be pressed with great vigor.

To add to the interest of the situation in the new Congress is the closeness of the division in the House as between Republicans and Democrats. It is so close that a turn of the hand may determine what party will elect the Speaker, choose the leader, and organize the committees.

The sickness or the death of a single member under such circumstances may change the course of history. But as to one thing there need be no doubt: That however the House is controlled, in all essential things needed to support the Government in the foreign crisis the necessary backing will be given to the Administration.

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Paints That Endure

[CONTINUED FROM PAGE 7]

raw material required to make a gallon of high-quality paint is about \$1.65. This, of course, does not include the value of the container or the expense of manufacture, testing, and distribution. These items bring the present value of the best paint to between \$2.25 and \$3.50. As in handling many other products, expenses may be kept low by close figuring of the amount needed and by preventing waste. One of the most important means of getting full value from paint at lowest cost is to get the paint in large cans, which are cheaper in proportion to contents than small cans; also to stir it and pour it until it is absolutely uniform in texture and pours out of a can like rich sweet cream. A woman wishing to paint the picket fence in front of her house bought a can of white paint and started to use it. But it produced a yellowish-white color instead of a pure white. Her complaint at the hardware store where she had purchased the paint finally revealed the pigment still a solid mass in the bottom of the can. She had been using simply the oil of the paint, and a thorough stirring yielded satisfactory results. While this is perhaps an extreme example, it is the commonest of mistakes and applies to enamels, shingle stains, and especially to cold-water paints. In shingle stains failure to mix thoroughly may result in marked differences of color. Shaking a can in order to mix the contents is too doubtful a method to trust. Stirring is better, but the most satisfactory way is to cut the entire top off the can, empty the contents into another clean container of the right size, and pour back and forth till the liquid is perfectly smooth. The larger the amount of material to be mixed the more important is the matter of thorough stirring and pouring so that the color and quality will be uniform.

An important source of waste is the number of coats and thickness of coats. There seems to be a belief that a great many coats of paint on a building will last longer and look better than a few. I refer to outside work. Three coats of paint are sufficient, and are actually better in most cases than four or five. A thin paint film is the more elastic and the more resistant to extremes of heat and cold. The subsequent coats are best applied at intervals of four or five years, thus keeping the surface fresh and bright.

PAINT may also be made less durable by putting it on too thick. A ready-mixed paint is usually of just the proper consistency, but for special purposes may be thinned with oil or turpentine within specified limits, and these limits should not be exceeded.

For interior woodwork, enamels are coming to be preferred to paint, owing to the greater durability, ease of washing, and better appearance. This applies especially to the woodwork of kitchens, dairy houses, and bathrooms where water is frequently splashed and where there is more or less vapor. Nor is the cost of colored enamels, such as cream, fawn, gray, and the darker colors, much more than that of high-grade paint. The difference seldom exceeds 50 cents a gallon. White enamel is more expensive, since for that the highest grade of clear gum is needed, but the colored enamels permit the use of an amber gum. This is less refined than clear gum, but is equally durable and less expensive.

For the inside walls and ceilings of barns and rough-finished buildings, well-made whitewash or a good cold-water paint is about as satisfactory a material as can be found. Even the best oil paints will not resist the ammonia from manure as well as whitewash and the water paints. When applied with a spray pump, a vast amount of labor is saved, and the coating not only brightens up the appearance of the place but acts as disinfectant. The use of a spray is a trifle more wasteful of materials than a brush, but the difference is more than offset by the convenience.

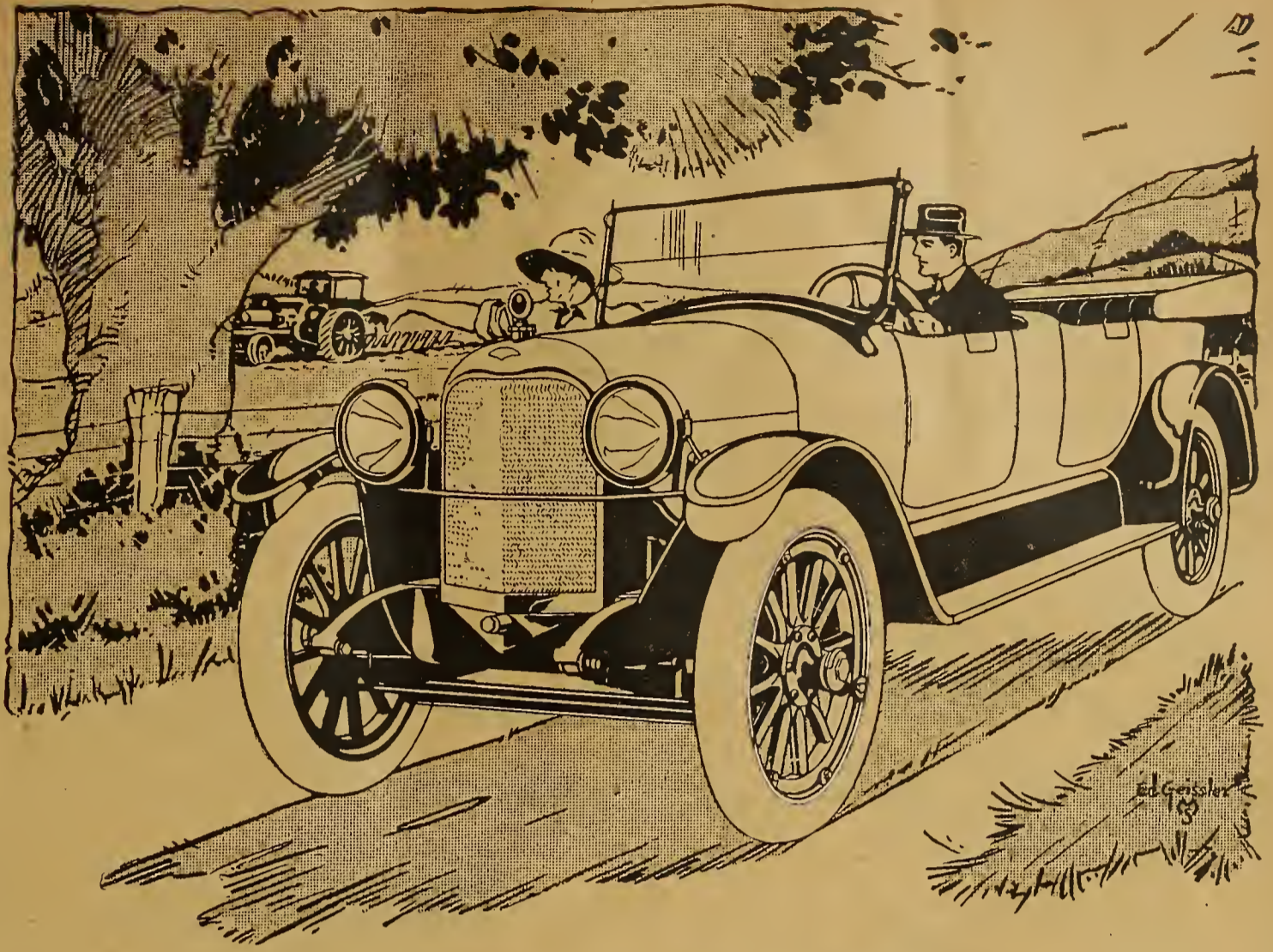
EDITOR'S NOTE: Questions relating to painting or decorating will be answered gladly by personal letter. Please state your problem fully and address the Building Editor, FARM AND FIRESIDE, Springfield, Ohio.

A Wide-Awake Dream

By E. L. Vincent

SOME day the world—that is, you and I—will always have a smile and a warm handshake for the other fellow.

We shall have time to sit on the fence and talk things over together, and drop a word of cheer as we look at one another's crops. We shall not brag so much, but we shall do a lot more patting on the back.



PAIGE

The Most Beautiful Car in America

The Final Test of Quality

IT IS a matter of record in fifteen of the principal cities that Paige used cars bring a higher price—proportionate to first cost—than any other American automobiles.

And here, after all is said and done, is the final test of quality.

A used car has been "through the mill." Its motor and all of its working parts have been subjected to constant strain.

Its "finish" has been knocked off—if it will come off at all.

Its gears, its rear axle and its transmission have endured the punishment of day-in and day-out pounding. All of its weakness is plainly evident—and likewise its strength.

The used car either stands before you a broken down, dispirited "has been"—or a strong, robust champion of many battles—ready and eager for all the service that man can give it.

That, we repeat, is the final test of quality.

And in this test the Paige stands supreme.

After fifteen, twenty-five, thirty-five thousand

miles of service, there is still enough GOODNESS left in a Paige to command the record price in used car markets.

Frankly, now, is there anything that we could tell you about our product that would be more convincing? Could you have any better guarantee that a Paige is all that we claim it to be—all that you could possibly expect it to be?

As to the selection of a model, this is simply a matter of your own personal requirements.

In our line there are two seven-passenger cars, a five-passenger car and two roadsters. You, alone, can make a choice, but please remember that you can't make a mistake. For all of these models are Paiges—blood brothers of the same strain. That is the really important thing.

But don't lose any time. See your Paige Dealer today. Let him give you the kind of demonstration that will definitely settle your automobile problem, and place your order while we can still promise early deliveries.

Linwood "Six-39" 5-passenger	- - - -	\$1175 f. o. b. Detroit
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No matter when you expect to buy I want you to have a copy of my big free Buggy Book right away. It will make you a better judge of buggies and buggy values. It will show you how I am saving my customers \$20 to \$40 by my direct from factory special price-splitting offer for 1917. Write for this free book TODAY.

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You will be proud to drive one, too. My new plan of splitting profits with my customers has cut the price down to bed rock. You can now buy a genuine Split Hickory—direct from my factory and save \$20 to \$40. Write for the free book today. See for yourself the money you can save. Address

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If you are interested in a new Harness or Farm Wagon, write for Catalog.



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Here are three mighty good reasons why you should buy Buckskin Tires in preference to any other on the market:

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We have a special offer to make. Write for booklet telling about it—also price list. 14

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Automobiles

Guard for Nuts

By W. V. Relma



A NUT which comes off is of no service. Such an accident

may occur at a very important place and be the cause of serious trouble. The sketch shows a method of locking which is very simple. A hole is punched or drilled in a thin piece of metal for the bolt. After the nut is screwed down tight the metal is turned up around the sides of the nut. In some places it is possible to turn two of the metal pieces up and two down, which is always certain to hold.

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On this unbeatable quality hot air furnace. Quick shipment direct from manufacturers. We Pay Freight. Heats the whole house through one register. Separate cold air returns. Easy to install. Powerful and healthful heating plant at money-saving price, cash or credit. Satisfied owners everywhere. Write today.

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KALAMAZOO STOVE CO.
Manufacturers, Kalamazoo, Mich.

A Kalamazoo Direct to You

Repair of Cord Tires

"HAVE cord tires any advantage over ordinary tires, and how are cord tires repaired in case of blow-out?" This question is timely because of the increasing interest in cord tires for automobiles.

As the name indicates, a cord tire is one having the body or carcass of the tire made from cords instead of from fabric. The cords are in two layers, crossing each other diagonally. Cord tires have been found to be more pliable, stronger, and more capable of withstanding the strain of high speeds than ordinary fabric tires.

Cord tires are repaired in the same manner as fabric tires, and any competent repairman can do the work. No special equipment is needed and regular fabric is used to reinforce the damaged spot.

Squeaky Springs Overcome

By C. A. Black



SQUEAKY and rough-riding springs are the lot of many drivers, but these can be overcome by simple

means. Separate the leaves and lubricate with graphite or heavy grease, and then bind with tape or cord and the lubricant will be kept in and the mud and dirt will be kept out. It will also cushion the action of the springs.

Racing drivers nearly always bind their springs in this manner, and when strong cord is used there is some evidence that the springs are considerably strengthened. The protection is also a means of preventing rust.

Auto for Belt Work

"WILL an automobile having an engine rated at 20 horsepower furnish enough power at the rear wheels to drive a buzz saw or ensilage cutter?" asks an Ohio reader who is anxious to make his car render full service.

Automobiles have been made to do such work fairly successfully for short periods of time, but unless some extra provision is made for cooling, the engine is likely to overheat. The better plan when driving large machinery is to get the power more directly by means of an attachment to the crankshaft. In that case the engine would deliver from 12 to 15 horsepower, which is more than could be secured from the rear wheels.

Prevents Fouled Plugs

By Ralph Williams



A FRIEND of mine had a car which gave him trouble by sooting up spark plugs and depositing carbon very freely. The first two cylinders of the car were the ones that caused the trouble, and he never knew when he would be called upon to change a plug. This interfered seriously with the pleasure of driving.

The method shown in the illustration proved effective in stopping his trouble, which was accomplished by beveling the lower edge of the groove of the pistons which cause trouble. This groove served to catch surplus oil and prevented its re-entring the combustion chamber.

CHANDLER SIX \$1395

See How the Chandler Checks With High-Priced Cars

Wherein and how does the Chandler excel other cars in its price field, you may ask. In many ways it excels and in all ways taken together it excels tremendously.

Now see how the Chandler checks with eight of the best known high-priced cars in seven features selected as being characteristic of high grade design and most excellent service.

- No. 1—Aluminum Crank Case.
Packard, Pierce-Arrow, Winton, White, Stutz, Mercer, Cadillac
- No. 2—Aluminum Crank Case, which ties the frame of the car together at four points at front and rear sides of the motor, giving perfect rigidity to the motor mounting.
Packard, Locomobile (bronze crank case), Winton, Stutz, Mercer
- No. 3—Silent Chains for Driving Motor Shafts.
Packard, Winton, Mercer, Cadillac
- No. 4—Annular Ball-Bearing Transmission.
Packard, Pierce-Arrow, Locomobile, Winton, White, Stutz, Mercer, Cadillac
- No. 5—Annular Ball-Bearing Differential.
Packard, Pierce-Arrow, Locomobile, White, Stutz
- No. 6—Annular Ball-Bearings for Rear Wheels.
Packard, Locomobile, White, Stutz, Mercer
- No. 7—High Tension Magneto Ignition.
Pierce-Arrow, Locomobile, Winton, White, Stutz, Mercer

Chandler Has All These Features

Chandler checks with the high-priced cars. Chandler performs with the high-priced cars. The manufacturer of one Six can make just as big claims as any other. The Chandler Company likes to deal in facts.

For years the Chandler Company has made the Chandler a fact-car, not a claim-car.

Claims sell a lot of cars, but facts sell more cars, just as fast as the buyers learn the facts.

The Chandler is honestly built and moderately priced. There is no other Six selling at anything like the Chandler price which will give you so much dependable service.

So many recognize its superiority that the Chandler has earned a front rank position in the industry. So many recognize it that twenty-five thousand buyers this year will choose the Chandler as the Six to be preferred above all Sixes.

Choose the Fact-Car for Your Car

- Seven-Passenger Touring Car, \$1395
- Four-Passenger Roadster, \$1395
- Seven-Passenger Convertible Sedan, \$2095
- Four-Passenger Convertible Coupe, \$1995
- Limousine, \$2695
- All prices f. o. b. Cleveland

Write to-day for name of Chandler dealer nearest you. We will send you complete catalog

CHANDLER MOTOR CAR COMPANY, Dept. DD, Cleveland, Ohio

That Boy of Mine

Guiding Him Safely by the Crossroads of Youth

By BEATRICE BRACE

OUR farm papers tell us how to raise more corn, to feed more hogs, to buy more land; they tell us how to eradicate rabies, how to feed cheaply, how to produce more milk, raise better poultry, how to keep our land producing up to its highest capacity, how to operate and increase the fullness of the automobile; but back of all of this is the biggest thing on the farm—the human product, and of the human product "that boy" forms one of the chiefest assets.

The late Henry Wallace said: "Do you know that the biggest thing in life, whether in the city or country, is to be just a fine human being, interested in all things that interest or should interest all human beings?"

Next to the girl, "that boy" is the most precious possession we have, and it pays to put our best into the human product and, second best, if need be, into the live stock and soil.

Don't think because the boy has quit school that the end has come. Many great men have had little or no education, and all life is a school. And don't think that feeding the slot machine and games of chance are sure roads to the devil. Rather refuse to believe there is a devil or to yield those boys to his influence.

We can't mold everyone in the same cast, not even if they are brothers and sisters, and if you have found it impossible to interest your boy on the farm, then let him try something else.

But before you give up the idea of interesting him in the farm, see if you are going about it in the right way. Many a boy who rebels against the drudgery of weeding and plowing and planting and digging will do twice as much with good grace if his father makes him a partner in the farm firm. The boy must be given an opportunity to try out his pet schemes too, even when sometimes the riper experience of his father tells him that he is making a mistake. Work right with your boy, not over him, if you want him to stay on the farm.

If you can't get him to see things from your point of view, then you see it from his, and don't arouse a spirit of antagonism. One day when our youngest boy was seventeen years old and in his third year of high school, he came home and, throwing himself down in a chair, said, with a force and finality I knew was useless to argue against: "Mother, I'm not going to school any more. I'm going to see a little of the world before I die."

I had seen it coming for a long time, but seemed powerless to prevent it, so I just said: "Well, if that is the way you feel, you might as well not go; but I'm afraid you'll be sorry, Little Boy." So he went to work in a store in the near-by town, and it really proved a blessing in disguise, for a financial crisis came up, and instead of "seeing the world" he helped tide us through. A year later he went back to high school, taking six subjects in order to make up the lost time, and was graduated that year.

When He Played Pool

Unusual boy? Indeed, no! When he was about fourteen it so happened that the school that he attended was in session only half a day for the whole term, and he was in the habit of getting home about one o'clock. For several days he hadn't come until three or four, and I mistrusted he was spending his time and the small allowance we gave him in a pool hall. So one day I dressed and went down-town, intending to find out. I knew there was a pool hall where many high-school boys were in the habit of congregating, many of them, in fact most of them, from the best families in town. But mark this: It was on Main Street—the doors were wide open and drinking and gambling were not allowed. I knew this, but still it seemed a terrible thing for my boy to be playing pool.

Well, when I finally stopped in front of that pool hall my heart sank, but I

took a deep breath, mustered up all the courage I possessed, and went in. I asked the man in front if — was there. He said, "Yes, I believe he is." I stepped up to the wide-curtained doorway and looked in. There he was with several other boys so deeply engrossed in knocking those innocent-looking balls about that he never once looked up.

My heart stopped beating! The end of the world had come! My boy was on the road to the devil.

But the thought with all its sickening despair no sooner came than I knew I would never yield him to that influence. With an inward prayer that I might be "wise as a serpent and harmless as a dove" I drew aside the curtain and walked up to him and stood at his side before he ever saw me.

When he did, his face went white, half with anger and half with mortification, as he stood looking down at me. But he was game, and taking me by the arm marched out with me with head high. Not a word was spoken, but as soon as we were outside he swiftly turned and left me to a most sickening tumult of doubts and fears as to whether my course had been a wise one.



Many a boy who rebels against the drudgery of farm work will do twice as much with good grace if his father makes him a partner in the farm firm

He was sensitive, high-strung, inordinately proud, and more than a little self-willed. Had I been "wise as a serpent and harmless as a dove"? I didn't know.

Breathing another prayer for guidance, I hurried home, not knowing what mood I would find him in, and not knowing what to say to him when I arrived there.

I found him lying on the lounge in the living-room. He glared at me when I went in, but not a word was spoken until several days after, when we had a quiet talk and I told him I would repeat it if it occurred again, but I knew that my influence in the future, as in the past, lay in meeting him on his own ground. For instance, he was not by nature sanctimonious, and when he went to church some of the boys whom he knew would get up and talk in endeavor, calling themselves "poor miserable sinners," etc. This always seemed to call out a spirit of antagonism and skepticism in him. So I instinctively and gradually took to teaching right because it was right; that society was based on the morality of its people; that we surely reap, even in this life, what we sow. Even so he admired a certain "sportiness" in dress and appearance, and I met him on that score; things that he was interested in I was interested in. Then when it came to things that were really vital my influence counted.

One evening when he was nineteen, the year he was graduated from high school, he had gone into town to a picture show and, as was my usual custom, I was sitting up until he came home. I

had always done this, and some of our chummiest times had been when he had been to some gathering and came home and told me all about it; I enjoyed it as much as he did.

But this night he didn't come. Eleven o'clock came and he didn't come. Twelve o'clock came—where could he be? It wasn't like him, for usually if he made some other plan he called up and told me so, for he knew I would be waiting for him.

The hands of the clock slowly dragged round to one-thirty when his quick step finally sounded on the walk outside.

I just looked up at him mutely when he opened the door and came in. My heart was far too full for words just then. He gathered me up in his arms and gave me one or two quick kisses and went to his room.

He is Making Good

The next day when we were quietly talking it over he said: "No matter where I go or what I do, Mother mine, way back in my subconscious mind I am thinking of you, and something keeps me from going very far wrong."

The final outcome? "Did he go to the dogs?" No. That fall he went to college, and two years later he was graduated from a university course, and soon after he accepted a hundred-dollar-a-month position with chance of steady advancement, and he is making good.

He has fixed ideals and the firm belief that he can attain them; that every earnest hope and longing is possible of fulfillment; that the power to attain the desires of our heart is implanted within each one. He is reaching out toward the goal of a "fine human being."

What a world of wisdom in those words of John McCallum in "Happiness Incorporated," "Out of the fullness of my anxiety grew the satisfactory solution!"

But we can't stand aloft on a pedestal and steer our boy into the gates of heaven. We must go every step of the journey with him, wrapping him in a love that breeds sympathy and understanding rather than an irresponsible indulgence, and listen often to that "still small voice" that alone gives the wisdom that is "wise as a serpent and harmless as a dove."

Don't try to mold him in the plaster cast of another's individuality; instead, wisely guide and direct his own into the right channels.

Get your boy's viewpoint. Ninety-nine times out of a hundred there is no thought of evil in his heart or mind, and Shakespeare says: "There is nothing either good or bad, but thinking makes it so."

It Will Never Die Out

By Edgar L. Vincent

IF YOU and I had a farm as big as I might be covered by the sheets of paper that have been written over by men and women complaining that this world of ours is growing cold and selfish, we should have more land than any of us ever will own. Let me say all I have to say in reply to this wicked charge against the men and the women of our day in just four words. It is not so!

A neighbor of ours had a nice young horse get sick one day. I know of men with so much of human interest and love in their hearts that they went to the help of that neighbor, sat up with the poor suffering animal night after night for days and days. It was cold in the barn, but they did not mind it. They gave the horse its medicine, rolled up in horse blankets, and wormed their way into the haymow until it was time to care for the animal again. Only a horse, but it was a living thing, with a heart in it; and it belonged to a friend.

No; love will never die out of the human heart. It may seem sometimes as if men are too busy to be good and kind, but let anything happen to the humblest farmer in the community and the grass will be all tramped down about his door by those who come to do him a good turn.



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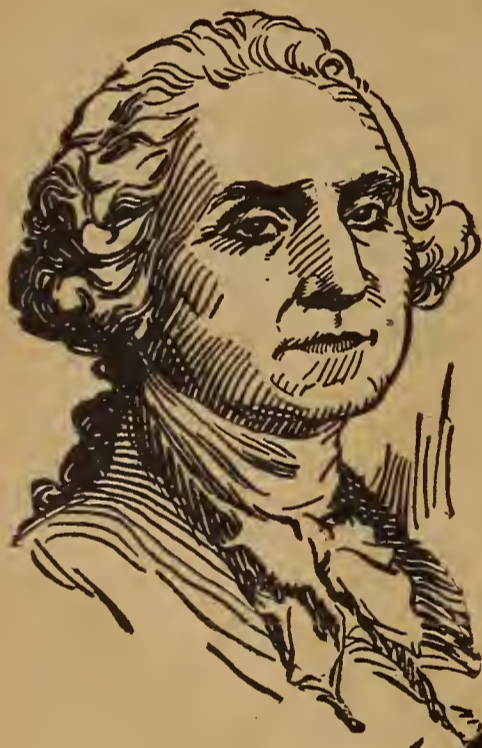


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Night Driving

By Carlton Fisher

SOME car owners seem to have an aversion to using their automobiles much after dark. But there are so many special occasions, such as going for the doctor or meeting a friend at a train in the evening, that the ability to drive a machine at night as well as in the daytime is worth acquiring.

The pleasure of riding at night is also enhanced by the smoother running of an automobile engine, owing to the greater humidity of night air. As the result of considerable night driving I have found the following simple precautions most helpful:

Be sure you have plenty of gasoline. Filling stations are hard to find at night, and sometimes they are closed.

Take several extra lamp bulbs and be familiar with the method of changing them.

Travel familiar roads if possible, and give preference to wide roads where there is plenty of room for two machines to pass.

Travel roads that are well fenced, for sometimes farm live stock, hogs especially, will be attracted by the lights and run out into the road.

Before taking the machine out of the garage, examine and rearrange the contents of the tool box so that supplies may be quickly found if needed.

Take a battery flash light for possible use in locating small articles which may be dropped in the car and for any necessary adjustments.

Finally, have a cloth handy with which you can wipe off the windshield



Cars having complete electrical equipment are most satisfactory for night driving

in case of fog, rain, or snow. The various windshield cleaners are also good. I have traveled many hundreds of miles at night and have fortunately never had engine or tire trouble in the dark, largely as the result of keeping the car in good condition. But scarcely a long trip is taken but what I am obliged to clean my windshield from mud or mist.

Baggage in Trailer

By Eves E. Whitfield

ON ATTEMPTING an overland trip the question of disposal of baggage is probably the greatest problem.

When roads are not rough, an automobile trunk gives greatest satisfaction. If one does not care to purchase the trunk because of added expense, or to use one because of the added strain when traveling over rough roads, satisfaction may be gained in another way. I have been over such roads in three States.

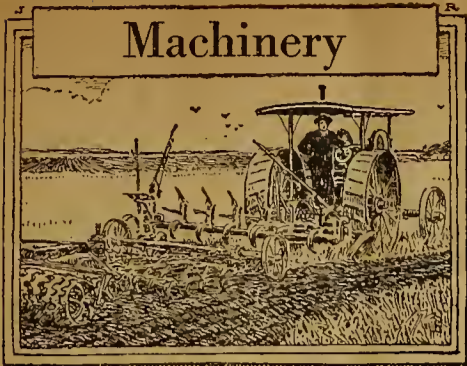
We found it convenient to place the suit cases, enclosed in oilcloth covers to keep out the dust, between upright braces, three inches wide, attached to the running boards. A strap placed about the running board and suit case kept it in place.

Two summers ago, a friend made the trip from Iowa to California in his five-passenger car with five adults, with a trailer carrying the supplies for the party.

The box of the trailer was wood reinforced with iron strips. It was square, just a few inches less in width than the car, and 18 inches in height. It was mounted on two wheels, and balance was secured by careful packing, which kept it from tipping too far back or forward.

In the trailer were five suit cases, five sleeping bags, five chairs, a table, a tent, a stove, water bags, an extra can of oil, a canvas cover for the car, and cooking utensils and supplies.

The loaded trailer weighed 800 pounds, was covered with canvas to protect the contents from rain, and went through to the coast without causing the slightest trouble



Machinery

Header Brings Success

By E. O. McCain

I MADE my own way from the time I was fourteen and spent all I earned. When at twenty-four I was married, I had nothing. I tried to farm, and for the first four years (1909-13) did not raise any crops to speak of. I had secured a span of three-year-old mares on credit, gave a \$375 note for them and a set of harness.

The note came due and I could not pay it, so I paid the 10 per cent interest, \$37.50. The next two years I paid seven per cent, and it took all I could raise those four years to support my family and pay the interest. But during that time I raised six good colts from those mares. I bred my mares to the best stallion I could find, and paid \$15 for the insurance of each colt. The mares, harness, colts, and interest all came to \$549 in those four years.

Still raising nothing, we lived on bread and beans. The way I got them was to borrow my neighbor's old fiddle and play for dances. They paid me \$2 a night, and they had a dance every two weeks, so I made \$4 a month to support me and my wife and two babies.

Finally we moved to the sand hills of Nebraska. I did not raise anything, but managed to buy a header. I cut 4,050 acres of wheat for my neighbors at 50 cents an acre, which brought me \$2,025. I sold some colts and paid all my debts, amounting to \$700.

Raising colts and cutting wheat for my neighbors was thus my first stroke toward success.

Pounds Torpedo

By Eugene Crowden

I CAN say from experience, "If you don't know what a strange object is, don't be too curious." One morning I was herding cows for my father, and for pastime was walking along the railroad which runs by the farm. I noticed a funny-looking object and picked it up to see what it was. I didn't know, so began breaking it to pieces. When I couldn't get any more of the outside coating off, I decided to hit it with a rock and break it open. This I did, and to my sorrow, for it was a railroad torpedo such as are put on tracks to warn or signal a train that another is close ahead.

It exploded, burning my arms, neck, and face, but, worse than that, it knocked me unconscious. When I came to I went to the house with blood running down my face till I could hardly see. Mother looked at me and at once sent for the doctor.

When the doctor examined me he found a piece of tin nearly an inch long and as wide as your little finger had gone in below the eyebrow, the point coming out in my forehead. He came to see me every day for seven weeks, and I still have the scar. I do not care to see the inside of another torpedo.

Rocks in Concrete Wall

By J. E. Freeman

A VIRGINIA reader wishes to construct a permanent wall around a lot, and wishes to know whether round river rocks can be used in connection with concrete.

Round rocks can be used with Portland cement mortar or concrete to good advantage in building an attractive wall. The rocks may be laid in cement mortar to form a rubble wall, or they may be used as facing for a wall of concrete, topped with a concrete coping.

If the rocks are laid in mortar, use a mix of one sack of Portland cement and two and one-half cubic feet of clean, coarse sand for the work, and see that each stone is wet before placing, so that moisture will not be drawn from the mortar and weaken it.

Hydrated lime may be added to the mortar, if desired, in the proportions of 10 per cent by volume of the cement, in order to make the mortar more plastic and workable. The mortar, however, must be used within forty-five minutes after mixing, and the size of a batch made at one time should be regulated accordingly.

To build a low concrete wall with rubble facing, erect forms in the usual manner, set stones in place against the outer face of the form, and fill behind them with concrete mixed to a quaky consistency. Use a concrete mixed in the proportions of one sack of Portland cement, two and one-half cubic feet of sand, and four cubic feet of pebbles or crushed stone, varying from one-fourth to one and one-half inches in size.

After the concrete has hardened sufficiently to permit the removal of forms, but while it is still green, brush the exposed surface of the stones to remove any coating of cement adhering to them, and to bring out their color and texture. This same finish would also apply to a rubble wall laid in cement mortar.

A coping for the wall can be cast in place, or it may be made in separate units, cast in molds which are later put in position. For this part of the work a 1-2-2½ mixture with coarse material not over three-fourths inch in size will produce a smooth surface of good texture. For either type of wall the foundation should be of concrete, carried well below frost line.

Breaking Quack-Grass Sod

By D. S. Burch

PERSONS who consider their farms badly infested with quack grass, may perhaps regard their own troubles more lightly after seeing the quack grass in the picture. The grass is tall and tangled, which accounts for the considerable amount showing in the plowed ground. This land is near St. Louis, Missouri.

In such fields one practical method of quack-grass control is plowing followed by constant cultivation until the roots



A powerful tractor and sturdy plow are needed to plow through quack-grass roots

have dried out or have been removed by the teeth of harrows and cultivators. The task of breaking such a field is a tremendous strain for horses, owing to the toughness of the roots, but the tractor is pulling a three-bottom engine gang with comparative ease.

Tin Shingles for Repair

By Wm. E. Curley

A LEAK in a shingle roof may be due to any one of a variety of causes—a nail hole, a rotten shingle, or careless laying so as not to lap properly may be the trouble. But nine times out of ten the leak is caused by one or more split shingles. If you can get to the under side of the roof, as in a barn or unplastered attic, the leak is usually easy to locate. The discoloration of the sheathing will lead to it.

Drive a nail through the roof from underneath to locate the place more easily from the outside. If there is nothing to cause a leak at that point, investigate further up on the roof, as the leak may be higher than you imagine, the water following the sheathing or rafter until it finds a place to drip off.

Then take good tin, well painted on both sides, and cut into pieces 4x7 inches. If a shingle splits, that brings three joints in a line and water is carried directly into the sheathing. Pry up the butt of the split shingle and slip one of the pieces of tin under the split place the full seven inches. This gives a lap of one inch under the next course above. Then slip another piece of tin over the split shingle and under the next course above. This completes the repair.

Even if there are numerous split shingles close together, this method of repairing is much more satisfactory than tearing off or replacing a number of bad shingles.

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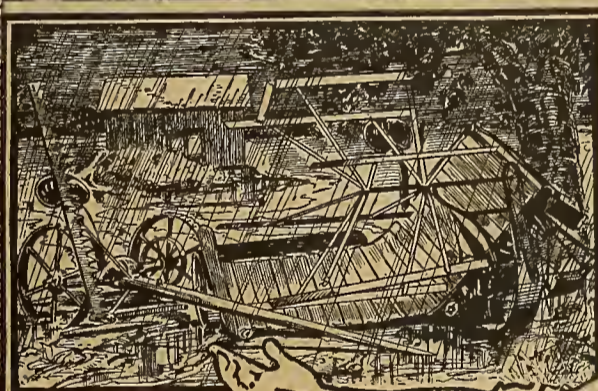
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Live Stock

Oats as a Horse Feed

By Blake Smith

OATS in comparison with any of the grain rations is the best single ration for mature horses, colts, or mules. There is no other grain so safe to feed and from which such satisfactory results are obtained. It is absolutely necessary that the oats be free from smut and be clean to obtain the best results in feeding to colts. Musty oats are dangerous feed for colts.

Here is a good oats ration for colts after weaning: Up to one year of age, from two to three pounds a day; from one to two years, four to five pounds a day; from two to three years, seven to eight pounds daily.

The best way to feed oats is in the whole grain. The expense of crushing is not justified unless colts suffer in teething, in which case it is advisable to feed steamed crushed oats, which are very appetizing. It is a good plan to feed plenty of roughness to growing colts.

The feeding of concentrated feeds to excess is discouraged, as it is important that the digestive tract be developed by distending it during the growing period.

Ungainly, large-barreled colts may annoy the feeder, but this condition always disappears with maturity. Proper feeding of colts should always be accompanied with plenty of exercise out of doors. In no way can a colt be ruined so easily and surely as by a liberal feeding with lack of exercise. Close confinement and the rearing of good colts do not go together.

Rearing Spring Litters

By John Coleman

A COMFORTABLE house with dry bedding means much to the spring pigs. In fact, all other conditions may be perfect, and yet if this point is neglected failure may result. It is a wise plan to get the pigs on a milk or a milk and shorts ration by the third week of their existence if possible. This may be done by building a small creep or pen near their sleeping place and putting milk in a small shallow trough in it.

The pigs will soon learn to eat. The amount of feed can be increased as they advance in age, but they shouldn't be fed more than they will clean up nicely. An occasional scalding and sunning of the trough will keep it clean.

The first four months of a pig's life determine largely what his after success is. Never let him lose his pig fat during this time. Prepare for ample grazing as soon as the soil is warm enough by sowing rape or rape and grain mixed. This can be grazed by the pigs within six to eight weeks after sown. Allow them to run on any green crops, especially clover or vetch, as soon as they will graze.

A succession of field grazing crops maturing through the summer and fall will supplement their daily grain ration, and will enable them to produce their gain at a profit. Pigs fed on grain alone, with little or no grazing crops, will return little or no profit.

The Ram Half the Flock

By Andrew M. Paterson

A RAM is half the flock. A good ram will impress his desirable qualities on his offspring. The ram must be strong in the points in which the ewes are deficient. It is a well-known fact that like begets like, and if both the ram and the ewe are weak in the same points these weaknesses will be intensified in the offspring.

If the flock is small, a ram lamb will be all right. If there are more than 30 ewes the ram should be two years old. The ram selected will depend upon the type of ewes in the flock. If the ewes are small and light-boned, a heavy-weight and heavy-boned ram will be needed. A ram with more refinement should be used if the ewes are coarse-boned and rangy.

In selecting the ram, special attention should be paid to type, mutton qualities, and denseness of fleece. Quality of mutton is the prime factor in the farm flock, and should receive the most attention. The fleece should not be forgotten, for not only will the fleece be a source of income, but a good fleece will give a higher market value to the sheep.

The ram should be strong, active, and show strong masculine character. These points are important, for on them will depend to a large extent the number of lambs produced, also their health and vigor. The ram should stand up well on his feet, and his pasterns should be strong. The back should be strong and the ribs well sprung to give plenty of room for the heart and lungs.

Dehorning Feeder Cattle

By Marshall Taylor

MANY stockmen dehorn the stocker and feeder cattle or calves to be kept for feeders. The chief advantages of dehorning are convenience and economy in the feed lot and in shipping, and possibly a slight increase in market value. Animals being fitted for baby beef should not be dehorned, as with horned breeds the age can be told approximately by the horn, and when the horns are removed the buyer may suspect an animal of being over age limit and may cut down somewhat on the price.

If a feeder is raising his own calves, the best method of dehorning will be found to be an application of caustic soda or caustic potash when the calf is a few days old, or when the button can be felt through the skin. Wet the stick of caustic slightly and rub it well on the skin over the horn after first clipping the hair off the region. Do not get the stick too wet or it will be apt to run down over the side of the head, burning off the hair and causing needless pain.

When dehorning is not done at this time, it is advisable to wait until the horn has made a fair growth and then use either the saw or the clippers, which must be used in either case if the feeders are purchased. Clippers are quicker and less painful than the saw. They make a cleaner cut, which bleeds longer than that made with the saw. In either case the horn should be cut a little below the union of the horn and the skin or the horn will begin to grow again.

For most parts of the United States the best time to dehorn is the first part of April or the latter part of October; that is, neither in really cold weather nor in fly time. In fly time the animal is somewhat run down and flies cause great suffering, prevent the wound from healing, and are a source of infection. It is best for a few days after the operation not to give the cattle dusty hay or other feeds in which there is much dust, as the wounds are liable to become infected and cause trouble.



These Berkshire barrows, reared on an Iowa farm, won first place in their class at the last International Live Stock Show

Early Sheep Shearing

By Daniel Prowant

I HAVE practiced shearing sheep early for a number of years and I would not care to resume the practice of leaving the wool on the sheep until late.

I figure that I cannot afford to cause the flock a month's or six weeks' discomfort for the sake of an ounce or two of weight or an extra one-eighth inch in the length of wool. Early shorn sheep are no more subject to colds than if the wool is on. The reason for spring colds is usually exposure to cold spring rains, and sheep should be kept out of such rains, whether shorn or not.

I always shear my own sheep. Not being able to get the work done when I wanted it caused me to undertake the job, and I do not depend on waiting until someone else gets ready to do it for me. In regard to what is called early shearing, I shear whenever the weather becomes warm enough to cause the sheep much discomfort.

To shear I set the sheep up on its buttock on a clean platform or floor. I begin at the head, splitting the wool down the throat, breast, and belly. I shear the entire head and neck first, with the sheep resting against me. When the shoulder is reached I shear the side, back, and half of the belly away from me, and then step to the other side and shear down, with the sheep resting with the shorn side against me.

In this way, if the sheep does not kick too much, the wool comes off in one unbroken fleece. At no time during the operation must the sheep get its feet on the floor. If it does trouble is sure to start. As long as all four feet are off the floor the sheep will make no effort to get away. I carry a little strap so I can cross the hind feet and buckle them. A professional sheep shearer will laugh at this, but I prefer to do it rather than run any chances of having the fleece matted up.

To tie the wool, I still like the use of the old wool boards, as it leaves the fleece in better shape than tying by hand. In the absence of these I use a half-bushel and with very large fleeces a bushel measure. I place three strings of wool twine across this measure. Working the fleece into a loose ball, flesh side out, I start it into the measure with the back of the fleece down. When it is in the measure the belly will be well worked in towards the center. The twine is then brought up and tied on top, and when taken out the fleece will be in a neat, compact bundle, flesh side out, and the work will be almost as well done as by the use of wool boards.

In case I do not think the market on wool to be sufficiently strong to warrant the selling of the wool as soon as shorn, I select a large box as free from holes and cracks as possible, large enough to hold the wool. I line the box with one or more blankets and start packing the wool in the bottom as tightly as possible. When the wool is all in, I place another blanket over the top and put on a tight lid. The box should be placed on blocks at least a foot off the floor, to lessen the chances of mice working into it. When handled in this way wool will stay in prime condition a long time, and I have never had any loss from shrinkage. I have weighed the wool when put into storage and again when it came out, sometimes a month later. When well packed it has never lost in weight.

Sheltering Beef Cattle

By Miller Sanderson

A WELL-VENTILATED and well-lighted dry shed is essential to protect beef cattle from the driving winds and rains. The land where the shed is located should have a natural slope and, if possible, be near a grove. Where a natural southern exposure is not available, the place should be supplied with drains so as to keep it dry, as dry lots are essential for the best results.

If the shed opens on the south and is closed on the east, north, and west, it will give very good results. The main value of the shed is to protect the cattle from hard rains. The amount of shed roof depends on the age and size of the animals. Between 40 and 50 square feet is sufficient for a large two-year-old steer.

The feed bunks should be conveniently arranged so as to make feeding as easy as possible. From 2½ to 3½ feet of feeding space for each steer is sufficient, but this depends upon the size of the animal.

The size of the feed lot depends upon conditions. Where there is no natural slope to the ground and it is necessary to use drains, or cement floors, yards the size of the shed floor are sufficiently large for cattle on full feed. Where natural conditions exist, the yards may be larger. Good, clean, fresh water should be kept before the cattle at all times.



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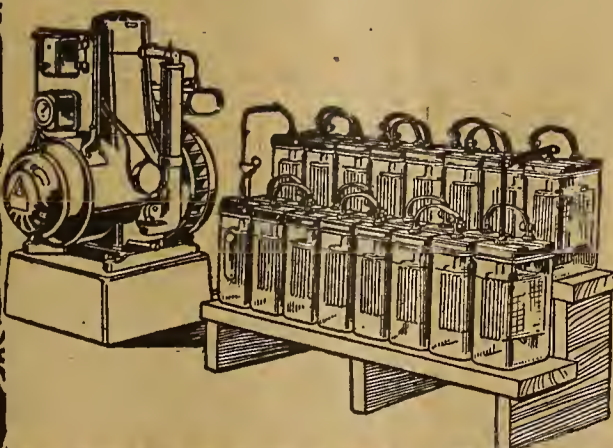
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I MET HIM ON THIS VERY SHIP!

It was within an hour of sailing time. I was on my way home from Europe five years ago. The Mauretania lay beside her Liverpool wharf. Everybody was hurrying to get on, as we were to sail at five o'clock. Suddenly, without warning—without a propeller turning—she commenced to pull away from her moorings. The gang planks creaked—broke loose—and there was quite a commotion as the mighty Mauretania tore loose from her moorings and floated out into the water. In the excitement I met a man who was leaning over the rail who looked at me and we laughed together. Then we just naturally got acquainted like people do when they are traveling. He was J. J. Berrigan of Orange, New Jersey, the famous cream separator expert and inventor. I had never seen him before but I had heard of him. I told him I was from Waterloo, Iowa, and he said, "You are Galloway." I soon found out he was the great cream separator expert and a man I was glad to meet. Naturally

WE BECAME WELL ACQUAINTED

He told me what he had done in perfecting cream separator patents and improvements. I told him he was just the man I was glad to get acquainted with. After the Mauretania had been lashed to her wharf again, the excitement was over, and we pulled out of Liverpool several hours late—Berrigan and I began to talk cream separator, and every day after that we spent several hours together visiting. I told Mr. Berrigan that we were perfecting what I thought was the best cream separator ever produced, and I also told him if he would come to Waterloo and put on the finishing touches, go over the separator, test it, criticize it, find fault with it wherever he could, and suggest any possible improvements, I would pay him well for his time. In a few days after we landed in New York he did come to Waterloo. He said our separator was one of the finest designs he had ever seen, and with the few recommendations which he made, he pronounced it O. K.—good as the best—and better than many of the separators on the market to-day. Our engineers, designers and separator builders had produced a machine with graceful lines, simplicity of construction, combined all the good features and left out all the faults. Mr. Berrigan commended us on the work and immediately put his stamp of approval upon this machine. That's why I say

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before we offered it on the market. We put out in the hands of farmers and dairymen enough of these separators to know that they would stand up under any test, whether operated and used in the kitchen, the milk house, the creamery or elsewhere, used two or more times per day, every day, week after week, month after month. I just want you to try it. If you like it, buy it. If you don't, send it back. We pay freight both ways. If the New Galloway Sanitary Separator is as good as I say it is you can't afford to buy any other kind. If it is not as good as I say it is, I could not afford to make this ninety day trial offer and I could not afford to guarantee it for ten years.

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It tells of how we took four years to design and perfect this separator, to build into it every good cream separator feature and retain its beautiful proportions. How we did not build it down to a price, but built it up to a high standard in our own factories right here in Waterloo. It tells how we build Galloway Sanitary Separators from the ground up. How they are designed and many other separator secrets and facts. A meaty, exact, concise, truthful book about cream separators, gasoline engines, manure spreaders, tractors and other implements we manufacture. Why, by selling direct, I can make a machine as good or better than any high priced separator sold through other systems. These are a few of the reasons why I want you to get this book. It tells the whole story. Ask for it today. A postal gets it. Don't delay. A reading will save you dollars in buying.

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We know it skims close. It paid for itself. Wm. S. Brower, Farnum, Idaho. It is easier running and more easily cleaned than others. I wouldn't exchange it for any high priced separator. E. F. Louthan, Carthage, Mo.

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Stand it side by side with cheaper machines and you will see the difference in material and workmanship, design and skimming qualities. Stand it beside the highest priced machines, test them together for months! Higher priced machines will not run any easier or skim any closer and cannot be more perfectly sanitary or better built. We want you to be the judge—we will take your decision as final. Separators shipped from Waterloo, Council Bluffs, Kansas City, St. Paul, or Chicago, whichever is nearest to you.

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Note these few strong, simple, sanitary parts. Easy to wash clean—no rough edges—no sharp corners. Bowl catches any foreign matter in the milk. Only two shafts in the whole gearing—both of high-carbon steel, in long, perfectly fitted bearings. All gear shaft and both bowl spindle bearings supported by one casting—the gear case. All the working parts run spray of oil. Simple, effective driving clutch on crank shaft.

4 Good Sizes From 375 to 950 lbs. Capacity per Hr.

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Dairying

Dairy Show at Columbus

W. E. SKINNER, general manager of the National Dairy Show Association, announces that the 1917 show will be held at Columbus, Ohio, October 18th to 27th inclusive. It will be held on the state fair grounds, and will be housed in a new \$200,000 coliseum.

Although dairy exhibits will be the principal features of the show, there will be included a horse show, motor-car exhibit, and a large display of trucks and tractors.

Cinders for Concrete Silo

By Calvin Fraser

"CAN cinders be used in place of gravel or crushed stone in making concrete for a silo?" writes a Pennsylvania reader. He explains that he has plenty of clean cinders but that gravel and sand would have to be hauled such a distance as to make them very expensive.

Cinders properly screened, so that all particles under a quarter of an inch in diameter have been eliminated, make a fair grade of concrete, but not so good as well-screened and graded pebbles or crushed stone would make. In order to make a non-porous wall the mixture should not be leaner than one sack of cement, two cubic feet of clean coarse sand graded from finer particles to those passing a one-fourth-inch mesh screen, and three and one-half cubic feet of screened cinders. The cinders should be composed of clean vitreous clinkers, free from sulphides, unburnt coal, and ashes.

Bitter Milk Avoidable

BOTH the quality and quantity of a herd's milk production depend on the physical fitness of the cows as well as on the nutrients in the feed. Bitter milk and milk with a strong odor both indicate that something in the cow's digestive system is out of order. A few doses of Epsom salts are frequently of benefit, but a better method is to so choose the feed that disorders will not occur.

Among dairy feeds that are inclined to be constipating and a cause of bitter milk are: Corn fodder, corn stover, timothy hay (and most hays except those from leguminous crops like clover and alfalfa), all straws, cottonseed meal.

Among the feeds that are laxative in their effect on the system are: Linseed meal, wheat bran, silage, hay from the legumes, roots, tubers and fruits, all fresh green feeds.

The use of feeds in the second list will in a large measure prevent bitter milk and also the difficulties of churning cream skimmed from such milk.

Short-Sighted Feeding

By E. A. Wendt

SOMETIMES the man who is not much interested in dairying and keeps but a few cows gets short of bran, oil meal, and other feeds of laxative na-

ture. These are necessary, particularly in spring, to keep the digestive system in good working condition.

Heifers and dry cows are commonly the first sufferers in such cases, as they are most likely to be cut down to dry rations first, and before one notices they are constipated. Next comes indigestion, and frequently the loss of a cow or heifer, since the dry, bulky matter in the intestines makes relief extremely difficult and efforts in that direction may result in inflammation.

Even if an experienced veterinarian is called promptly, the danger is great, as I know from having assisted with several such cases under different graduate veterinarians of wide experience.

Well-meaning but non-professional advisers, each obsessed with a belief in the virtues of his remedy, will often spoil the case for the doctor, even if he had a chance to make good. But this is none too probable unless the case is discovered more promptly than is common on farms where the few cows are looked upon as only a side line and given no special care.

Of course, such complications are rare on real dairy farms or where silage is the foundation of rations; but in any case they may be avoided by allowing each animal a reasonable and regular portion of good bran, oil meal, or other laxative concentrates, and it is far less expensive to avoid complications in this manner than to pay a veterinarian, even if he is successful. Besides, such additions to rations always pay for themselves in the regular routine if the animals are worth feeding anything.

This applies also to horses, mules, and more particularly to colts. Naturally, a well-balanced ration is most desirable for all animals.

Stripping After Machines

"IS IT necessary to strip a cow by hand after she has been milked with a milking machine?" This question is frequently asked, but can be answered only in a general way. The kind of machine, the condition of the cow, and the adjustment of the teat cups all have to be taken into consideration. Professor C. Larsen of the South Dakota Experiment Station comes to the following conclusion after experimenting with seven different kinds of milking machines for about five years:

"Many cows need no stripping. The operator soon learns from the amount of milk and from the looks of the cow's udder whether the cow is milked clean. However, to be sure, the operator should try every cow by hand. This should be done at once after milking. It may be accomplished by shutting the vacuum off and stripping directly into the teat cups, holding the cups in the left hand and stripping with the right; or it may be done by stripping into the pail."

These remarks apply to seven well-known milking machines as perfected up to last spring. What has been the experience of FARM AND FIRESIDE readers who are using modern milking machines?

Drainage in Barnyard

WHEN building a dairy barn, attention to good drainage will result in various benefits not always apparent at first. In early spring and after heavy rains, a well-drained yard will be drier.

Building on a small knoll is frequently the means of providing running water from the barn roof. Such a cistern has the advantages of an elevated reservoir and water from a barn roof is usually cleaner than from a house, owing to the absence of chimney soot.



There is good natural drainage here. Dry barn lots enable the cows to keep cleaner, and there is less trouble from hoof diseases.

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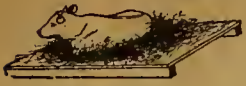
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Dry Sleeping Platform

By Edward Newman



KEEPING the suckling calf dry and comfortable when in the barn is a problem that confronts the practical dairyman. No matter how much bedding is used, it does not seem to absorb the moisture completely, and the calf presents a bedraggled condition in twenty-four hours. In addition, any solution to the problem must economize on time, labor, and barn space in order to be practical.

The sleeping platform illustrated is practical, simple, and altogether successful, and it has the further advantage of being portable. It is made of two 2x4's, each three feet long, and three 1x12-inch boards, each two feet wide. The 2x4's are placed on edge, parallel to each other and two feet apart, and the boards are nailed to them, thus making a small platform. The bedding is placed on this and the calf soon learns to lie there, warm, dry, and comfortable.

Off Flavors in Butter

By Chas. E. Richardson

ALONG the latter part of spring last year I was one morning delivering butter to my customers. I stopped at the house of a lady who had been taking five pounds a week, and she met me at the door saying, "Good morning! Have you time to step in a few minutes? I would like to talk with you."

So I went into the kitchen and she said:

"The last few weeks I have noticed a strong taste and smell in the butter after we have had it a day or so."

"That is strange," I answered. "Are you sure you have kept it cool and nice?"

"Oh, yes," she said. "Why, since the weather has become warm I have put it in the ice chest to be sure it would be cool. In the winter I kept it in a cold room till I needed it, but since the weather has grown warmer I have had ice. I have always put the butter on the ice directly after you left it."

Next to a Boiled Dinner

She showed me the ice chest in the corner of the room and opened it. I looked in and, sure enough, there was the butter on a shelf right over the ice. But on another part of the same shelf was a New England boiled dinner consisting of corned beef and cabbage, onions, turnips, carrots, and potatoes—and I could smell the various odors from where I stood. This woman's husband was one of those persons who "lived to eat." I was therefore reasonably sure that most of the time the ice chest was sure to have some sort of meat or vegetable menu in it, also that the butter would absorb the various flavors and odors.

I asked her: "Have you an earthenware jar?"

"Yes," she said, "I have one that holds about three gallons."

"Would it be too much trouble to put the butter in it for a while and keep it in a cool part of the cellar?"

"No," she answered, "I think I could do that all right."

"Well," I stated, "if you will do so and put it where there is a good circulation of nice fresh air, I feel that you will not have any more trouble."

So she promised to try it, and after that, whenever I called, I asked how she found the butter.

"Oh, it is nice. There is certainly a flavor in freshly churned farm butter that I could not get in the butter I used to buy at the stores. It keeps fine now."

"Well," I told her, "I'm glad we found out what the trouble was. You see, fresh butter is not salted so heavily as the tub butter sold at the stores, and is more likely to absorb strong flavors and odors."

Boarders Liked Butter Too Well

Since then I have had one or two other customers who detected bad odors and flavors, and in one case I had to do quite a lot of detective work in a quiet way before I found out that the cause was similar to that already mentioned. Some people do not care to have one looking into their pantry or ice chest, and those are the people who are very sure that the bad flavor of the butter is no fault of theirs. So I had a few slips printed and placed them in packages of butter, advising that the butter be kept cool and separate from strong-smelling foods.

One woman who bought butter of me kept a boarding house. She thought there was no butter quite so good as nice farm butter, but it used to worry her to see her boarders eat so much of it. So she asked me to put more salt

in the butter, with the hope that the boarders would eat less. I did so, but she said it could stand a little more. I kept adding salt until it was about twice as salty as the rest of my butter. While it was not spoiled, it tasted somewhat like cold-storage tub butter, and after a while the boarders began to complain that it had a strong flavor.

So the next time I called she wondered if I was not getting careless in making it. I saved a piece of butter from her lot that had the extra salt, and sure enough it did have a strong flavor that tasted briny like salt fish. I concluded that too much salt was the cause, so I dropped back to the regular salting, and everybody was well satisfied.

Salt Absorbs Odors Also

Another time I noticed an off flavor in the butter which took me some time to discover. Finally I learned that the dealer from whom I got my salt stored the barrels of salt in a stable. I purchased my salt elsewhere after that, and was also more particular myself about its storage, since it appears to be capable of absorbing strong flavors. Nicely made farm butter is so delicate in its flavor that any foreign influence will affect its quality.

Fish Meal for Cows

THE use of fish meal as a feed for dairy cows is not strictly a new feed, but only lately has the Government seriously undertaken a study of it as a practical ingredient in dairy rations. Fish meal is a by-product of the fish industry. Waste from salmon and sardine canneries is especially excellent for the manufacture of high-grade fish meal.

Preliminary experiments made by the U. S. Dairy Division show that the meal has no detrimental effect on the quality of milk or butter, and that the nutritive value of fish meal as affecting production compares favorably with cottonseed meal. An average analysis of fish meal is as follows: Water, 5 per cent; ash, 16; protein, 60; fat, 14; salt, 5.

Fish meal is manufactured from the fresh waste of fisheries by a process of steam cooking, pressing, and drying. It is preferably made from fresh-water fish to avoid too high a content of salt. Dried-fish products, known as fish scrap or "pomace," are used considerably for fertilizing purposes and fish meal fed to farm live stock retains all its valuable fertilizing properties.

Screened Can Enclosure

By Carlton Fisher

SUNLIGHT and pure air are both excellent means of keeping dairy utensils clean and free from cow odors. But the benefits of airing out of doors sometimes are turned to a detriment when flies are numerous, as they are likely to be about the dairy.

The screened enclosure shown in the picture is one solution to the problem. Entrance is secured by a rather narrow door, and the enclosure is used for airing milk cans, separator parts and also for keeping the milk until the animal heat escapes, which occurs most readily when uncovered.

To overcome weathering during the wintertime with consequent injury to the screening, the enclosure is constructed of panels such as are used for enclosing verandas. In the late autumn the panels are stored away and only the framework is exposed to snow and wintry blasts. The can rack is made of two-by-two pieces of dressed lumber with smoothed corners. The cans rest on the rack, top down so as to drain thoroughly and permit a free circula-



Milk cans and separator parts keep sweet and clean behind screen panels

tion of air from beneath. While a screened enclosure of this sort is of value chiefly as a means of securing better flavored dairy products and consequently better prices, the utensils last longer also, for they are too well aired to rust and they are not battered because they have a place of their own and are kept in it.



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And now, in the De Laval machines for 1917, a number of new and still further improvements have been made, which make the De Laval machines of today much better in many respects than they have ever been before.

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In other words, superior as the De Laval machines have always been to all would-be competitors and utilizers of abandoned De Laval features, the De Laval machines of 1917 are improved and superior in every way to all previous types and models of De Laval construction.

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The new De Laval machines themselves best explain their new and superior features, and their use does this more completely and convincingly than even an examination of them. Every local agent is glad to afford opportunity for examination, and better still, for home test of a new De Laval machine.

But the demand for the new machines is a month ahead of the possible supply under the present difficult conditions of manufacture and freight distribution. More De Laval machines by half have been made in 1917 than ever before, but the De Laval Works is now ten thousand machines behind actual orders, and the demand is ever increasing.

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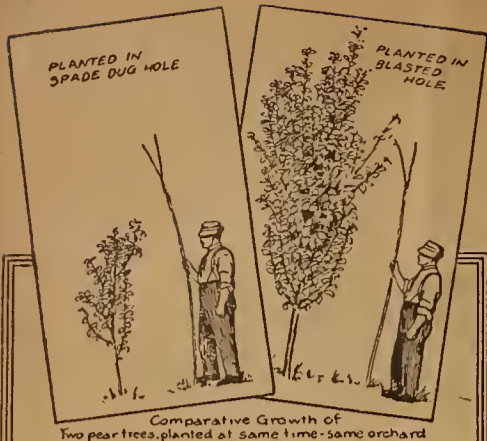
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Crops and Soils

Grass-Seed Insurance

By O. Mitchell

THERE is too much guessing in buying grass seed and other forage and farm-crop seed. It pays to know rather than to guess as to the germination quality of the seed we buy. Notwithstanding the state laws that have been passed regulating the sale of seed, it is a difficult matter to get seed that will germinate and grow a good stand of plants without taking pains to get samples and test the germination quality before the crops are seeded. It is a common practice to make a germination test with corn, and sometimes with wheat and other small grains; but as a rule grass seed and forage-crop seed generally are taken at their face value. Most reliable seed firms are now willing to furnish samples of any seed kept for sale, and it is only the work of a few minutes to arrange for the test of all kinds of farm and garden seeds as to germination quality.

Dinner plates or even saucers in which a piece of blotting paper is placed, the sample of seed to the number of 100 placed on the blotting paper, then covered with paper or cloth and kept moist for about a week in the temperature of an ordinary living-room, will decide what percentage of the seed will grow. A good quality of seed should show a germination of 85 to 90 per cent and above. It is none too early to get samples, test them, and procure the season's seed supply with as little delay as possible.

A Grass from Khartoum

By Clement White

SUDAN GRASS fits in well with any ordinary system of crop rotation. It makes its best yields when grown on a rich loam soil. A sandy loam is also well adapted for the crop. However, Sudan grass is an extensive feeder, and is one of the few profitable crops for thin, poor upland soil. Being an annual, it may be substituted in the average rotation in place of corn; or it may be grown in longer rotations instead of the perennial hay or pasture grasses. It will not add nitrogen to the soil, but its extensive root system contributes to the supply of organic matter. It is a crop which matures quickly, so it is valuable as a catch crop. The forage growth is rapid and heavy, and the hay cures easily and makes a palatable feed.

Maximum yields of Sudan grass are produced on ground which has been prepared early by deep plowing, that is free from weeds, and is warm and filled with moisture and plant food. A seed bed which is smooth and well compacted gives best results when the crop is grown for hay. When a seed crop is desired the crop may be planted in cultivated rows.

When the ground is thoroughly warm the seed may be planted. The rate of seeding is governed by the type of soil, by climate, by rainfall, and the purpose for which the crop is grown. From 20 to 25 pounds of seed to the acre give good results when Sudan grass is

grown for hay or for pasture. When grown for seed production, three to four pounds of seed to the acre in rows from 40 to 44 inches apart give good results. Sudan grass has a tendency to stool extensively when growing conditions are favorable.

The hay yield of Sudan grass varies from one to four tons to the acre; the amount of seed grown to the acre varies from 300 to 600 pounds, or over.

When grown for hay, Sudan grass is usually harvested the same as millet. The hay cures easily, handles readily with pitchforks, is not hard to stack, and is not as slippery as millet. To make palatable hay from Sudan grass, mow the crop when the heads begin to form. This early-mown hay is not "washy" or extremely laxative in effect.

The highest per cent of good quality seeds will be secured if the crop is not cut until after the earliest seed heads are fully matured. There is always the danger of shattering if the seed crop becomes overripe.

Usually the grain binder comes into play for harvesting the seed crop; the bundles are shocked in the field and allowed to cure thoroughly, after which they are stacked ready for threshing. When threshing Sudan grass, ordinary sieves used in handling flax or millet can be used with success. It is advisable to take care that the seed is not blown over with the chaff. The seed does not heat easily when stored in a bin, and may be kept in any manner usually employed for keeping seed for planting purposes.

Cleaning Up the Fields

By Millard Sanders

EXTENSIVE rock-blasting in upper New York recently demonstrated certain advantages of the method of undermine blasting that are worth the attention of every farmer who has boulders to remove.

In that neighborhood the only method of blasting that ever had been practiced for breaking rocks in fields was drilling the rocks and putting the charges of powder well in toward the center. Since the boulders nearly all were sandstone, which is hard to drill, the owner of the farm had hesitated for years to begin a job which threatened to take so long as drilling. There never seemed time to do it, nor were men available.

One day the owner saw a description of the undermine method. It called for more powder than was required to break the rocks by drilling them; but, on the other hand, it required only holes in the ground under the rock. Within half an hour he had secured his crowbar and sledge, and had loaded and fired a blast under a rock five feet square on top and three feet thick. The result was perfect breaking. The rock was strewn in pieces six to ten inches through, for a distance of thirty feet or farther, largely in one direction.

Subsequently other rocks were broken in the same way. The work extended over a couple of weeks, because it was done largely by one man working an hour or so each evening, after the regular day's work was done.

One big sandstone rock nearly four feet thick and six feet wide was broken with three charges instead of one. The three charges were fired together with an electric blasting machine. This rock was more than twelve feet long, which was why three charges instead of one were used. About three sticks of powder were loaded in each hole, primed of course with electric blasting caps or fuses.

The result of this blast was satisfactory. The amount of explosive used was just about right for this particular rock—neither too much nor too little.



Good yields of Sudan grass are grown on ground prepared early by deep plowing, if free of weeds, warm, and filled with moisture and plant food

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Forty Acres Well Handled

By E. V. Laughlin

FARMERS who manage two or three sections look upon 40 acres as very small, and are apt to regard with amusement the division of a farm of this size into fields and pastures. Nevertheless, a "forty" is an acreage not to be sneered at. Properly managed, incomes of \$2,000 or larger are often secured from homesteads of this size, and when all factors are considered it is highly probable that a larger per-acre income is obtainable from a 40-acre farm than from any acreage devoted to general farming.

Forty acres is ideal for a person who desires to follow general farming and who does not wish to employ much outside labor or buy extensively of machinery and other farm equipment. For those also who are not physically able to manage a large farm, one of 40 acres is just about right. It does not take long to plant or to harvest a crop, neither are the live-stock demands so strenuous as to require an excessive amount of attention.

The purchase requirement, too, for 40 acres lines up pretty well with the savings of the average individual. In the high-price areas of the Middle West \$12,000 is about the maximum price for an improved forty, and the loan value frequently reaches \$7,500. A person with \$5,000 cash can therefore swing a purchase of this size, and is moreover much more likely to meet the annual interest payments than when a larger area is involved. Those folks who are in the grasp of the "back to the farm" movement often have occasion to be thankful that they started with 40 acres rather than with a quarter section. My own observations lead me to believe that many people would make a success with 40 acres who would fail miserably upon farms four or five times this size. The matter is worth serious consideration.

The possibilities of 40-acre farms are apparent from the following example: A well-drained tract of this size is situated on the Mississippi bottoms just at the edge of an area of upland silt accumulation. Every square foot of this farm is fertile and tillable. The present owner acquired possession twenty years ago, consequently knows the whims and capabilities of every portion of his little estate.

How the Fields are Divided

For his own particular needs he has found that the following plan of division gives the surest results: Five acres in one corner are set aside for dwelling, barns, garden, orchard, small fruit, and poultry range; 20 acres are fenced off for general farming purposes. In this account it is designated as Field A; 10 acres adjacent constitute Field B, while the remaining five acres form a permanent pasture. There are thus provided 30 acres annually for general farming purposes.

The owner of this farm follows a carefully planned five-year system of rotation. Here it is: First year, Field A, corn; Field B, wheat. Second year, Field A, corn; Field B, clover. Third year, Field A, wheat; Field B, clover (for pasture), the permanent pasture being turned into corn. Fourth year, Field A, clover; one-half of Field B retained for pasture, the other half, along with the former pasture, making 10 acres for corn. Fifth year, Field A, clover, the corn and pasture areas continuing as during the year previous.

According to this schedule the areas for corn and wheat vary from year to year in extent—a condition that must be met by varying the number of live stock carried over from year to year. As far as possible the owner seeks to balance the feed supply and the number of stock retained or fattened. Seldom is he compelled to purchase grain or hay.

The following account is representative of the yields and sales: 1,065 bushels of corn, 340 bushels of wheat, 60 hogs fattened, 5 brood sows carried through the winter, 2 cows, 2 calves, 2 two-year-old horses, 2 colts, 300 chickens, 200 bushels of potatoes, an abundance of fruit for home consumption and some for sale. Receipts were as follows:

Wheat	\$510.00
Hogs	1,444.00
Two 2-year-olds	250.00
Two calves	30.00
Poultry products	317.00
Potatoes	220.00
Fruit of various kinds	67.00
Total	\$2,838.00
Expenses for harvesting, haying, and threshing	56.00

To secure this adequate net income of over \$2,000 the owner did not work over hours nor was he ever seriously pushed for time. His bank account has grown steadily and is now well into \$20,000. In his case this semi-intensive farming has paid well.



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Poultry-Raising

Poisoning Gapeworms

By R. W. Webb

A FEW years ago poultry raisers of our neighborhood, and in fact our entire community in Weakley County, Tennessee, were about discouraged trying to raise chicks on account of the losses from gapeworms. But now we have but little trouble from this source.

A traveling man was our deliverer from the gapeworm. He told us that the poison powder London purple would put the gapeworms out of business without harming the chicks, and we found he was a safe and sane prophet. Here is our plan of procedure: At the very first evidence of gaping or sniffing among our chicks we dust the feathers of the mother hen—just at dark—full of London purple, holding the hen by the legs and working the dust into her feathers and under her wings thoroughly until a distinct purplish color is given to the feathers. The chicken coops are not closed up tight after treating the hens, but plenty of ventilation is allowed. The chicks inhale some of the poison and the gapeworms get their finish. Should one treatment not entirely cure them, another is given.

When the chicks are brooded artificially, we merely dust the chicks in the hovers at night after they have become settled and quiet, using enough of the London purple dust to give the chicks quite a purplish color.

Since we have made use of this remedy the gapeworms are becoming less troublesome from year to year. We have never lost a chick from the effect of the poison, nor have we been able to observe any injurious effects on the health and development of the chicks while growing up. The trouble known to us as "sniffles" is even harder to overcome than the gapeworms, but by making several applications of the poison dust the sniffles are also overcome.

I find that 10 cents' worth of London purple will take care of a large flock of chicks for a season, unless the premises are badly infested with the pest. This discovery has proved to be a godsend to poultrymen throughout this section.

Overdoses of Water

By F. H. Valentine

CAN one have too much of a good thing? Undoubtedly.

Several have questioned whether skim milk and buttermilk, where procurable in quantities at low prices, wouldn't answer in place of meat for poultry. I find both are excellent additions to the ration for fowls and ducks, but both as a rule contain too much water to take the place of meat exclusively. The birds simply can't hold enough milk to get the necessary amount of the needed solid elements. Of course the solids could be extracted, as has sometimes been done, and then sold as a staple poultry feed on the market. But that is outside the scope of those interested in making use of milk and buttermilk in their natural forms. These dairy by-products may well be used as drink or to mix mash, and are valuable for growing stock, laying hens, and for fattening aids. For the latter purpose they greatly improve the quality of the flesh.

Buttermilk is claimed to be an antidote to white diarrhea. It's a valuable food element anyway. But it contains too much water to replace entirely solid forms of animal food.

How to Clean Poultry Houses

By F. W. Orr

CLEANING a poultry house is not a simple matter. For this reason it is of much importance when building that the house be made as easy to clean as possible. A house, without a floor, on damp ground becomes a veritable storehouse of disease germs after being used for several years unless the top six to twelve inches of soil is removed every year or two and fresh soil substituted. For this reason a concrete floor with good underdrainage and insulation underneath is the ideal poultry-house floor. What is true of keeping the floor sanitary is true of walls and ceiling. The rear and end walls should be made as tight and free from cracks and crev-

ices as possible. Not only to keep the germs and insect parasites from hiding and multiplying in the rough places, but smooth tight walls also prevent draft. Drafts are only less deadly than bad forms of disease germs in a poultry house.

The cleaning of a well-built concrete-floored poultry house, where the walls are smooth and without cracks, is an easy matter. After the litter and dirt is all removed, then a thorough brushing with a broom followed up with a spray pump throwing a strong stream of thin whitewash, with a pint of crude carbolic acid added to each gallon of whitewash, will make a thorough job of it. Handled in this way an hour's work will clean and whitewash a house of considerable size, and the job can be repeated several times a year without hardship.

Buttermilk Chicks

By E. G. Squire

SKIM-MILK calves and skim-milk pigs are common enough terms, but "buttermilk chicks" is a new one. Mr. Charles Laros, a successful Poweshiek County, Iowa, poultryman, gives his chicks no water to drink the first two weeks after hatching, but supplies them with all the buttermilk they want. If they are given buttermilk exclusively longer than two weeks, they are apt to develop a leg weakness. Mr. Laros has had no trouble with bowel troubles of any kind since he has used buttermilk, and attributes it to the buttermilk.

The theory is that the acid of the sour milk acts as a germicide and prevents the growth of the organism causing diarrhea. It is the same theory that physicians use to explain the longevity of the Bulgarians who use sour milk so freely in their diet. Whatever the theory may be, the practice is working out well with chick-raising operations in many sections of the country.

DON'T say you cannot afford a first-class, pure-bred male bird. The male is more than one half of the future flock in his ability to beget good layers and all-around desirable stock.



An A-shaped brooder coop or laying house covered entirely with prepared roofing except the open wire-covered front. Easy to build any size desired.

Chicks Catch Borers

By Samuel Haigh

WILL chicks kept in orchards control borers? Last year I allowed 800 chicks the range of a peach and apricot orchard during the spring and summer months and had but very little trouble with borers. The supposition is that a lot of chicks ranging constantly through an orchard will catch most of the borer beetles when they are about to lay their eggs on the tree trunks, and also eat the eggs when laid. We had previously depended on the application of asphaltum to prevent borer injury, but with little success.

New White Diarrhea Test

By B. F. W. Thorpe

TRIAL of a new test to determine whether chickens intended for breeding stock are free from white diarrhea infection is giving promise of deciding this important matter with little trouble at small expense.

The new test is made by vaccinating the birds by injecting a vaccine preparation into the skin of the wattle. If the chicken is a carrier of white diarrhea germs, the wattle vaccinated will develop a doughy swelling in about twenty-four hours after vaccination.

The test now being made use of by some experiment stations is to take a few drops of blood from the wing of the bird being tested and decide the matter of infection by a complicated laboratory test. The vaccination test, if it proves to be what it now promises, will be inexpensive and easily accomplished even by the average poultryman.

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Tells why chicks die
E. J. Reefer, the poultry expert, 404 Reefer Bldg., Kansas City, Mo., is giving away free a valuable book entitled, "White Diarrhoea and How to Cure it." This book contains scientific facts on white diarrhoea and tells how to prepare a simple home solution that cures this terrible disease over night and actually raises 93 per cent of every hatch. All poultry raisers should certainly write Mr. Reefer for one of these valuable FREE books.

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Garden—Orchard

Asphaltum for Grafting

By Samuel Haigh

I AM making use of asphaltum in place of grafting wax with good results. I mix two parts asphaltum and one part resin by weight and apply the mixture hot with a small paint brush or paddle and work the mixture smoothly around the scions with wet fingers. This plan of coating grafts is much quicker than to use grafting wax. We very seldom have any of our grafts fail to grow by this method. The asphaltum being elastic, it expands as the grafts grow, and in this respect is superior to the ordinary grafting wax.

A few days ago I put in 76 grafts by this method on one tree in three and one-half hours, and expect them all to grow.

Here is the plan we follow to keep the asphaltum mixture hot while grafting: The top is cut out of a five-gallon oil can. A long heavy wire handle is put on the can for convenience in carrying. In the bottom of the can a small oil stove is placed and an opening is cut out of the side of the can so the wick can be regulated without removing the stove. Then a suitable vessel holding the asphaltum mixture is set on the oil stove, which enables keeping the mixture at any desired heat.

I also find the asphaltum valuable for repairing leaks in pails or other vessels which are not used over or near fire. By placing a little of the asphaltum over a hole—having the surface dry—and heating the vessel over a lamp, the leak can be mended in a moment, and the asphaltum also prevents further rusting.



This insect (codling moth) in its larval state makes millions of dollars' worth of apples unsalable every year. Poison spray will control it.

Hurry the Early Potato

By W. A. Graham

FOR many years I have found it very profitable to grow Irish potatoes for the early market. If I am not mistaken in my prophecy, this is going to be an exceptionally good season for profit from an early crop. I know there are many holding a different opinion. They reason that when there has been a poor crop and prices soar as they have the past winter, the following season big crops will be planted, the yield will be good, and these conditions will bring about low prices. I grant that there may be rather low prices for the late crop, but early potatoes are going to net the growers not less than \$1 a bushel. So I recommend planting all that can be given just the care and fertilizing they need.

Employ good, rich, well-drained loamy soil, plant early, choose the best early varieties, spread the seed a week or two in the sunshine before planting, and give clean cultivation. Begin digging as soon as the tubers are nearing maturity, and close out the crop as early as possible. I have as a rule received each year from 75 cents to \$1.25 a bushel for all the early ones I grow, and expect to do considerably better for my early crop this year.

WHY not plan ahead to use potted plants or bouquets of flowers with which to make birthday gifts? A beautiful potted plant will add cheer and color to the home of your friend for weeks and is always an acceptable gift.

MANY garden crops fail because pests get ahead of the gardener. Crops worth planting are worth watching and protecting.

Half a Cow—

Half a cow means half a profit—really a loss, because a poor producer costs as much to keep as a good milker. If you have a cow that is below par, chances are some vital organ is impaired and she needs treatment.

Kow-Kure is the one cow medicine that quickly tones up the digestive and genital organs and puts a backward cow on her feet. Try Kow-Kure on your most doubtful cow. It is especially effective for the prevention or cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Lost Appetite, Scouring, Bunches, etc.

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A tonic and blood builder. It will get them safely past the first few weeks—the danger period.

So sure am I that Dr. Hess Poultry Pan-a-ce-a will help your chicks grow, help them safely to maturity, make them healthy and make your hens lay, that I have told my dealer in your town to supply you with enough for your flock, and if it does not do as I claim, return the empty package and get your money back.

1½ lbs. 25c; 5 lbs. 60c; 12 lbs. \$1.25; 25-lb. pail, \$2.50 (except in Canada and the far West).

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The policy of turning out the best has paid the John Deere Company. The John Deere factory makes more steel plows than any other organization in the world.

The name "John Deere" on a plow is an assurance of highest quality material and satisfactory service. It means real plow value.

The John Deere General Purpose Plow is especially adapted for farmers who rotate their crops or practice diversified farming and have tame sod as well as stubble or old ground to plow.

Moldboard has a long, slow turn which pulverizes the soil to best advantage.

In sod, it does not break up the furrow slice but laps the furrow sufficiently to bury green vegetation in loose soil, preventing further growth and hastening decay.

John Deere Plows are made in styles to meet all conditions, no matter what they are.

Look for the name "John Deere" when you buy.



John Deere Spreader

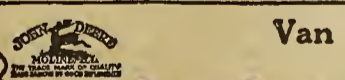
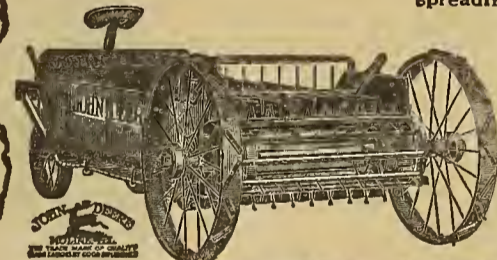
The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.



Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

Widespread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



Van Brunt Grain Drills

Van Brunt Drills are particularly noted for their adjustable gate force feed. Each feed cup plants exactly the same amount. The seed is compelled to leave the seed box in even, continuous streams without bunching or choking up. All the ground is seeded.



Van Brunt Drills plant any small seed.

Amount sown per acre easily regulated.

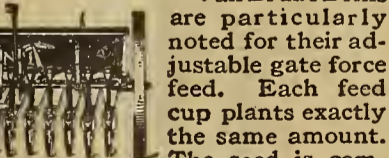
Direct, double, gear drive from the continuous axle.

High-grade discs with bearings guaranteed to last lifetime of drill. Scrapers keep discs clean.

Pressure springs individually adjustable to make uniform depth furrows.

Either single or double discs.

Grass seeder attachment which will drill or sow broadcast can be furnished.



The Van Brunt Single Disc is the first successful single disc grain drill with closed delivery. The seed is protected by metal seed tubes, disc openers and the disc boots until it reaches the bottom of the furrow.

Every implement bearing the John Deere trade mark is made in a John Deere factory.

To insure the best in every class of implements there is a special John Deere factory for making each class. John Deere Plows are made in a plow factory; their hay-tools in a hay-tool factory; their planters in a planter factory.

Every tool in the John Deere line is made in a factory organized and equipped to make such tools.



John Deere Factories

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All John Deere factories are in communication with each other. Each has the benefit and experience of all.

When it comes to purchasing raw material, John Deere factories as a unit, represent an enormous buying power. This is an advantage to purchasers of John Deere implements.

Don't forget that each John Deere factory is a leader in its field—that every implement it turns out is worthy of the name, "John Deere."

JOHN DEERE, MOLINE, ILLINOIS

Kidnapped and held a prisoner on a lonely farm did our heroine worry? Dear no! She thought it a splendid adventure

The Blue Envelope

Leslie Traps Her Captor and Makes a Break for Freedom

By SOPHIE KERR

PART VIII

I COULDN'T help being amused, too, but as we went into the bedroom that had evidently been prepared for us, my anxiety for the real blue envelope, still sewed in the loops of my hat trimming, caught me with sudden strength. I didn't want to take that hat off and leave it up-stairs, but if I kept it on, Mrs. Davis would be suspicious at once and would probably search me. With her right at my elbow it was impossible to get the blue envelope out of its hiding place and destroy it. If there'd been an open fire in the room I believe I would have been tempted to throw the hat into it and watch it burn, even though it was the first hat I'd ever bought with money of my own earning, and mighty becoming too; but there wasn't an open fire, so I didn't have that chance.

I took off my gloves and jacket slowly, as if I was very tired, and put them in the closet. Then I unpinned my hat, giving the blue envelope a furtive "feel" to make sure it was still there, and put it on the shelf of the closet and laid my little hand bag beside it—but thought better of it, for if Mrs. Davis wanted to search my bag the proximity to my hat might be dangerous. So I brought the hand bag back and laid it on the dresser. As I did so a sense of utter forlornity came over me. I seemed so helpless, so futile against the schemes of these horrible plotters. This woman who had been sent to guard me, she might seem kind and decent enough, but if she discovered that I was trying to trick her, what would she be then? Capable of any length of cruelty, I made no doubt. I thought of Uncle Bob, of dear Mrs. Alex, probably writing to me to-night and asking me if I was wearing my rubbers when it rained and if I was eating too much candy, and then, at last, of Ewan Kennedy, whose months of hard work were in danger from these thieves. And then I set my teeth. He'd trusted me with the blue envelope. I mustn't fail him. I *mustn't*.

"Here, dearie," said Mrs. Davis. "here's a clean wash rag for you and a new toothbrush and a comb. I knew you wouldn't have anything of your own with you and I brought everything you'd be likely to need—even a kimono." She shook out a gaudy pink cotton garment as she spoke. "Cheap, but I guess it'll do," she commented.

"That was awfully kind," I said as easily as I could.

Mrs. Kroll kept looking at me with such apprehensive interest during supper that it almost made me laugh, and Mrs. Davis, who missed nothing, winked at me jocularly behind our hostess' back. I managed to enjoy my supper, though, for Mrs. Kroll was a good cook, even if she did think I was crazy. Mrs. Davis yawned enormously over her dessert. "I'm ready to drop," she said. "I could go to bed right this instant." And I felt the same, but I was anxious to go to bed early for another reason—I meant to rescue the blue envelope as soon as Mrs. Davis went to sleep, which would evidently be soon.

There were two beds in our room. I was glad of that, for it made it less likely that I would disturb her. Imagine then how I felt when, just before turning out the light, she produced a strong but very light steel chain.

"Now, dearie," she said persuasively, "just to satisfy my own mind I'm going to fasten this around your wrist, and the other end around mine. It won't get in your way, for I'll leave it good and slack, but I'd be wakeful and disturbed all night long without doing it. You don't mind, do you?"

I thought it best to seem acquiescent—it wasn't much use seeming anything else.

"Of course not," I said, "but, truly, Mrs. Davis, you needn't worry about my trying to get away. I'm not so silly as to think I could."

"Oh, yes, yes," she nodded, "you're dead right about that. But just to satisfy me, dearie,—just to make me more peaceful."

So I submitted with inward rage. And my hat and the blue envelope might have been in Timbuctoo instead of ten feet away, for all the possibility that I could get them undetected. Still, it didn't spoil my rest, for I was sound asleep as soon as my head touched the pillow, and I never woke up until late in the morning. I didn't know where I was when I first waked, and it took several minutes of staring at the white-washed walls and the funny old pictures before I realized it—a snore from Mrs. Davis helped.

It was very dark and shadowy in the room, though my watch told me it was half-past nine, but rain was dashing against the windows and black clouds hung low in the sky. Not much chance to escape from my jailer on a day like this.

When Mrs. Davis did at last wake up she was as amiable as before, and took the chain off my wrist with something

What Has Gone Before

READ THIS, THEN READ THE STORY: Leslie Brennan, orphan heiress, is told by her guardian that her father wished her to earn her own living for two years unless she is engaged at eighteen. At the same time she learns that Ranny Heeth, to whom she is engaged, only wants to marry her for her money, and she breaks her engagement. She learns stenography in New York, is hired by an eccentric inventor of explosives, and wins his confidence. On the day that he is to go to Washington with a precious sarnite formula he is called to Toronto by the serious illness of his mother. Leslie is entrusted with the formula, is kidnapped on the train, and taken to a lonely farmhouse. She gives up to her captors a blue envelope containing a nonsense verse which she says is the formula in cipher. The real formula is concealed in her hat.

approaching apology. We went down to breakfast and had a very good meal of country ham and eggs, fried mush and crab-apple jelly, served with the same seasoning of Mrs. Kroll's curiosity.

THEN began the longest, most wearisome day of my life. The rain poured—and poured—and poured. There was nothing to do except sit and talk to Mrs. Davis, or try to read the Farmers' Almanac, or two Bertha M. Clay novels in the last stages of dilapidation, which was all of Mrs. Kroll's library. Mrs. Davis good humor and likableness soon wore thin and she showed her real self—coarse and callous. I hated her before night came. She was at my elbow every second; I didn't dare so much as look at my hat with the hidden blue envelope, I was so afraid of arousing her suspicions. The only gain I made during the day was that I learned that Mr. Kroll was absent and would not be back until the following afternoon. There didn't seem to be a hired man or, indeed, anyone about the place except Mrs. Kroll. She said something, too, that made me think the farm was not so isolated as Mrs. Davis had told me. For one thing, there was a telephone, but when Mrs. Davis, along in the afternoon, announced her intention of using it, Mrs. Kroll threw up dismayed hands.

"It's out of kilter," she announced. "Bin so since day before yistddy an' I forgot to tell y'. Do y' want that I should ride over to Nasworthy's and send word f'r y'?"

Mrs. Davis said shortly that it wouldn't be necessary, but she threw me an uneasy glance as if she was afraid of what I might have gathered from the conversation. I tried to look uninterested and unconscious, but I don't know that I succeeded. After that, when she wanted to talk to Mrs. Kroll, Mrs.

Davis would stick her head through the kitchen door and whisper.

The next morning was as full of sunshine as the day before had been of rain. As soon as breakfast was over I asked Mrs. Davis if we couldn't go outside and get some air, since the day was so beautiful. She said she didn't mind, so we went up-stairs and put on our hats and jackets. On the pretext of getting a handkerchief out of my bag, I slipped my money into my jacket pocket and ostentatiously left the hand bag on the dresser. It gave me a reassuring thrill to pin my hat on my head and feel the blue envelope still in the ribbon loop. If Mrs. Davis had not been there, I'd have had it out and torn in a thousand pieces in a twinkling. But Mrs. Davis was there, and it was my part to throw her off her guard if possible. I must get away before Fischer came back, or before any word came from the head of this conspiracy, for I didn't know what the word might be.

Certainly the view from the front door as we stepped out was lonely and desolate enough. The house, except for its little yard, seemed surrounded by uncultivated fields, with little groves and fringes of woods here and there among them. We walked down the paved pathway which led to the gate. Flowers were coming up on each side of it—daffodils. Outside there was no road in sight and, as I looked about, I could see no neighboring house, nor even a smoke spiral to indicate that there were neighbors anywhere near—no, not one sign of human life as far as I could see in any direction. Mrs. Davis and I walked about briskly for a few minutes—and, oh, how I chattered! She has never been better entertained from that day to this, I know. The lowing of a cow made an excuse for going around the house to see the barn. It wasn't a very big barn, and it looked out of proportion to the long low old house, but I insisted that we go into it—and I was rewarded. There were two cows and only one horse, and there wasn't a sign of a hired man, or anyone in fact. So I felt pretty certain that if I tried to run away pursuit would have to consist of Mrs. Kroll or Mrs. Davis, mounted on that one horse.

WE WERE passing the little feedroom built on the end of the barn farthest from the house and Mrs. Davis and I paused to look in at the corn and oats stored there.

"I wonder what's in the barrel," I said.

Mrs. Davis advanced unwarily.

"Bran or meal for the cows, I expect," she said briskly. "Oh, I'm a great old country woman—I know all about those sort of things."

What she said next I don't know, but I know it was something forcible. With one quick jump I was outside the door, banged it to, and buttoned the two big wooden buttons that held it in place. It was a heavy door, well built, but I didn't wait to see if it was going to withstand Mrs. Davis' strength. I ran like mad around into the horse stall, snatched a bridle from the wall and slipped it into the docile old thing's mouth, backed him out near the pound fence, and via that fence scrambled on his back, without a saddle or even a blanket.

Shrieks and bangings came from the feedroom, but I didn't even look to see if Mrs. Kroll might be coming to the rescue of my erstwhile jailer. I kicked my feet into the old horse's ribs and urged him into a lumbering trot that nearly jolted me off with every step. I headed him across the fields behind the barn, where there seemed to be a gap between the hills.

If anyone had seen me, I suppose he or she would have sat down and nearly died laughing. I thought of that afterward, but at the time I was so busy trying to get a reasonable distance between me and Mrs. Davis that I had no time to imagine passers-by and the effect the sight of me might have on them. Besides, it was awfully rough traveling, and my steed in his palmiest days was never a lady's saddle horse. However, I did manage to keep my seat and to make my horse go, and when at last I turned to look back I must have been a mile away and the house looked very tiny. I pulled my horse down to a walk and kept him steadily headed toward the gap in the hills.

We must have traveled three or four miles when we struck a rough roadway, and down this I turned. Of course, I didn't dare stop, but I was so shaken up and uncomfortable from riding such a distance without a saddle that I got off and walked a bit just to rest myself. The road turned into a wood and I followed it. On and on and on we went, through the fragrant pines. Certainly the Fischer and Davis pair had made no mistake in choosing a deserted country. Where—where on earth could I be? Was I really only a few hours from Philadelphia? It seemed perfectly incredible. [CONTINUED ON PAGE 31]



Just before turning out the light, she produced a strong but very light chain and snapped it around my wrist

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IS A PENNY EARNED

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What American City will these letters spell?
Can you arrange the 9 letters in the square above so that they will spell the name of some American city? If you can I will send you a prize. I am anxious to have more bright boys and girls join my Prize Club. I want to be sure that every member is bright. The only way I could think of to find who was bright and who was not bright was to see who could solve the puzzle.
Send me your answer to the puzzle. I will send you a valuable prize by return mail. I will also make you a member of my Prize Club. I will show you how you can get dozens and dozens of prizes for 10 or 15 minutes' work. I will send you pictures of my wonderful collection of prizes. I will tell you just exactly what to do to earn as many prizes as you want.
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Housewife's Club

A Back-Yard Fernery

By Lillian Trott

A FERNERY in the back yard is a spot to conjure with. The north or shady side is most fitting, and it may include the hardy brakes, which are to be planted in the center, as they grow tallest, often to a height of four feet. Around these set the more delicate varieties, taken up with the leaf mold in which they grew in the woods.

Sweet fern, too, heightens the attractiveness of a fernery, despite its commonness. Ground juniper, though of quite another family, so much resembles ferns in appearance that it may swell the list. Spraying overnight improves ferns.

Cleaning House

By Jane Macpherson

ALTHOUGH for years house-cleaning has been a bugbear, it is no longer a thing to be dreaded. I have found that house-cleaning becomes as easy as any other household task if it is done systematically. I clean one room at a time, and do not upset my entire house at one time. I use the same plan of cleaning every room from garret to cellar.

First I dust all the small articles, and either take them from the room or put them under cover. Then I remove the lighter pieces of furniture to another room and cover the heavy pieces that remain. Then I dust the walls and ceilings with a broom covered with a soft cloth. I take the rugs out of doors, beat, and sweep with wet bits of paper.

As I have hard-wood floors I wash them with a string mop, working from the corners to the center of the room. Then I dry them in the same manner with a dry mop or cloth, and polish with an oil mop.

I clean the woodwork with a soft cloth, warm water, and a small amount of soap solution. Then I remove the covers from the furniture and clean the polished surfaces with a chamois skin. I then put the rugs and small articles back in their places, and the room is cleaned and in order with little disturbance to the rest of the house.

I try to choose a dry, bright day for house-cleaning, so that windows may be washed easily, rugs hung out of doors, and clothing aired.

Metalware Repair

By F. B. Lytle

WHAT are you doing to add to the life of your metalware? How many times have you thrown away water pails and various other kind of pails and pans because of a hole or a broken handle, when by a little time and an outlay of not more than \$1.25 you could have added years to their life. I have in mind tubs, pails, milk pans, strainers, separators, teakettles, and in short anything made from tin, galvanized iron, copper, nickel-plated ware, aluminum, brass, or zinc.

Now for the outfit. First secure a one-pound soldering iron, which will cost you about 45 cents, and a one-pound stick of solder, which will cost you 60 cents, a few galvanized or copper rivets, a rivet set, a five-cent piece of sal ammoniac, and a little muriatic acid. The last two articles can be had at any drug store, where a little powdered resin can also be had.

To prepare your iron for soldering, heat it in the stove so that it feels hot when held about two inches from your cheek. Now hold the iron in your right hand and the stick of solder in the left. Rub the iron on the piece of sal ammoniac, applying the solder at the same time to the iron until the point is bright

all over. This is what is called tinning the iron, so that the solder will flow freely from its point.

Now fix the acid for soldering. Muriatic acid is a poison, and must be kept from your garments, for wherever it touches cloth it will eat right through. To use on some metals it must be cut with zinc.

To do this, place a little acid in a heavy glass and add a few pieces of zinc. Part of the top of a fruit jar will do, and this will cause the acid to boil and throw off pungent fumes, and when the acid has eaten up all the zinc it will, it changes color from a pale yellow to the appearance of water.

Now put in separate bottle and mark it "Cut Acid. Poison."

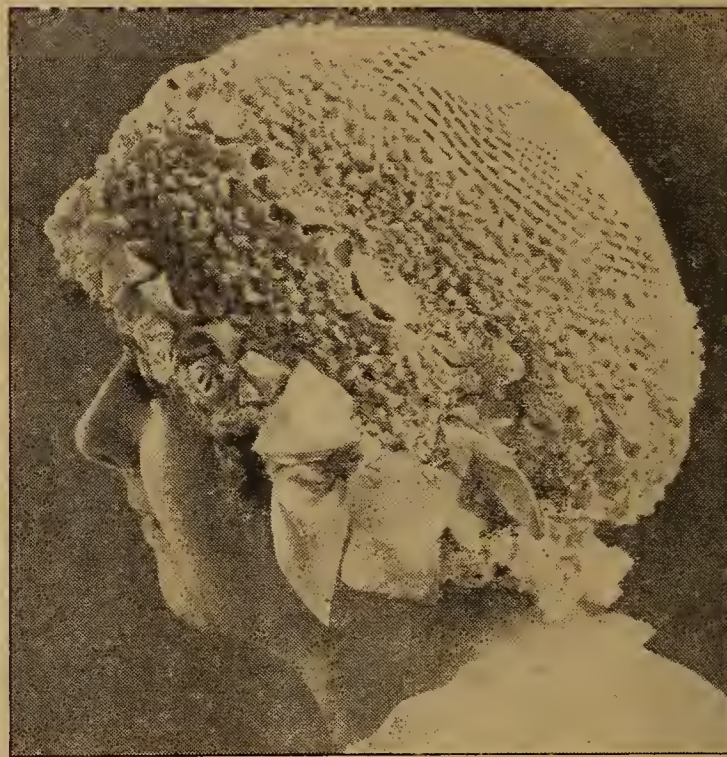
You will get better results in mending all articles of tinware by using powdered resin as a flux instead of the cut acid. Where the hole to be mended is small, scrape the tin bright, apply the resin, heat your iron, and run solder over the hole. If the place to be repaired is about a quarter of an inch large it is a good plan to place a rivet in the hole, hammer it down, using an old flat iron for an anvil, then solder.

If the hole is much larger, cut a piece of tin the size desired, lay over the hole, and solder all around. For brass or copper proceed as above, only use the cut acid instead of the resin.

In repairing articles made of zinc or pewter, use cut acid as a flux, and apply your hot iron very lightly and carefully or you will burn a hole in the metal, as they melt very easily.

Galvanized iron is used largely for wash tubs, water pails, drinking fountains for poultry, wash boilers, gutter troughs, down spouting, and many other

New Irish Crochet Cap



IRISH crochet with a star center makes the design of this boudoir or motor cap especially attractive. Complete directions for making will be sent by the Fancy-Work Editor of Farm and Fireside, Springfield, Ohio, for four cents in stamps.

articles. It is easily repaired by using pure muriatic acid as a flux. Solder the same as tin.

In repairing nickel-plated ware such as teakettles and coffee pots, scrape the nickel from the place to be repaired, apply cut acid and solder.

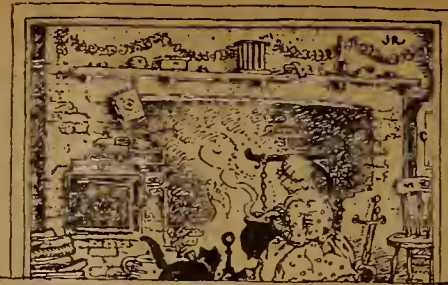
To solder aluminum, moisten the surface with Venetian turpentine, and solder with pure zinc.

The things that can be repaired around the farm are almost countless. For instance, if you should break the wire supports around your lantern globe, repair it yourself and save at least 25 cents besides a trip to the village or city. In the cities where five-and-ten-cent stores are located, soldering outfits can be had for a dime, but it would pay you in the long run to get the better and heavier iron. The coppered or galvanized rivets can also be found at these stores, 100 for five cents.

Making Good Buttonholes

By Fern Lawrence

WHEN making buttonholes in woolen, silk, or, in fact, any other material that frays, first measure accurately where the buttonholes are to be, then stitch two parallel lines with the sewing machine on the garment, the required size for the button. These lines must be about one fourth of an inch apart. Then cut the buttonhole between the lines, and buttonhole stitch with twist.



Cookery

Stiffens the Pie

By Elsa R. McMillan

A LITTLE dissolved gelatin, rolled crackers, and raised bread thoroughly toasted in the oven and then finely rolled, while they do not possess the nourishing qualities of eggs, serve for thickening in squash, pumpkin, and lemon pies. Flour or cornstarch may be used for this purpose also, but don't overdo any of them.

Some New Breads

By Ruth M. Boyle

ROLLED oats was used by a demonstrator at the University of Wisconsin recently to illustrate how cereals may be used to vary ordinary white bread. The loaf was made in the presence of a group of farm women, and was light and of a fine texture and flavor. This is the process the instructor recommended. The recipe makes one loaf.

Scald a cupful of rolled oats in a cupful of boiling water and let stand one hour. This partially cooks the cereal and gives it the sticky consistency necessary to make the dough. This will thicken up solid.

Make a sponge of one-half cupful of water, one-fourth cake of yeast, one teaspoonful of salt, one-half teaspoonful of molasses, two teaspoonfuls of shortening, one-fourth cupful of flour. Let stand one hour and a half.

Add the rolled oats to the sponge, and work in flour to make a medium soft dough. The best way is to take two knives and cut the flour into the dough, avoiding working with the hands as much as possible. Mold into a loaf, working very lightly to keep it from sticking to the board, and bake.

Either yellow or white corn meal may be used instead of the rolled oats, and the same process followed. Left-over breakfast food might be used in this way if not allowed to stand too long.

These combinations of wheat and corn or wheat and oats make very palatable bread. They add to its nutritive value and are cheaper than ordinary bread, so that they are worth trying as a variation.

MOCK MARSHMALLOWS—One tablespoonful of gelatin, one cupful of sugar, one cupful of boiling water. When cool, beat in the whites of three eggs which have been beaten stiff. Add one-half teaspoonful of vanilla, set in pan, cover with nut meats, cut fine. Serve with whipped cream. F. L. D., Texas.

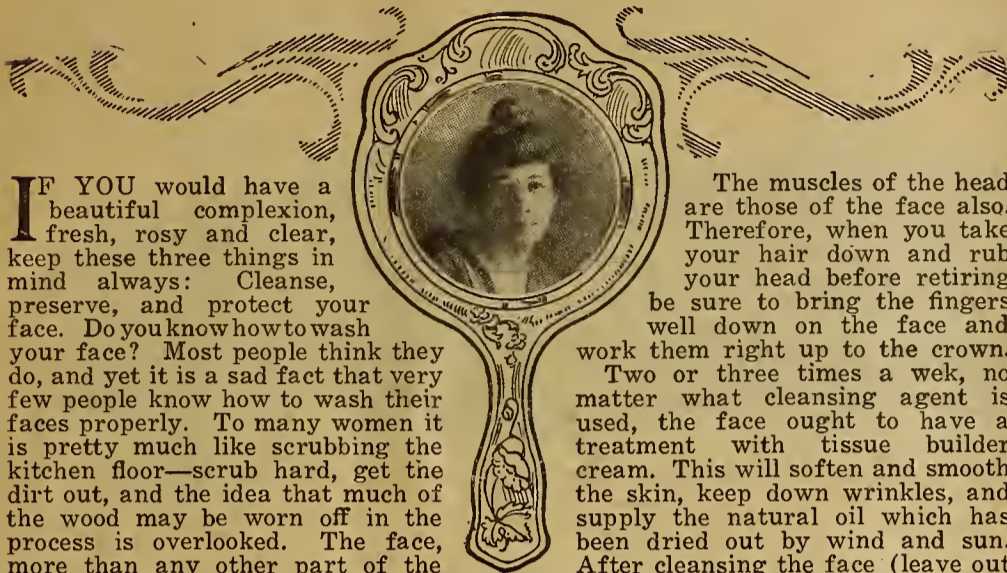
CREAM FROSTING—Two cupfuls of powdered sugar, three tablespoonfuls of thick cream, one tablespoonful of melted butter. Beat together until light, add maple syrup to taste. Melted chocolate (two squares), nuts, or any desired flavoring may be added in place of the syrup. L. M. Z., Nebraska.

EGGLESS CHOCOLATE CREAM PIE—To four tablespoonfuls of grated chocolate allow about two dessertspoonfuls of cornstarch. Wet with a little cold milk, and blend with the remainder of one pint of milk. Water may be substituted, with the addition of butter the size of an egg. Cook until thoroughly done; remove from fire and add one-half cupful of sugar and four marshmallows cut in quarters, beating until all are dissolved. Add a pinch of salt, and vanilla to flavor, pouring into the baked crust while just warm enough to set smoothly. A meringue may be added if desired. The marshmallows in this recipe take the place of eggs in preventing any tendency to pastiness. M. E. H., Michigan.

Looking Your Best

What to Do to Improve Your Complexion

By MARGARET DRUMMOND



IF YOU would have a beautiful complexion, fresh, rosy and clear, keep these three things in mind always: Cleanse, preserve, and protect your face. Do you know how to wash your face? Most people think they do, and yet it is a sad fact that very few people know how to wash their faces properly. To many women it is pretty much like scrubbing the kitchen floor—scrub hard, get the dirt out, and the idea that much of the wood may be worn off in the process is overlooked. The face, more than any other part of the body, is constantly exposed to the weather. Dirt, dust, sun, wind—all have an opportunity to do their hardest work there. So the skin of the face must be treated with more care than any other part of the body.

Under the outer skin there are millions of little pores working to throw off the waste matter of the body. By the action of the muscles this waste matter is worked through the pores on to the outer skin. Unless this is washed off and the opening of the pores left clean, they are going to be clogged and the dirt is going to be shut up inside the skin. This will show in the form of pimples, blackheads, and a discolored skin, and all the face powder in the world isn't going to hide it either.

That is the dirt from the inside. If you will stop to consider also the dust from the outside which is deposited on the skin in the course of the day, you will see that there is considerable cleaning to be done.

Soap and water are the first cleansing agents—warm water and a pure mild soap. Few skins can stand real hot water; it dries out too much of the natural oil, tightens the skin, and provokes little fine wrinkles. Use a wash rag. There is nothing better than the flannel wash rags that our grandmothers used, and be sure to keep your wash rag clean. Wash thoroughly and hang up to dry and air after each using. A soft complexion brush is good, but must not be used too often.

The finger tips properly used will do more good than any complexion brush. Bathe the face first with warm water, then apply the soap with the cloth, rubbing gently, and always with an upward motion, paying particular attention to the crevices in chin and nose where dust will accumulate. Then rinse thoroughly, using plenty of clean water—warm and then cold. The object in using cold water for the last rinsing is to close the pores which have been opened wide by the warmth of the water and the rubbing. Close them and they will settle down to their work again.

In cleaning the face don't forget that the ears and throat ought to be done at the same time. Vigorous rubbing of the heavy muscles all over the face promotes the blood circulation which is back of these muscles and keeps the skin healthy from the inside.

DRY the face carefully, rubbing always up, and pat rather than wipe. It is economy to use soft towels for the face; the older they are the softer they will be, and always have them clean.

So much for the general cleaning process. While soap and water are undoubtedly the best cleansing agents, soap too frequently used will make the skin dry and harsh, and an occasional cleansing with cream is advisable.

Toilet creams are of two kinds: cleansing cream, to be used instead of soap, and tissue builder, which is used to preserve and protect the skin. To cleanse with care, wash the face with warm water, then apply the cream with the finger tips until every spot is covered. Massage gently, rubbing in circles and, as in washing, rub upwards always. Allow the cream to stay on for a few minutes, then wipe off with a soft towel, wash with warm and then cold water. The cold water closes the pores, tones and refreshes the skin.

The idea of rubbing upwards is to stimulate the muscles which in the course of the day's work and worry have lost their elasticity and are sagging. Remember this every time you wash your face and the practice will soon become second nature.

The muscles of the head are those of the face also. Therefore, when you take your hair down and rub your head before retiring be sure to bring the fingers well down on the face and work them right up to the crown.

Two or three times a week, no matter what cleansing agent is used, the face ought to have a treatment with tissue builder cream. This will soften and smooth the skin, keep down wrinkles, and supply the natural oil which has been dried out by wind and sun. After cleansing the face (leave out the cold rinsing) and while it is still warm, apply the tissue builder, just a little at a time until the face is covered. Massage very lightly as before, and keep up the work for at least five minutes. Then apply a cloth wrung out of cold water. This will close the pores, and the cream left on the surface of the skin should be wiped off, not rubbed.

"AN OUNCE of prevention is worth a pound of cure," and this applies to the skin as well as to other things. When going out into the air, whether for a long ride in the wind or to pick berries in the sun, take the precaution to rub a little tissue builder all over the face before starting. Wipe off and dust with a little powder to "hide the shine" and you will find that your skin will keep free from that dry, weather-beaten appearance so characteristic of women much exposed to the elements, whether they are housewives or athletes.

Never buy cheap toilet creams or soaps. The materials that go into good toilet creams are not cheap, and a cheap cream advertises itself at once as something which would harm and not help the skin, and is therefore to be avoided. Get a good cream and be careful in the using. Always keep the two kinds on hand. This is economy in the end. Old soft linen makes splendid face cloths for wiping. Cut into squares and have them absolutely clean always.

Dry, Dead Hair

E. G. T., TEXAS—You have probably given your hair too much sun, and the natural oil has dried out. Sunshine means life and luster to hair, but it can be overdone, particularly in your hot climate. For the present don't shampoo it oftener than once a month, but brush it well every night, and spend a few minutes in massaging the scalp.

White Hair with Yellow Tinge

MRS. G. B., ILLINOIS—You are probably not rinsing the soap out of your hair as thoroughly as you ought. Add a few drops of bluing to the final rinsing water.

Dry Skin

MRS. F., IOWA—Constant exposure to the wind and sun have dried out much of the natural oil. Use a good "tissue builder" every night before retiring and occasionally during the day as well, particularly when you are going to be outdoors for some time. On long drives wear a veil.

Addresses

MRS. D., MICHIGAN—I am not permitted to give addresses in these columns, but if you will send me a stamped and self-addressed envelope I shall gladly supply you with the one you asked for.

To Prevent Hangnails

MRS. F., INDIANA—Rub the finger tips well every night with a good oil. Do not overlook the edge of the nail all round.

To Gain Flesh

H. G. P., TEXAS—You need careful feeding more than anything else. Eat plenty of milk and eggs, and avoid rich foods and gravies. Get all the fresh air you can—sleep out of doors if possible; if not, open your bedroom window wide. Breathing exercises will do more to develop your neck and bust than anything else, and these will be sent to you on receipt of a stamped and self-addressed envelope.

5 Ponies To Be Given Away



You Can Easily Get a Pony By Joining My Pony Club



I Have Given Away Almost 200 Ponies

I never heard of any of the children to whom I have given ponies until they sent me their names and addresses, just as I am now asking you to do. Surely you will want to do the same thing these other boys and girls have done—of course you will send me your name right away so you can get a pony outfit all your own and without spending a cent for it. Just think of the good times you can have with one of these charming pets.

Every Boy or Girl Who Joins My Pony Club Will Get a Handsome Prize—Act Quick

The first thing to do if you want "Honey Boy" or one of the other four ponies I am going to give away is to send me your name and address at once with your solution to the puzzle below. For doing that I will give you 5,000 FREE VOTES which is a sure winning start. There is no possible way you can lose. In addition to the five ponies, I will also give away many other fine prizes such as Bicycles, Cameras, Watches, Guns, Bracelets, Rings, etc. In fact I give handsome prizes to everyone who becomes a member of my Pony Club. If you do as I say, you can win "Honey Boy" or one of the other four ponies.

Get a Pony Without Cost

It is easy to get a pony outfit from me and, *bear in mind*—it will not cost you or your parents a cent. All that I ask in exchange for one of these five pretty ponies is that you do a little easy work for me in your spare time. You will be surprised at how easy it is to get a pony and outfit from me and you are sure to win if you show the right spirit and follow the easy directions I give you.

Don't Wait—Write Me To-day

Think how proud you will feel to have a pony outfit all your own. As you go riding down Main Street at a merry clip, people will run to their front doors and say, "My! isn't that the sweetest and most lovable pony you ever saw?"

Don't wait longer, thinking you have plenty of time. Send me your name and address at once with your solution to the puzzle. As soon as I hear from you I will send you several pictures of some of the nearly 200 children to whom I have given ponies. This shows I carry out my promises. **ACT QUICK!** Hurry in your name and address to me with your solution and before long you may be the proud and happy winner of one of these fine dandy ponies. Write quickly to

UNCLE DAVE, The Pony Man
FARM and FIRESIDE
Dept. B Springfield, Ohio

"ROUGH ON RATS" ends RATS, MICE, Bugs, Don't Die in the House. Unbeatable Exterminator. Ends Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The recognized Standard Exterminator at Drug and Country Stores. Economy Sizes 25c, 50c. Small 15c. Used the World Over. Used by U. S. Gov't. Rough on Rats Never Fails. Refuse ALL Substitutes.

Overland GIVEN

Send me your name at once, if you live in the country or town under 10,000, for my new easy plan for winning this New 1917 OVERLAND Touring Car, or \$850 in cash. It will surely appeal to you. No money needed. I have already given away 40 autos. If you want one write today for full particulars. **C. F. ALDRICH, Dept. A, St. Paul, Minn.**

Shoo Fly Plant
KEEPS FLIES OUT OF THE HOUSE

Flies will not stay in a room where it is grown. Very mysterious, but tests show such to be the case. Blooms in a short time (60 days from planting). Flowers both summer and winter. Package of seed by mail with catalogue, 10 Cents. **JAPAN SEED CO., Desk N, South Norwalk, Conn.**

Great Bicycle Offer!

Write for new 1917 catalog. Wonderful 1917 ARROW—new motorcycle type—shipped no money down. Free inspection. Nothing like this bicycle ever offered before. Electric light. Fish Non-Skid Tires, built like a motorcycle. Free catalog gives full description. All sizes for boys, men and women.

Pay As You Ride
Start riding the 1917 Arrow right away. While you're riding, pay only a small amount each month until paid.

Write Today for free catalog and rock-bottom pay-as-you-ride offer. While this offer lasts. **ARROW CYCLE CO., Dept. 4034, 19th St. & California Av., Chicago, Ill.**

Get This Car
And The AGENCY For Your Territory

Drive a new 1918 Model Birch Motor Car. Pay for it out of your commissions. Big Free Book and full information. Address Ralph Birchard, Pres. **BIRCH MOTOR CARS, Dept. 470, 81 E. Madison St., Chicago**

Make More Money!

I want eager, ambitious men, the kind that like to clean up \$40 to \$50 a day. I'll make them winners. Men are getting rich, selling my wonderful 12 tools in one. Pulls posts, stretches wire, fixes wheels, etc. Write me immediately. **P. J. Harrah, Pres. The Harrah Mfg. Co., 52 Spring St., Bloomfield, Ind.**

Would \$150 MONTHLY as General Agent for a \$150,000 corporation and a Ford Auto of your own, introducing Stock and Poultry Remedies, Dips, Disinfectants and Sanitary Products, interest you? Then address **Royoleum Co-Operative Mfg. Co., Dept. N13, Monticello, Ind.**

Bush Car Delivered Free

Ride in a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

Five-Pass., 34.7 H.P. 32x3 1/2 tires

Write at once for my 48-page catalogue and all particulars. Address: **H. Bush, Pres. Dept. 4-RZ, BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois**

AGENTS A Big Seller
New - Patented SCREEN DOOR CHECK

Splendid summer seller. Low Priced. Stops the bang and saves the door. Easy sales. Big profits. Big demand. A sale in every home. Dozen can be carried in pocket. Demonstration sample free to workers. **THOMAS CHECK CO. 4346 East St. Dayton, Ohio**

AGENTS: \$40 A WEEK
Wonderful New Hosiery Proposition

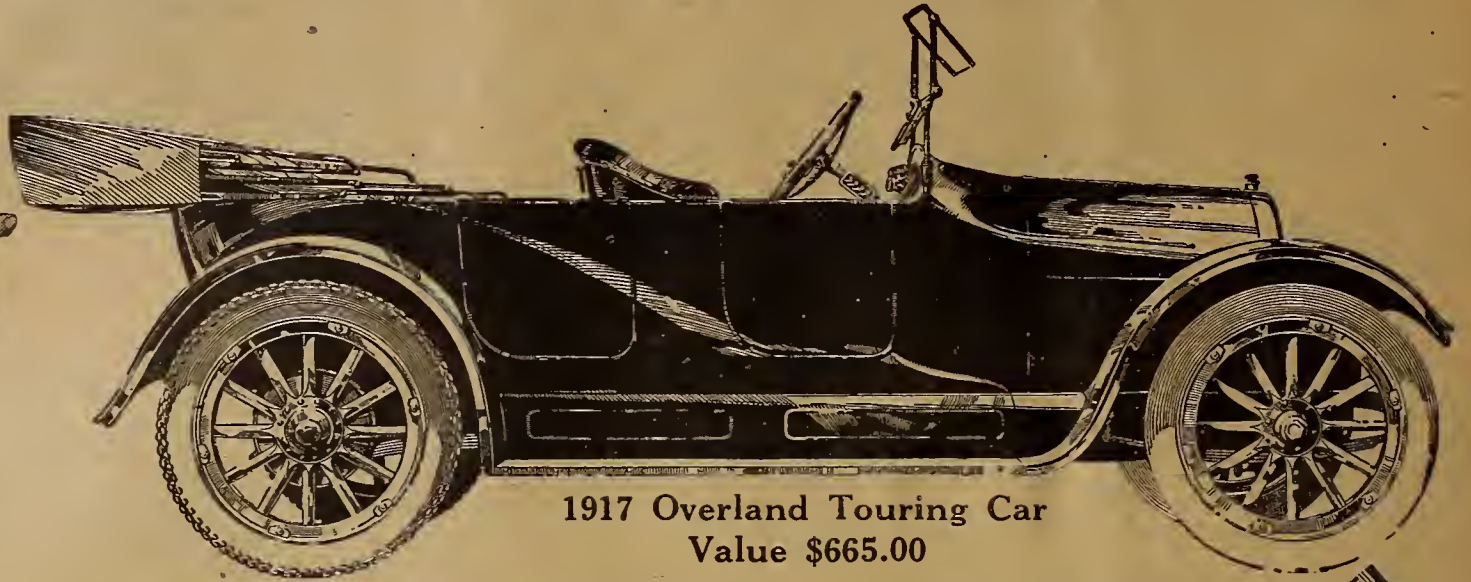
Guaranteed ONE YEAR Must wear 12 months or replaced free. Agents having wonderful success. H. W. Price sold 60 boxes in 12 hours. Mrs. Fields 109 pairs on one street. G. W. Noble made \$35 in one day. Sworn proof. Sold only through agents. Not for sale in stores. A hosiery proposition that beats them all. Your territory still open. Write quick for terms and free samples. **THOMAS HOSEY CO. 5946 Elk St. Dayton, Ohio**

FREE FORD AUTO TO AGENTS

Here's an opportunity to earn big money—\$6 to \$12 a day, with easy work, all your time or spare time and obtain a Ford Automobile free besides. A straight out from the shoulder business proposition. No voting or guessing contest. We want wide-awake men and women to introduce into every home our famous ZANOL Pure Food Products Non-Alcoholic Food Flavors in tubes, Toilet Preparations, Perfumes and Soaps; 250 other light-weight household necessities.

MAKE \$50 A WEEK EASY
No experience necessary—we teach you how, give you the right start and help you make a success. Absolutely no limit to your earning power. We can use only a certain number of General Agents, so get in touch with us at once. We furnish our representatives with a free automobile. Just send postal for particulars and money-making offer. **AMERICAN PRODUCTS CO. 8284 Third St. Cincinnati, O.**

Let Me Make Y-O-U Owner of This Overland



1917 Overland Touring Car
Value \$665.00

WITHOUT COST TO YOU!

Every One An Auto Winner!



Dear Sir:
When you told me I was the winner of the Overland, I could hardly make myself believe it. Please accept my heartiest thanks for the splendid way you treated me throughout the contest and for the handsome prize I so easily won.
Yours truly,
Paul Halbert, W. Va.



Dear Sir:
Words fail me when I attempt to thank you for the Ford Touring Car that I have won. I will surely always speak a good word for the help you gave me in winning this dandy automobile.
Very truly yours,
Mrs. R. B. Kilmer, W. Va.



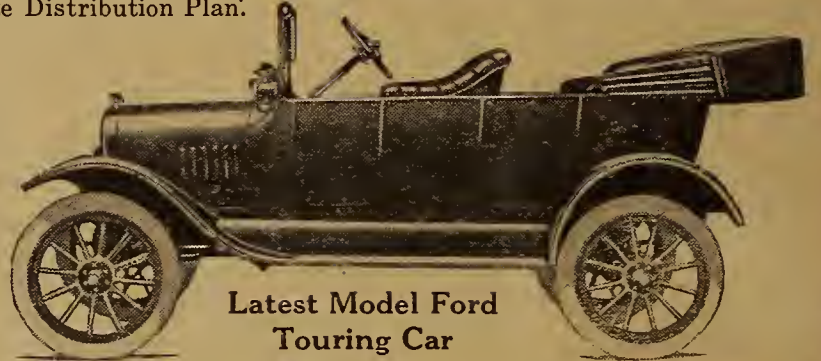
Dear Sir:
I am certainly mighty proud to know that I won the Ford Touring Car. Everyone seemed so anxious to help and hoost me along that I guess I couldn't keep from winning. Thank you again and again for the excellent reward. Sincerely,
Mrs. Geo. Bishop, Ohio.

Can you believe it? In less than TEN WEEKS' TIME—between now and June 16, 1917—YOU can become owner of a brand-new, powerful big 1917 OVERLAND TOURING CAR like the one illustrated above. And the best part of it is, IT WON'T COST YOU A CENT OF YOUR MONEY. I will even prepay the freight to your nearest station. What a thrill would come over you to open your door on June 16th and see this powerful big Overland come rolling up to your doorstep as yours—Yes, YOURS for keeps—to enjoy for years to come. And all as the result of a few weeks' spare-time effort on my new, almost unbelievable Grand Prize Distribution Plan.

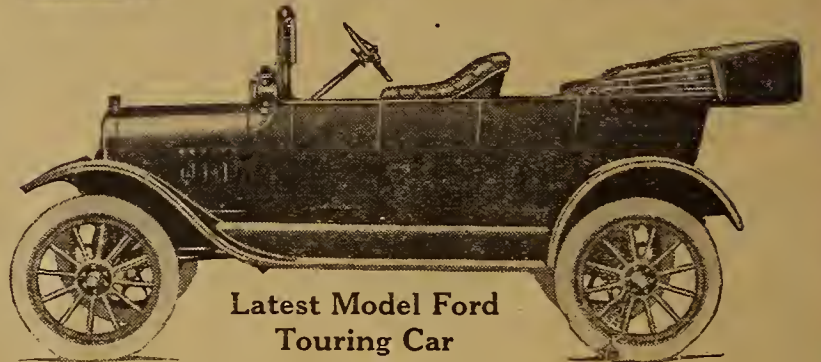
Besides the Overland, I am going to distribute TWO LATEST MODEL FORD TOURING CARS—3 Automobiles in all. Also many other valuable awards, such as Victrolas, Diamond Rings, Gold Watches, Etc., Etc., and Liberal Cash Awards. How can I do it? Your name on the coupon below will, without further obligation to you, bring you the full details of my wonderful almost-too-good-to-be-true offer. I haven't the room to tell it here. Don't delay, but act quick if you want in on this tremendous Distribution of Grand Prizes.

Look at the pictures of the three happy auto owners at the left. Read their letters. Just a short time ago they sent me their names just as I am now asking you to do. And now they are riding about in their own spick-and-span new Touring Cars, thanking their good fortune that they answered my advertisement. You can do the same thing. Neither Mr. Halbert, Mrs. Kilmer nor Mrs. Bishop had any previous experience in doing the favor that I asked of them, but simply followed my instructions.

THIS WONDERFUL PLAN IS NOW OPEN TO YOU! Are you going to keep on letting "someone else" capture the good things in this world? This Grand Distribution Plan is for YOUR benefit. You have as good an opportunity as anyone else. It's the person who acts—who takes advantage of the big opportunities as they present themselves—who gets ahead. Make this YOUR one big Opportunity—be the first in your locality to get one of these automobiles. Just your name on the coupon below will give you the start.



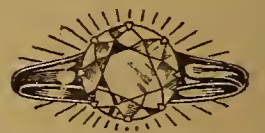
Latest Model Ford Touring Car



Latest Model Ford Touring Car

Fair Play and Honest Treatment Guaranteed!

The fact alone that this Great National Farm Paper, FARM AND FIRESIDE, one of the oldest and most reliable publications in America, has accepted my advertisement is assurance that I will positively do just as I say. In fact, FARM AND FIRESIDE itself has a mighty prominent part to play in my wonderful new offer, and stands back of every promise that I make. But I will tell you all about that when I receive your name. You might think that you can guess what it's all about. Don't take any chances on guessing—you can't afford to do it when such valuable awards are at stake, and when by just enclosing me the coupon you can find out the whole plan. It's an honest, straightforward business proposition, but the rewards are exceptionally big.



\$50.00 Diamond Ring



Handsome Gold Watch

No Losers—A Sure Reward for Everyone!

If you take up my offer and for some reason or other have to drop out before June 16th, there are still 17 Other Elegant Prizes to fall back on, and besides these, I will give a liberal Cash Commission to everyone who does not succeed in capturing a Grand Prize. So in every case, your reward is assured, and is directly in proportion to how well you do the small favor that I ask. The better you do it the more certain you are of becoming the owner of one of the Touring Cars, but no matter how little you do, you will be well repaid for your efforts. Did you ever before hear of anything so astounding? Make up your mind right now that you're going to get your share of these bountiful awards—set your cap for the Handsome Big Overland—let me hear from you AT ONCE!

MAKE THESE NEXT 10 WEEKS BRING YOU THE OVERLAND!

Hurry the Coupon!

The first step for you to take toward owning a dandy automobile without a cent of cost to you, is to sign your name to the attached coupon, and mail it to me RIGHT NOW! There isn't a single thing for you to risk. I will unfold my great plan to you, and if you then do not see fit to do what I ask, you are under no further obligations to me. Be prompt! Prove to yourself that you can do what Mr. Halbert, Mrs. Kilmer and Mrs. Bishop did. Hurry the coupon to me with your name and by return mail I will start you on the road to the ownership of a brand-new never-used Automobile in exchange for your spare time during the next ten weeks. DO IT NOW!

T. R. LONG

Dept. 25, Crowell Bldg. Springfield, O.

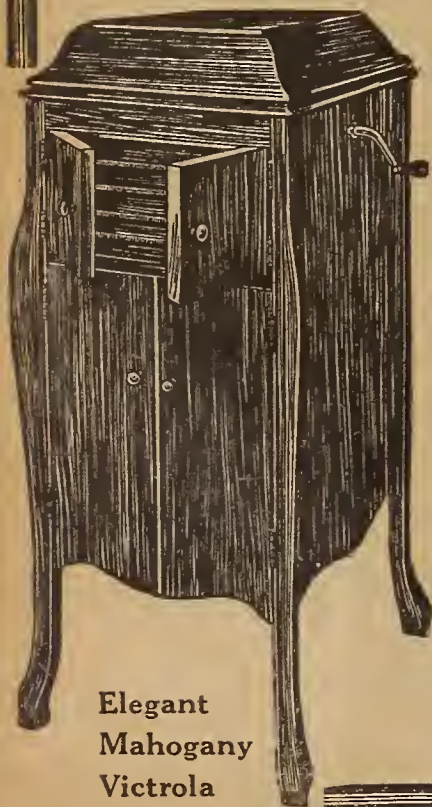
FREE INFORMATION COUPON

Mr. T. R. Long,
Dept. 25, Crowell Bldg.,
Springfield, Ohio.

DEAR SIR: Please submit, for my approval, your interesting and almost unbelievable Grand Prize Distribution Plan. I am particularly interested in getting one of the 3 Automobiles without cost. This request does not place me under any further obligations, should I decide not to accept your offer.

Name
Town R. F. D.
State Box

Coupon Good for 5,000 Votes



Elegant Mahogany Victrola

Pearlie Saves a Life

And Receives a Grateful Letter from Over the Sea

By NELLIE L. McCLUNG
PART II

WHEN Pearl rose from her knees the doctor had lifted his head. "Do you want hot water and sheets and carbolic?" she asked.

He nodded. When she came back with them the doctor was taking off his coat. His instruments were laid out on the box.

"Get a lamp," he said to Pearl. Pearl's happy heart was singing with joy. "O Lord, dear Lord, you never fail!" she murmured as she ran across to the kitchen.

When she came back with the lamp and a chair to set it on, the doctor was pinning a sheet above the bed. His face was white and drawn, but his hand was firm and his mouth was a straight line.

Arthur was tossing his arms convulsively. The doctor listened with his ear upon the sick man's chest; then the gauze cone was laid upon his face, and the chloroform did its merciful work.

Then Horace Clay the man, with a man's mistakes, his fears, his heart burnings, was gone, and in his place stood Horace Clay the doctor, keen, alert, masterful, indomitable, with the look of battle on his face. He worked rapidly, never faltering, his eyes burning with the joy of a true physician who fights to save human life from the old enemy Death.

"You have saved his life, Pearl," the doctor said two hours after. Arthur lay sleeping easily, the flush gone from his face and his breath coming regularly.

The doctor put his hand gently on her tumbled little brown head.

"You saved him from death, Pearl, and me from—something worse."

When Tom and Doctor Barner drove into the yard, everything was silent. The old doctor had been away, as Pearl had hoped, and Tom had waited. The wind had fallen and the eastern sky was bright with morning.

Tom helped the doctor out of the buggy. He tried to unhitch the horse, but the beating of his heart nearly choked him—the fear of what might be in the granary. He waited for the doctor to come back. Then he heard the door open again—the doctor was coming to tell him! Tom's knees grew weak; he held to the horse for support. Who was this who had caught his arm? It was Pearl, crying and laughing.

"Tom, Tom, it's all over, and Arthur's going to git well," she whispered.

Doctor Clay was kneeling in front of the box cleaning his instruments, with his back towards the door, when Doctor Barner had entered. He greeted the older man cordially, receiving but a curt reply. Then the professional eye of the old doctor began to take in the situation.

"What was the trouble?" he asked quickly. The young doctor told him, explaining briefly what he had attempted to do by the operation; the regular breathing and apparently normal temperature of the patient were to the old doctor sufficient proof of its success.

HE STOOPED suddenly to examine the dressing that the young doctor was showing him, but his face twitched with some strong emotion—pride, professional jealousy, hatred, were breaking down before a stronger and worthier feeling.

He turned abruptly and grasped the young surgeon's hand.

"Clay," he cried, "it was a great piece of work, here alone, and by lamplight! You are a brave man, and I honor you."

"Doctor Barner," the young man replied, as he returned the other's grasp, "I thank you for your good words, but I wasn't alone when I did it. The bravest little girl in all the world was here, and shamed me out of my weakness, and," he added reverently, "I think God himself steadied my hand."

The prairie lay sear and brown, like a piece of faded tapestry beneath the November sun, that, peering through the dust-laden air, seemed old and worn with his efforts to warm the poor faded earth.

But in town, inside of Pearl Watson's

*From "Sowing Seeds in Danny." Copyright by Doubleday, Page & Co.

home, in spite of November dullness, joy and gladness reigned, for was not Pearl coming home?

The younger children, whose appetites were out of all proportions to the supply, were often "tided over" what might have been a tearful time by a promise of the good time coming. When Danny cried because the bottom of his porridge plate was "allus stickin' t'rough," and later in the same day came home in the same unmanned condition because he had smelled "chickens cookin' down at the hotel" when he and Jimmy went with the milk, Mary rose to the occasion and told him, in a wild flight of unwarranted extravagance, that they would have a turkey when Pearl came home!

The house had undergone many elaborate preparations for the joyous event. The children were scrubbed until they shone, Bugsy's sweater had a hole in the "chist," but you would never know

alarm, beating on the window, maudlin with happiness. While Pearl said good-bye to Tom Motherwell, who had brought her home, Tommy and Bugsy and Patsy waited giggling just inside the door, while Mary and Mrs. Watson went out to greet her.

PEARL was in at last, kissing every little Watson, forgetting she had done Tommy, and was doing him over again, with Danny holding tightly to her skirt through it all, and everybody talking at once. Then the excitement calmed down somewhat, but only to break out again, for Jimmy, who had been downtown, came home, and found the box which Tom Motherwell had left on the step after Pearl had gone in. They carried it in excitedly, and eager little hands raised the lid and eager little voices shouted with delight.

"Didn't I tell ye we'd have a turkey when Pearl came home?" Mary cried triumphantly. Pearl rose at once to her old position of director-in-chief.

"The turkey'll be enough for us, and it'll be done in time yet, and we'll send the chicken to Mrs. McGuire, poor owld lady. She wuz good to me the day I left. Now, Ma, you sit down; me and Mary'll git along."

Two hours later the Watson family sat down to supper—not in sections but the whole family. The table had long since been inadequate to the family's needs, but two boards with a flour sack on them, from the end of it to the washing machine, overcame the difficulty.

Was there ever such a turkey as that one? Mrs. Watson carved it herself on the back of the stove. Ten plates were heaped full of potatoes, and turnips, turkey, brown gravy and "stuffin'," and still that mammoth turkey had layers of meat upon his great sides.

When the plates had all been cleaned the second time, and the turkey began to look as if something had happened to it, Mary had brought in the surprise of the evening—it was the jelly Mrs. Evans had sent, "a present from Algernon,"

when she let Mary come home early in the afternoon, and the whipped cream that Camilla had given Jimmy when he ran over to tell her and Mrs. Francis that Pearl had really come. Danny was inarticulate with happiness.

"Lift me down, Pearlie," he murmured sleepily as he poked down the last spoonful, "and do not jiggle me."

When Patsy and Bugsy and Tommy and Danny had gone to bed, and Mary and Mrs. Watson were washing the dishes, John Watson sat silently smoking his pipe, listening with delight while Pearlie related her experiences of the past three months.

She was telling about the night that she had watched for the doctor. Not a word did she tell about her friend the doctor's agitation, nor what had caused it.

A knock sounded at the door. Teddy opened it and admitted Camilla and Jim Russell.

"I've got a letter for you, Pearl," Jim said when the greetings were over. "When Tom brought the mail this evening this letter for you was with the others, and Arthur brought it over and asked me to bring it in."

Pearl took the letter wondering.

"Read it, Camilla," she said, handing it to her friend. Camilla broke the seal and read. It was from Alfred Austin Weymuss, rector of St. Agnes, Tillbury Road, County of Kent, England. It was a stately letter, becoming a rector, dignified and chaste in its language. It was a letter of a dignitary of the Church to an unknown and obscure child in a distant land, but it told of a father and mother's gratitude for a son's life saved; it breathed an admiration for the little girl's devotion and heroism, and a love for her that would last as long as life.

Pearl sat in mute wonder as Camilla read—that could not mean her.

"We do not mean to offer money as a payment for what you have done, dear child, for such a service of love can only be paid in love, but we ask you to accept from us this {CONTINUED ON PAGE 31}

Riding the Horses to Water

By Florence Jones Hadley

WHEN the clover bloom whitened the roadside,
And wheat fields gleamed in the sun,
When the meadow lark sang from the hillside
In joy of a new day begun,
When the wild rose bloomed in the thicket,
Half hid in the cool dewy grass,
We rode the horses to water—
A barefooted laddie and lass.

When the sun trailed his crimson and purple
Behind the tall poplar trees,
When the bird note was hushed in the thicket
And the clover bloom dreamed of its bees,
We hastened away to the meadows,
Down through the soft dew-wet grass,
To ride the horses to water—
A barefoot laddie and lass.

O my clover-starred, fragrant meadow,
How far off you seem to-day!
And your little path on the hillside
Seemed never so far away!
My heart ever cries for the children
And the stir of the wind-blown grass,
As they rode the horses to water—
A barefooted laddie and lass.

it in the way he held his hand. Tommy's stocking had a hole in the knee, but he had artfully inserted a piece of black lining that, by careful watching, kept up appearances.

Mrs. Watson, instigated by Danny, had looked at the turkeys in the butcher shop that morning, asked the price, and came away sorrowful. Even Danny understood that a turkey was not to be thought of. They compromised on a pot roast because it makes so much gravy, and with this and the prospect of potatoes and turnips and prune pie the family had to be content.

Mrs. Watson was peeling the potatoes and singing. Mrs. Watson sang because her heart was glad, for was not Pearlie coming home? But she was soon interrupted by a shout which sounded outside, and Bugsy came tumbling in and said he thought he had seen Pearlie coming away down the road across the track. Whereupon Danny cried so uproariously that Bugsy, like the gentleman he was, modified his statement by saying it might be Pearlie and it might not.

But it was Pearl sure enough, and Danny had the pleasure of giving the

The Story of Part I

LITTLE PEARLIE finds Arthur, a young Englishman staying with the Motherwells, very ill. Tom Motherwell goes for old Doctor Barner, although Pearlie thinks young Doctor Clay the only one who can save Arthur by an operation. She hears him drive by on his way to attend a young neighbor, and intercepts him on his return. But when she tries to get him to perform the operation the doctor refuses, saying he has killed the other young man by lancing his throat for quinsy when he really had diphtheria. He is afraid to begin on Arthur. Pearlie drops on her knees and prays that the doctor will recover his nerve.

"We are advertised by our loving friends"

Prepare baby's food according to the
Mellin's Food
Method of
Milk Modification



William Henry Horne, Portsmouth, O.

Send today for our instructive book,

"The Care and Feeding of Infants"

also a Free Trial Bottle of Mellin's Food

Mellin's Food Company, Boston, Mass.



PARKER'S HAIR BALSAM
A toilet preparation of merit. Helps to eradicate dandruff. For Restoring Color and Beauty to Gray or Faded Hair. 50c. and \$1.00 at Druggists.

Japanese Rose Bushes Five for 10 cts.

The Wonder of the World
Rose Bushes with roses on them in 8 weeks from the time the seed was planted. It may not seem possible but we **Guarantee** it to be so. They will **BLOOM EVERY TEN WEEKS**, Winter or Summer, and when 3 years old will have 5 or 6 hundred roses on each bush. **Will grow** in the house in the winter as well as in the ground in summer. **Roses All The Year Around.** Package of seed with our guarantee, by mail, **Only Ten Cents.** Japan Seed Co., Box 641, South Norwalk, Conn.

Better Quality

At Wholesale Prices
Direct from manufacturers, who can save you \$10 to \$30 on the best range made. Newest designs—white enamel splasher backs, etc. Write for Catalog. Take a Kalamazoo on our 30 days' trial plan and see what you can save. We pay freight—quick shipment. Ask for Catalog No. 183. **KALAMAZOO STOVE CO.** Manufacturers Kalamazoo Michigan Direct to You

Hardy Everblooming 6 ROSES Postpaid For Only 25c

All Sure to Bloom and Bloom All Summer
Clothilde Soupert, delicate variegated. Star of France, the richest of all reds. White Cochet, a magnificent white. Hermosa, the popular pink. La France, beautiful rasy pink. Marechal Neil, a deep yellow.

Our 25c Collections
6 Chrysanthemums 25c
6 Fuchsias 25c
6 Carnations 25c
6 Geraniums 25c
6 Coleus 25c
6 Tuberous Begonias 25c
6 Tuberoses 25c
12 Gladioli 25c
12 Pansies 25c

The 10 collections, including the 6 Roses, 72 Plants, for \$2.00.
Any Five Collections For \$1.00
We guarantee satisfaction and safe arrival. Our 1917 catalog, "Floral Gems," showing over 100 flowers in natural colors, sent **FREE** McGregor Bros. Co., Box 626 Springfield, O.

Judge Not

By Lucien M. Lewis

JUDGE not your neighbor harshly,
O you that rashly call!
Think twice before you judge him,
And then—judge not at all.
You think him cross and crabbed
And sort o' mean, I know—
Is it the beam of self-esteem
That makes you think him so?

Think kindly of your neighbor,
He's so much like yourself;
So eager to be happy,
And chasing after pelf;
Before you contradict him
Or call him low and vile,
Just say, "This day I'll go his way
And chat with him a while."

The Bellow

By William Johnson

HAVING eyes, the Bellow sees only
thorns and deformity.
Having ears, he hears only the grind
of toil and the squeak of rusty gears in
a system that's all wrong.
His soul has no inner shrine where
the good and true things of life are seen
in the wonder that is worship.
The best of the Bellow has not been
born; or, if born, it has died in the
shadows of defective understanding. All
about him is an undiscovered world. He
is an alien to the delights of trusting
companionship with man and nature.
Home itself is merely a combination
for which he must sweat and slave. The
laughter of his children dies in his pres-



ence. And by the wretched chemistry
of pessimism his wife becomes a mere
harness mate—with galled shoulders.
This crime of the Bellow—happi-
ness killed, enthusiasm smothered, and
a home life dwarfed—is not light. But
the punishment is in proportion.
He must live in a world as small and
disordered as his dim vision sees. Some
calamity always impends. Only once
in a while, when the gods sleep, do
things go right.
In the Bellow the community loses
a good neighbor. But in the community
the Bellow loses friends, compani-
onship, and—but that's punishment
enough.

New Puzzles

Cakes and Pennies

Three little schoolgirls made their
luncheon of cakes. Mary bought 4 and
Jennie 7. To pay for her part of the
banquet, Carrie contributed 11 cents,
which Mary and Jennie divided between
the two so as to equalize finances. Each
of the three girls ate the same amount
of cake and they shared the expenses.
The transaction appears to be quite
puzzling, but to these young schoolgirls
it was no more trouble to divide 11 cents
between two than it was equally to con-
sume 11 cakes among three.
How did Mary and Jennie divide the
11 cents?

Curtilments

Curtil an American coin and leave
obscure.
Curtil a word meaning to partake of
food and leave a loud noise.
Curtil a word meaning accomplished
and leave a Spanish title.
Curtil a nobleman and leave an or-
gan.
Curtil to nourish and leave a price
paid for services.
Curtil a sum of money and leave
merriment.
Curtil to roll up and leave a natural
covering.
Curtil a dress and leave a fish.
Curtil a bird and leave a man of
bravery.
Curtil great dimensions and leave to
embrace.

Answers to Puzzles

Puzzles Printed Last Issue

Puzzling Synonyms

Flute, lute; ledge, edge; bark, ark;
or craft, raft; fox, ox.

Reduce your egg bills by using Royal Baking Powder



One of the superior qualities of Royal Baking Powder is its use in place of eggs in the making of fine cakes, muffins, and other home baked foods. In nearly all recipes, excellent results may be obtained by reducing the usual number of eggs and using an additional quantity of Royal Baking Powder, about a teaspoon, in place of each egg omitted. The following recipes illustrate how this can be done and great economy thereby effected.

Nutritious, as Well as Economical Easily Made, Appetizing and Keeps Well A one egg cake that will please everybody



CORN BREAD

1 1/2 cups milk
2 tablespoons shortening
1 3/4 cups corn meal
1/4 cup flour
4 teaspoons Royal Baking Powder
1 tablespoon sugar (if desired)
1/2 teaspoon salt

The old method called for 2 eggs
DIRECTIONS:—Sift the dry ingredi-
ents into bowl, add milk and melted
shortening; beat well and pour into
well greased pan or muffin tins and
bake in hot oven about 25 minutes.



EGGLESS, MILKLESS, BUTTER-
LESS CAKE

1 cup brown sugar 1/8 cup shortening
1 1/4 cups water 1 teaspoon nutmeg
1 cup seeded raisins 1/2 teaspoon salt
2 ounces citron, cut 2 cups flour
fine 5 teaspoons Royal
1 teaspoon cinnamon Baking Powder

The old method (Fruit Cake)
called for 2 eggs
DIRECTIONS:—Boil sugar, water, fruit,
shortening, salt and spices together in
saucepan 3 minutes. When cool, add flour
and baking powder which have been sifted
together. Mix well; bake in loaf pan
about 45 minutes.



EVERYDAY CAKE

1/4 cup shortening
1 cup sugar
1 egg
1 cup milk or water
2 cups flour
3 teaspoons Royal Baking Powder
1/2 teaspoon salt
1 teaspoon extract

The old method called for 3 eggs
DIRECTIONS:—Cream shortening;
add sugar, flavoring and well beaten
egg. Sift together flour, salt and
baking powder and add alternately
with the milk to the mixture. Bake
in loaf, layers or patty pans. May
also be used for cottage pudding.

Booklet of practical recipes which economize in eggs and other expensive ingredients mailed free on request.
Address ROYAL BAKING POWDER CO., 124 William Street, New York

Royal Baking Powder

Made from Cream of Tartar, derived from Grapes, adds none but healthful
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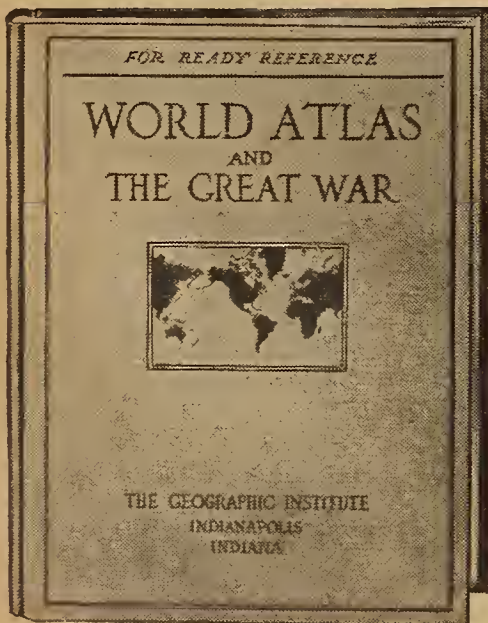
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Name

P. O.

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The Blue Envelope

[CONTINUED FROM PAGE 24]

Well, I must arrive somewhere, sometime. So I pushed on, sometimes on horseback and sometimes on foot, until I had traveled the better part of two hours. And then my battered, wandering road led me out of the woods and right up to a neat little farm and a respectable little house.

I got off and knocked at the door. It was promptly opened by a stout, capable-looking woman.

"Is this Mrs. Nasworthy?" I asked, remembering the name Mrs. Kröll had used.

"Laws, no!" she returned. "Was you looking for Nasworthy's? They're quite a ways from here—over beyond the Krölls. How'd you ever get so far out of your way?"

"I don't know," I said. "I was just stupid, I suppose. This country is so very little settled, I've seen no place or no one to ask."

The stout lady smiled a superior smile and burst into voluble speech.

"That's what I often say to Jabez. 'Jabez,' I say, 'if we didn't know where to find the neighbors I'd feel as if we hadn't none.' But they ain't so far if you get used to it. When we first come out here I was as lonesome as a stray cat on the door sill, but we bin out here seven year now and I never think nothing about it. Besides, we're busy—we got a dairy farm. You want to go to Nasworthy's, do you?"

"I believe," I said cautiously, "since I've come so far out of the way, I'll just go back to town. Your husband—is he here?—could he possibly take me? My horse is tired—" I waved my hand vaguely back at my charger.

"Why, I don't know but you could ride along with him," said the stout lady. "He's just about ready to go down t' the creamery with the milk. He's fixin' to go in the auto. But say, what'll you do with your horse?"

"Mrs. Kröll is a friend of mine," I said, "and she'll take care of my horse for me. Can't your husband, or maybe your little boy, take it over there for me to-day or to-morrow? I'll gladly pay for the kindness. Just tell Mrs. Kröll that Mrs. Davis' niece sent it."

Heaven only knows what the stout lady thought. But the bill I held out to her was sufficient persuasion. She decided that she could send the horse back (sure enough, she did have a son, a shy little fellow, about ten years old, who peeped at me from afar) and she asked me in to rest, an invitation I accepted.

IT WASN'T very restful, though, for I didn't know what Mrs. Davis might resort to next. She seemed to me to be perfectly capable of summoning a motor or an aeroplane and hunting me down in short order. I sat there looking out of the window to see if anyone was coming and wishing fervently that Jabez and the auto would appear, and my heart leaped when I heard the chug of the auto that was to bear me and the fateful blue envelope into town. What town, I did not know and did not want to ask, but it would be reasonably sure to have a telegraph wire and a railroad.

"Where do you wish to go to, Miss?" at last asked the hitherto speechless Jabez, after we had been traveling along the road for some time.

"To the telegraph office," I said, and the words were hardly out of my mouth when he dipped and turned and ran down a long hill into a quiet little town right before us.

"Telegraph office's down at the station," said Jabez.

So there was a railroad, and real trains that would carry me away from my ominous captors. My heart fairly jumped at the words.

An elaborately indifferent station agent replied to my questions. Yes, thurr was a train to Philadelphia nabout a nour. Ituz nacomodation. Itud take three hours t' get t' Philadephy. Fare's two eighty-seven.

I bought a ticket, and then I walked outside to see what the name of the town might be, and discovered it painted high on the side of the station—Fairhope, certainly an auspicious name, but I hadn't the slightest idea as to whether it was in Pennsylvania or New Jersey, and I didn't want to ask the ticket agent any more questions. I was in two minds about sending telegrams. It didn't seem much use to send one to Mr. Kennedy, since he was in Toronto, and certainly there was no use to send one to Uncle Bob, since he wasn't aware of my adventure. I thought long and hard about it and finally I went inside and wrote two telegrams, one to Minnie:

Everything all right. Will return to New York this evening. LESLIE BRENNAN.

The other was longer and very melodramatic, I'm afraid, but I couldn't think of anything else to do that would

be the slightest safeguard to me. So to the chief of police, New York, I sent the following:

While carrying secret powder formula for Ewan Kennedy, 567 Shade Avenue, The Bronx, was kidnapped and taken from train at North Philadelphia by woman calling herself Augusta Davis, with accomplice named Fischer; took me to Kröll's farm near Fairhope; have escaped; will take one o'clock train for Philadelphia. Please have train crew asked to look out for me; fear further trouble. New York address is with Mrs. Harris, 70 East Ninetcenth Street. LESLIE BRENNAN.

The stodgy ticket agent's eyes bulged when he read this—no wonder!

"Say," he burst out, "you must be bughouse. I know them Krölls and they're all right."

"There's the telegram," I said. "It's your business to send it. How much will it be?" And he subsided with mutterings. Presently I heard him clicking it off, and though I didn't suppose that the chief of police would pay any attention to it, it made me feel safer. Besides, if Mrs. Davis and Fischer should turn up and find that I had sent that telegram, it might make them hesitate to lay hands on me again.

So down I sat to wait for the train, keeping an eye on the only road of approach to the station.

The minutes crawled by. Finally there was a slight stir and someone said, "Here she comes," and I went out on the platform, and saw, away down the track, the train approaching. Then the violent squawking of an automobile horn tore the air. I turned. Not fifty yards from the station came an open car, violently driven, and, standing in the back and waving her arms was—Mrs. Davis!

The train was almost in. I didn't hesitate a second, but ran straight across the track. [CONTINUED NEXT ISSUE]

Pearlie Saves a Life

[CONTINUED FROM PAGE 29]

little gift as our own daughter would accept it, if we had one, and we will be glad to think that it has been a help to you in the securing of an education. Our brother, the bishop, wishes to add to our little sum, and asks you to take from him a gift of twenty pounds, and it is his desire that you spend it in whatever way will give you most pleasure. We are, dear Pearl, your grateful friends, Alfred and Mary Weymuss."

"Here is a Bank of England draft for one hundred and twenty pounds, nearly six hundred dollars," Camilla said as she finished the letter. The Watson family sat dumb with astonishment.

Just then Doctor Clay came in with a letter in his hand.

"My business is with this young lady," he said as he sat on the chair Mrs. Watson had wiped for him, and drew Pearl gently toward him. "Pearl, I got some money to-night that doesn't belong to me."

"So did I," Pearl said. "No, you deserve all of yours; but I don't deserve a cent. If it hadn't been for this little girl of yours, Mr. Watson, that young Englishman would have been a dead man."

"Faith, that's what they do be saying, but I don't see how that wuz. Yer the man yerself, Doc," John replied, taking his pipe from his mouth.

"No," the doctor went on, "I would have let him die if Pearl hadn't held me up to it and made me operate."

Pearl sprang up almost in tears. "Doc," she cried indignantly, "haven't I told ye a dozen times not to say that? Where's yer sense, Doc?"

The doctor laughed. He could laugh about it now, since Doctor Barner had quite exonerated him from blame in the matter of Ab Cowan's death, and given it as his professional opinion that the young man would have died anyway, the lancing of his throat having perhaps hastened but not caused his death. "Pearl," the doctor said, smiling, "Arthur's father sent me fifty pounds and a letter that will make me blush every time I think of it. Now, I cannot take the money. The operation no doubt saved his life, but if it hadn't been for you there would have been no operation. I want you to take the money. If you don't, I shall send it back to Arthur's father and tell him all about it." Pearl looked at him in real distress. "And I'll tell everyone else, too, what kind of man I am. Jim here knows it already."

"Oh, Doc," she cried, "you're worse than Danny when you git a notion in yer head. What kin I do with ye?"

"I don't know, Pearl," he laughed, "unless you marry me when you grow up." "Well," Pearl answered gravely, "I can't do that till Ma and Pa git the family raised, but I do think ye need a firm hand over ye."

"I do, too," he said, smoothing back her brown hair, "and I'm not in a hurry."

New Clothes for the Summer

No. 3245—Boy's Suit

No. 3246—Girl's Dress

No. 3245—Boy's Sailor Suit. 4 to 8 years. The price of this pattern is fourteen cents

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No. 3246

No. 3246

No. 3249

No. 3249

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No. 3024

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No. 3023

No. 3024

No. 3269

No. 3105

No. 3190

No. 3215

No. 3190

No. 3215

IN THE spring the woman's fancy lightly turns to thoughts of clothes—not only clothes for herself, but for the children as well. Spring days are ideal for sewing, and the wise woman does as much as possible now to avoid having to make little dresses during the hot and busy summer months.

The attractive and sen-

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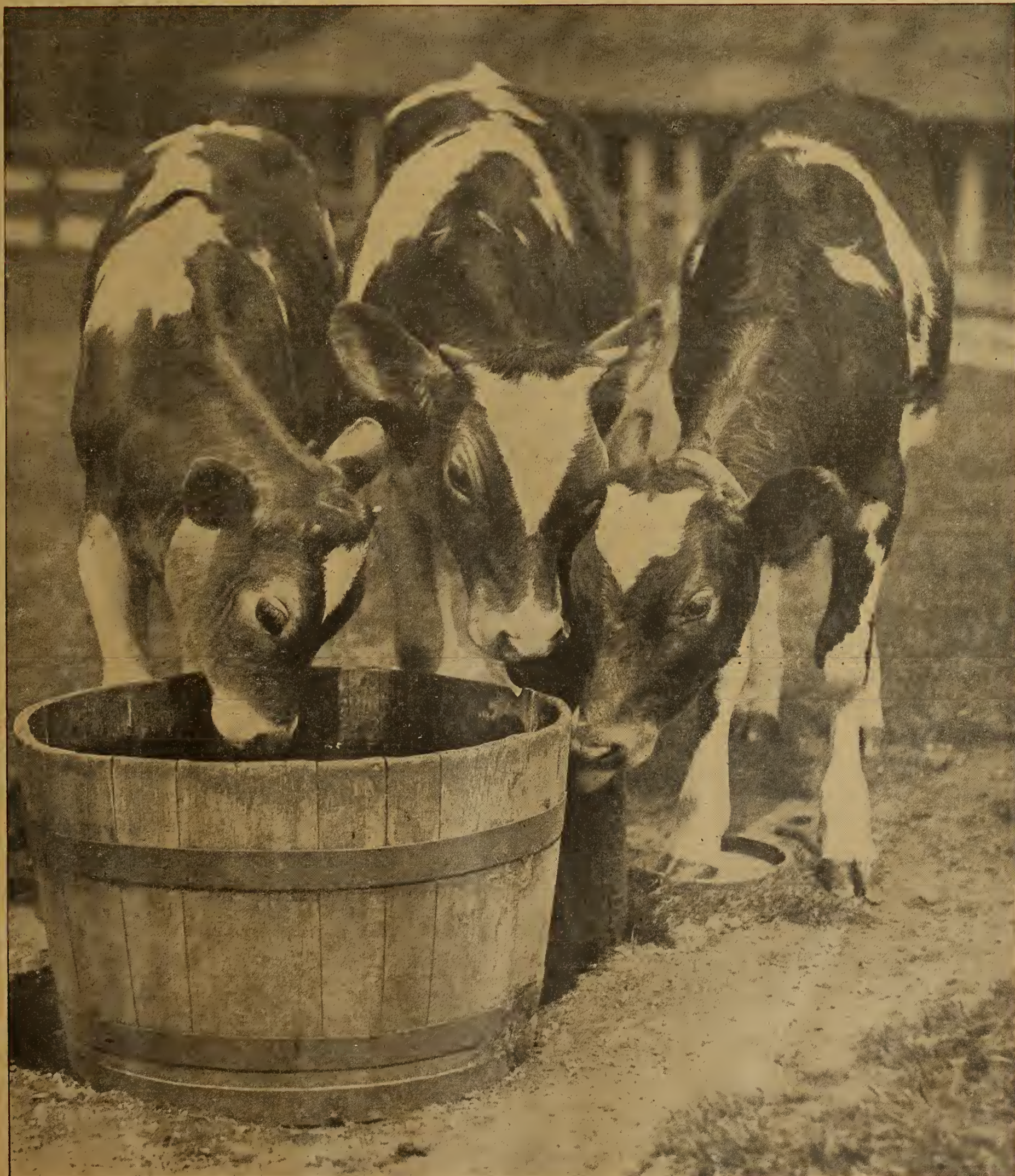
The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, April 21, 1917

Eastern Edition



PHOTOGRAPH BY CLARENCE A. PURCHASE

A Quality Trio



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Hudson Super-Six



FARM and FIRESIDE

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No. 14

Selling Butter Direct

Weddings and Sociables Furnish Names of Good Customers

By CHARLES E. RICHARDSON



The three cents insurance results in more careful handling at the post-office

saved the names of those who seemed as though they might be good prospects. I also kept a close watch of the weddings and made a record of the names and addresses. The same was true of church sociables and other events from which I could secure the names and addresses of those likely to be interested in sanitary, fresh-made farm butter.

I wrote them all a letter similar to this:

DEAR MADAM: Dr. Wm. P. Brooks of the Massachusetts Agricultural College states in his work on agriculture that there is a nice flavor and aroma found in fresh-made farm butter that cannot be found in any other butter, no matter how well made, if it is kept for a long time. Did you ever try it? I sell fresh-made butter, churned under absolutely sanitary conditions, direct from the farm to customers. My price is — per pound in one-pound lots and — per pound in five-pound lots by prepaid parcel post. Trusting I may receive a trial order, I am,
Yours respectfully, etc.

Of course, I did not get answers to all of these letters, but I received so many orders that I soon had all the customers I wished. Parcel post has been a satisfactory method of delivering, but at first I had some difficulties. At times the butter would be delayed or be missent and arrive soft and in poor condition. One customer reported she did not receive it at all. But I was getting five cents premium over the market price and was willing to make everything right.

I found that once customers got the habit of eating fresh-made butter they did not wish to go back to the cold-storage article. I considered sending by express, but it was not convenient since I would have to drive five miles to the express office, whereas if sent by parcel post I could ship from my own door. Finally I learned how to make the butter go quickly, carefully, and safely. One customer wished me to insure the package sent by parcel post. It cost only three cents more. I now send all shipments insured, and have since had no shipping troubles. The little three cents insurance makes the postal employees take an extra amount of interest, and each one is anxious to get it out of his care and responsibility. So it goes directly to the customer in good condition.

Cartons are Worth the Cost

WHEN I first began to obtain my butter customers in the manner outlined, I found the majority of the people were interested in the fact that the butter came directly from the farm. In an indirect way I learned that they would tell their friends, "Now we have our butter come right from the farm direct to us." There was pride in letting others know of it. And while I was always careful to have the butter of the finest quality, I knew that the judgment of a good many people is influenced by the senses of taste and



Each employee speeds the package on its way. This means prompt delivery

MOST dairymen living some distance from a city have difficulty in getting a fair price for their products. Generally there is a middleman who for little work gets a lion's share of the profit. In wholesaling farm crops the commission man is perhaps an advantage, but if a farmer can retail certain products, there is an interesting profit for him.

A few years ago I sold my butter to our local country store, and the storekeeper gave me one half cash; the remaining one half I took out of the store in trade. Such an arrangement was fairly satisfactory while I had only a few cows, even though the cash price was five cents less than the market. But I wanted to increase my herd, as I liked the butter-making branch of farming here in New Hampshire.

In the endeavor to find a better market I wrote to different grocery stores in Boston, which is our nearest large city, also to the stores in near-by towns. But they could not see that fresh-made farm butter was any better to sell than creamery butter, which they were already handling. Hotels and restaurants were also well supplied; in fact, I could not do business with them at all, as I could not furnish as much in a week as they used in one day.

Then I advertised in the city papers and received a few answers. I did a little business in that way, but not enough to pay for the advertising. I heard so much about the great help that Uncle Sam's parcel post was going to be in getting producer and consumer together that I investigated that also. I sent my name and address to the five nearest city post-offices, to be placed on their lists kept in the post-offices for prospective buyers to look over. Well, that was three years ago, and so far I have not received one inquiry or order from that source.

Then an idea came to me that has helped me to solve my problem. While reading the daily paper one evening I noticed a column of cooking recipes sent in by various people, mostly women. Each recipe had the name and address of the contributor after it. I wondered if they might not be interested in fresh-made farm butter. So I



Most of my customers are interested in the fact that the butter comes direct from the farm. So I make this my chief selling argument

smell as well as by sight. If what they see looks good, the other senses are more easily satisfied.

So I began to figure and plan the best way to have my butter look "good enough to eat," as the old saying goes. I had previously used a one-pound butter printer, square, plain, and the same as my neighbors who sold butter used. While butter stamped with it looked clean and neat, I wanted a more distinctive one. So I had my brother, who is something of a craftsman, make me one that stamped 16 squares of one ounce each. These are arranged in two rows, eight squares in a row, and each square has my initial stamped in the butter. This package made a decided "hit." Of course, each piece was wrapped in sanitary parchment paper. Others may consider such a package too much work, but I was after the best trade and the best prices. By writing to various firms making butter cartons, I got prices and samples from which I made a selection. The prices of paper and such materials are high at present, but I am able to get plain pasteboard containers for \$12.50 a thousand, and with the freight added the cost is a trifle less than a cent and a half apiece. I also purchased a rubber stamp bearing the words "Fresh-made butter, net weight 1 lb, sanitary carton and wrapper," including my name and address. This stamp had to be specially made and cost \$2.75.

With it I carefully stamp each carton. When I consider the time saved in packing butter in cartons over the old method of wrapping and the better condition in which the butter arrives, the cartons are much the better method.

Experience has taught me that to charge a low price gives the impression of a cheap article. But if you charge a good price customers will feel that the quality is better than ordinary goods. Of course, judgment must be used, for there are people who figure closely and have to be economical. But I endeavor to select my prospective customers from the sections of cities where the well-to-do reside.

Such people generally purchase the best, regardless of the cost. So if they can only be induced to try they will cheerfully pay five [CONTINUED ON PAGE 9]

Consolidating Schools

Where Country Children Get Better Teaching at Less Cost

By JUDSON C. WELLIVER



The one-room schoolhouse cannot compete with the well-equipped town school

I AM in favor of consolidating and grading in rural schools, and many of our people here are; but we can't make headway because it has been impossible to make folks believe that town schools can be maintained in the country without greatly increasing the cost."

I quote from a letter received from a member of the FARM AND FIRESIDE family who particularly wanted information based on actual experience regarding this matter of cost of consolidated schools.

Consolidation of rural schools has been carried farther in Massachusetts than in any other State. About 65 per cent of the towns in that State have established consolidation of some or all of their schools. In some districts as many as ten schools have been closed and all of their territory turned over to the new consolidated institution.

These Massachusetts consolidations represent all kinds of circumstances and conditions, so that it is pretty safe to assume that the average of their financial experience is fair.

Sixty per cent of the towns in which consolidation has been effected report that it costs less to maintain consolidated schools than it formerly did for the individual small schools. Fifteen per cent reported that the cost was the same but results better. Eight per cent found the cost slightly more and the results much better. Eight per cent said the costs were greater, but did not discuss the quality of work done.

The remaining nine per cent did not discuss either costs or results. As a result of elections and other expressions of public opinion on the system, it was found that 70 per cent of the people approved and 30 per cent disapproved of consolidation. It will be observed that the percentage of approval just about matched the proportion of cases in which positive economy has been effected.

The first consolidation of rural schools in the country, for the specific purpose of bettering educational opportunities, seems to have been at Montague, Massachusetts, in 1875. This school has about 175 pupils, more than one fourth of them in high-school grades. This is decidedly a larger percentage than most town schools show, and bears out the assertion that with proper organization and facilities the country is actually able to furnish more and better education to children than the town. A full four-year high-school course is provided in this Montague school, preparing graduates for college just as in town schools. The plan is popular with the pupils because it affords them social opportunities impossible under the one-room school plan.

The total cost of this consolidated school is stated by the Massachusetts educational authorities to be \$600 a year less than was the cost of the small district schools represented by the consolidation. The high-school teachers are nearly all college graduates; those in the grades have had normal training. The children were transported in wagons, about one half the total number requiring regular transportation. The routes are from two to five miles long, and the drivers are under contract, making their route as regularly as mail carriers do. The wagons do not

stop at all of the houses where pupils live, but pick them up at regular stations.

One of the oldest and most successful consolidations of country schools is at Concord, Massachusetts. This originated nearly forty years ago, primarily in a desire to save money. The township had an area of about 25 square miles, and a population of about 4,000. The township high school was built in the village in the center of the town, and the small outlying schools were closed one by one. The school board adopted the policy of peremptorily closing a school whose pupils fell below ten in number, and also any other school whose patrons asked it. At first there was much opposition in some districts, landowners fearing that to lose their school would injure property values. The contrary has been their experience.

The great majority of country schools in Massachusetts are now on a consolidation plan. One of the most interesting conclusions from their experience is that farm pupils attending the consolidation schools are more regular in attendance than are the pupils in town schools. The extent to which consolidation has gone in Massachusetts is indicated by the statement that out of 16,000 teachers employed in the State fewer than 900 are in one-room schools.

It might be imagined that some special conditions in a densely populated State like Massachusetts particularly favor consolidation. That does not seem to be true. In Ohio about one fifth of all the rural townships now have consolidated schools and in recent years the legislature has passed laws to encourage and promote consolidation, which is going forward at a most encouraging rate. Considering that the consolidation movement did not start in Ohio until a little more than twenty years ago, Ohio's progress is even more rapid than was that of Massachusetts in a similar period.

One of the big contributions to rural-school development is the teacherage. Everybody knows what a parsonage is—the parson's residence furnished for him by the parish. A teacherage is exactly the same thing for the teachers—furnished by the school district. The Bureau of Education of Washington has worked out very careful plans for both buildings and grounds for such an establishment.

In the State of Texas, from 200 to 300 of these educational plants, including consolidated schools and teacherages, have been built. Washington State now has 100 or more of them.

Some communities report that improvement of schools is more difficult in sections where many of the farmers are renters, because renters feel no particular attachment to the community. On the other hand, there are communities which report that the renters can commonly be relied upon to support movements for school improvement because they are not taxpayers, and are perfectly willing to vote taxes which the landlords will have to pay.

It is almost universal testimony that children who are well educated in the country—that is, those who are given advantages equal to a high-school course—are more likely to remain on the farms than those who are sent away to town for their schooling.

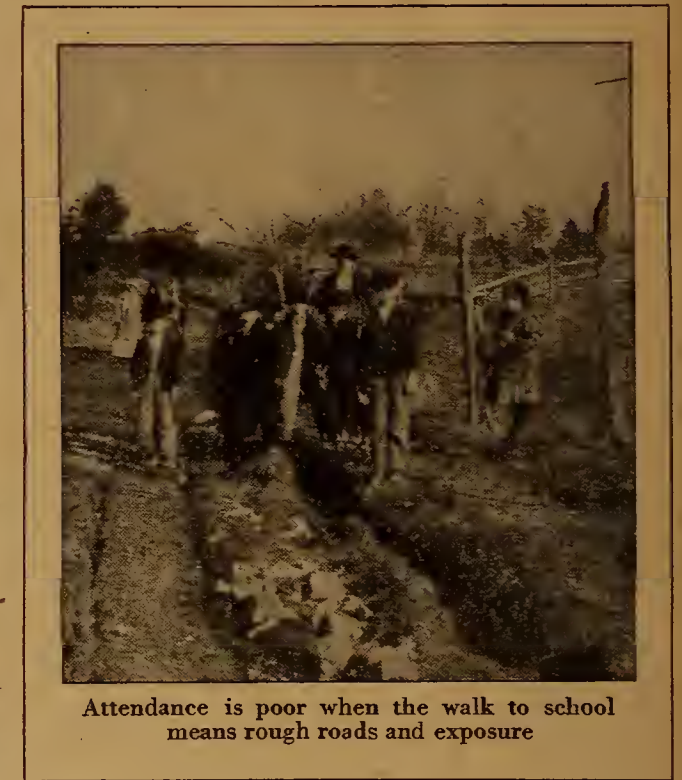
Gophers Play Havoc

By M. GLEN KIRKPATRICK

NO DOUBT the bounty on pocket gophers has been a great step toward their extermination in a number of States in the last few years. They are still so abundant in spite of this measure that in certain parts of the Central and Western States their presence is a source of great loss to the farmer and orchardist. These rodents work underground, do-

ing damage in meadows, cultivated fields, pastures, orchards, and gardens. They cause great trouble in hay fields because their mounds prevent close mowing. They cover up grass in the pasture. Great gullies down the hillside are a result of their burrowing. They destroy the crops in potato and sweet potato fields by eating the tubers from the growing vines. The losses to the truck grower from their depredations sometimes reach an enormous figure.

The loss which the orchardist suffers is as great as any other loss. The pocket gopher does injury to all kinds of fruit trees. It is impossible to locate an orchard in soil which will not be infested by gophers if there are any of the pests in the vicinity, since the soil adapted to orchards is ideal for their burrows; and they will be attracted to the orchard not only because of the tree roots, but because of the roots of clover, alfalfa, or other plants used in connection with the trees as cover crops or as inter crops. The roots of fruit trees are relished by the gophers, and when they are in the way of the rodents' burrows the gophers generally take enough time from their burrowing to eat a number of roots from the tree, often leaving the tree standing in the ground with no root support at all. This damage is not usually discovered until the tree begins to die from the effects of the injury. Large trees are often girdled entirely just below the surface of the ground. Nurserymen who are so unfortunate as to have gophers on their plantations report many depredations upon young trees in the nursery row. Besides the direct loss



Attendance is poor when the walk to school means rough roads and exposure

resulting from injury to the trees, there is every opportunity for the entrance of fungous and bacterial disease through the wounds made by the rodents.

In view of the destructive habits of gophers, their extermination at once commands the attention of the orchardist and the farmer. Two methods, trapping and poisoning, are the feasible plans for their extermination. Where the infested area is not large, neither method seems to have an advantage, since trapping is as effective as poisoning, and on the small area is not much more expensive than poisoning.

On larger areas poisoning is the quickest and least expensive method of extermination. Strychnine sulphate is used, with good success, with potato, carrot, beet, sweet potato, or grain as bait. When potato or similar bait is used, a crystal of the poison is inserted in the vegetable in a slit made with a knife. If grain is used, a syrup containing the poison is spread over the grain. This syrup is made by dissolving an ounce of strychnine sulphate in a quart of warm water and adding the solution to a quart of sugar syrup. This amount of mixture is sufficient to poison 30 pounds of grain.

The poisoned grain or root is placed in the tunnels through holes made with a sharp stick or prod. An old spade handle which has been sharpened answers well for this purpose. The holes left by the stick may or may not be closed.

Another aid in destroying gophers is to protect their natural enemies. A large number of animals and birds feed upon the gopher. The barn owls are the most useful among the birds of prey, as many as ten gophers having been found in a single nest at one time during the nesting season. Weasels and skunks destroy a large number of the pests.

What is true of the rat and the English sparrow is true of the gopher: it cannot be exterminated by one man alone. Although a farmer may by his own efforts rid his farm of the rodents, he will need to continue a warfare against those from his neighbors' farms.

By united efforts of all farmers the gophers can be exterminated over large areas, and when this is done it will be a long time before they reappear.

EW



It is almost universal testimony that children who are given a high-school training in a fine rural school do not want to leave the farm for the city

Milking by Machine

A Dairyman Doubles His Herd and Lessens the Drudgery

By T. H. EELLS

TWO years ago I bought a milking machine outfit, together with a four horsepower gasoline engine, at a cost of \$650 installed complete. It was a three-unit outfit, since I wanted to have it big enough to allow for an increase in the size of my dairy. The machine was the first of its kind to be put in operation in my locality here in Illinois, and to say that I was the laughing stock of the neighborhood is putting it mildly. But to-day several of my neighbors are using milking machines with the same degree of success that I have had with mine. Just a few years more and every progressive farmer around here will be putting milking machines in the same class with the grain binder. One is just as useful as the other for the particular kind of work it is made to do.

Before making a selection I was two years in investigating the proposition. I took trips to several dairies where milking machines were in use, and saw different makes working under different conditions. I also wrote to a number of experiment stations where they were using the machines, and asked for a report on them and also for their opinions. In each case they replied promptly and in favorable terms of the machines when properly managed. So I finally decided to make the investment.

In the two years I have used machines, my herd has varied in size from 26 to 30 head. Thus far I have had no bad effects of any kind from the machines, which is unusual for me, since in milking by hand I always had one or more bad quarters in a year. But in the time I have used milking machines I have never lost a quarter on any cow. Of course, this may be due to good fortune, but my neighbors' experiences so far have been the same.

The cows, especially the heifers, take to the machines readily—almost like a duck to water. After the first time or two of milking they scarcely move. Quite frequently I have had cows lie down while being milked with the machine, which is one of the things that convinces me it is a natural way to milk. Several of my cows used to be bad kickers when milked, but since I have had machines for doing the work they stand perfectly quiet.

The amount of milk given by cows milked with machines as compared with hand milking is difficult to determine because no two herds are exactly alike, and the age of cows and time of lactation affect the results when the test is made on only one herd. But I should say that my cows give fully as much if not more milk than they did when milked by hand. When I was considering the purchase of the machines I was told how much labor they would save me. But the thing that has appealed to me most is that the machines have enabled me to double the size of my herd with the same labor. My boy and I do all the work, and with the same amount of time that we used to give to about 15 cows. We now milk and take care of 28 cows. It relieves the drudgery from a job that was not at all pleasant, and makes dairying a question of how many cows you can house, feed, and care for instead of how many you can milk.

Teat Cups Fit All Cows

IHAVE seen a good many different makes of machines, and any of them will milk a cow, though some are considerably faster than others. I am using a single-unit system. By this I mean that each machine milks only one cow at a time. In the double-unit system a machine is placed between two cows and both are milked at the same time. Each method has its advantages, but I am satisfied with the single-unit machine for these reasons: I have less load to move since I have only one cow's milk to handle at a time, and when flies are bad the pail of a single-unit system can be placed close to the side of the cow, and in stamping the flies she does not get over the hose and pull the teat cups off. Also, with a single-unit milker I can apply the amount of pressure to each individual cow that she may require for best results. Some require more than others. By feeling the end of the teat I can easily tell if pressure enough has been used. If not, the end of the teat will be hard and look as if inflamed, but with the proper pressure it will be soft and pliable. There is a gauge for telling the amount. A lever on the

pulsator also enables me to apply the pressure as I desire.

The teat cups used on my machine fit the smallest as well as the largest teats without changing. My cows are all grade Holsteins of all sizes and ages, and naturally they have teats of all sizes and shapes. The power for running the machines is the gasoline engine already mentioned. Its cost of operation depends almost entirely on the price of gasoline, of which it uses from three to four gallons a week, also a pint of lubricating oil. This is for milking 28 cows twice a day.

The milking-machine salesman strongly advised me to buy a 2½ or 3 horsepower engine, but I wanted to be sure of plenty of power so purchased a "four horse," but find I do not need so large a one. The only difference is that I use more gasoline than would

thing should be wrong I would find it immediately.

I have no way of telling how long my milking machines will last. The only thing that is easily perishable is the rubber tubing, but aside from that I see no reason why the machines will not last a lifetime. My repairs have averaged about a dollar a year for each unit.

The first cost of a machine is the biggest thing a man has to reconcile himself to. It looked large to me, but when you consider the time and labor saved and the increase in the income the cost doesn't look quite so big. Besides it turns a job that is little sort of drudgery into one that is as pleasant as any other farm work performed with modern equipment.

Hydraulic Ram

By C. H. THOMAS

THE question of an adequate and economical water supply for the farm is an important factor in the dairy business, also for general home consumption. Outside of a natural flow the hydraulic ram is the most economical. It does not need steam or electricity to help it run, but uses the force of gravity. In installing a ram there are certain natural laws which have to be followed, or the plant will not prove a success.

Here are the three principal factors: The proper amount of water, the proper fall of the feed pipe, and the proper length and size of the feed pipe. One ram I have in mind, which was installed about a year ago under adverse circumstances, is working successfully to-day. There was an elevation of some 110 feet to be overcome, in a distance of about 800 feet. The owner first tried a certain make of ram without success. Then, not to be outdone, he put in another make, with a feed pipe 150 feet long and three inches in diameter. With this he got about a seven-foot fall from the top of the head box to the ram, which proved to give sufficient power to the ram to overcome the resistance or weight of the 45-pound back pressure existing in the rise pipe.

In our case there is a nice spring of fresh sparkling water that we wanted to use. We put in a ram so that we could make use of this supply. The

water from this spring is brought about 300 feet through a one-inch pipe, by gravity, and enters the ram. There it receives the force of the water from the feed pipe, and is forced first into the air chamber, then into the rise pipe, and finally up to the cistern. To the novice or one not acquainted with this form of water power, a ram may seem a mystery. But it is simple enough.

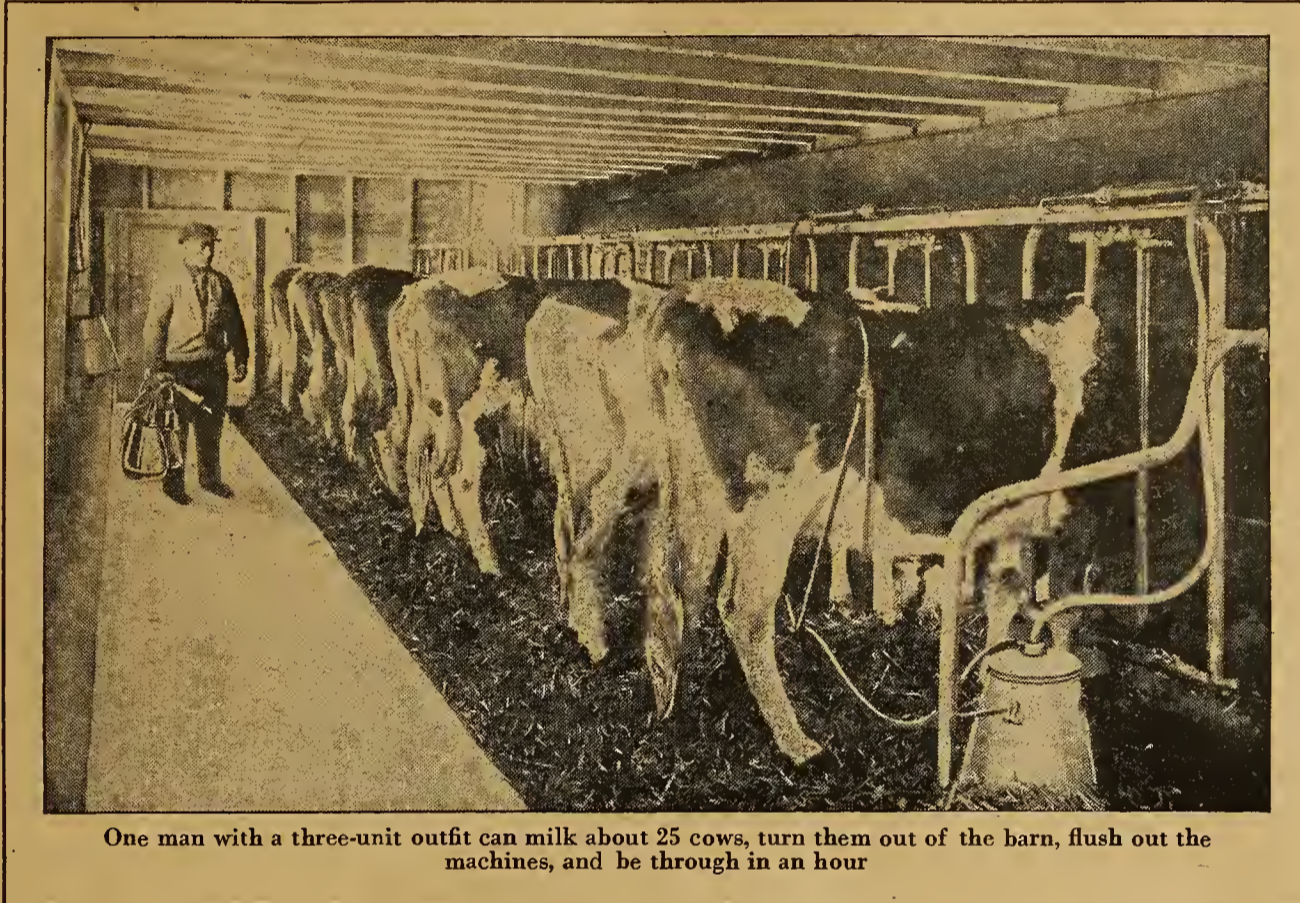
When a column of water in a pipe is suddenly stopped by the closing of the outlet valve in the ram, the momentum of the water opens a valve into the air chamber. A certain amount of water rushes through, and at the same instant the water rebounds in the feed pipe, letting the air chamber close, and hold what had gone through. The pressure of water taken off, the outlet valve suddenly opens and the water starts down the feed pipe again. The operation is repeated again and again, and the ram is kept pumping the water as though by perpetual motion, up the long grade to the cistern, day in and day out, with but little attention paid to it.

Occasionally a new gasket or something of that sort is needed, but that is all. The hydraulic ram is a time and money saver, and of great value to any farm where the conditions are right.

The office of the air chamber in the ram is to contain a certain amount of air. This forms a cushion when compressed by the weight of the water in the rise pipe, and exerts a spring-like action on the water, forcing it out at the cistern in a steady stream. A ram derives its name from the fact that it rams or forces part of the water that operates it to a higher level than the source of supply. Since it wastes a considerable portion of the water in securing power to elevate the remainder, there must be good drainage at the place where the ram is located.

The flow required to operate a ram is from one-half gallon per minute upward, and the ram must be at least two feet below and ten feet away from the source of supply so as to give the water an opportunity to gain momentum. There are various standard rules for determining the best position of the ram with relation to the supply and point of delivery. The speed may also be varied to pump a larger proportion of the water when the supply is limited or to pump it faster when there is an abundance.

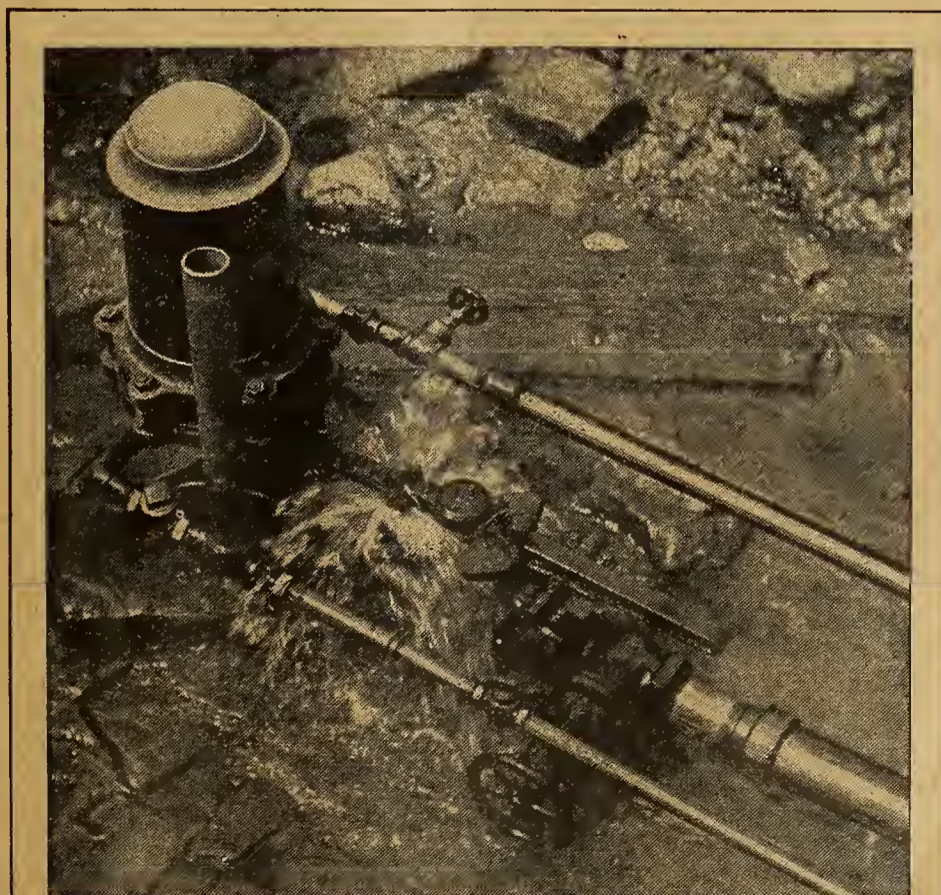
EDITOR'S NOTE: Questions relating to milking machines or hydraulic rams will be gladly answered by personal letter. Address the Machinery Editor, FARM AND FIRESIDE, Springfield, Ohio.



One man with a three-unit outfit can milk about 25 cows, turn them out of the barn, flush out the machines, and be through in an hour

be required to do the same work with a 2½ or 3 horsepower engine. One of my neighbors is using a 2½ horsepower size, and seems to have plenty of power for operating his machine.

The manufacturer said that each unit would milk from 10 to 12 cows an hour when the cows are giving a full flow of milk, and more when they are giving less; and I find this to be the case. With the three units I have, entirely alone, on several occasions, milked our 28 head, stripped them, turned them out of the barn, flushed out the machines, taken care of the milk, and was all done in an hour. It really doesn't pay to strip after the machine because the milk one gets certainly does not pay for the time spent in getting it. But I generally strip my cows by hand so as to come in contact with each one, and in case any-



This hydraulic ram is installed in a pit where it is safe from freezing. The outlet valve has just opened

\$1150 F. o. b. Racine

Mitchell Junior a 40-h. p. Six 120-inch Wheelbase

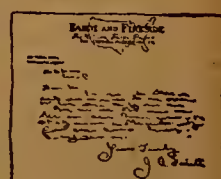
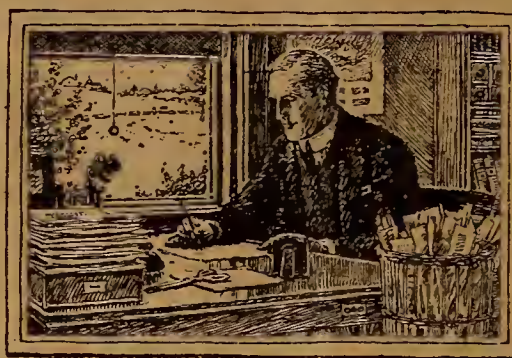
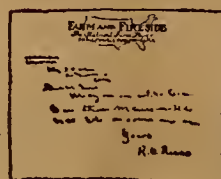


\$1460 F. o. b. Racine

7-Passenger 48 Horsepower 127-inch Wheelbase

The Editor's Letter

Tinkering with Anatomy of Dumb Brutes



HUMAN emotions do not willingly follow pre-arranged channels. Thus at times of extreme happiness tears sometimes flow, and just indignation may even be a source of amusement, so fickle is the allegiance of outer man to the inner spirit. In the little account of a familiar custom that follows, you will therefore remember the conclusion the better perhaps by reason of the vivid description:

"Did you ever," says "Greater Iowa," "watch a cow go to an unwarmed tank on a January morning in zero weather when old Boreas was fanning the face of the earth with a 40-mile wind that would freeze the face off a brass monkey? Have you watched her hump her back, push the cakes of ice away with her nose, shake her head in disgust, switch her tail angrily, and trot shivering away in search of a place out of the cutting wind?"

"Yes, she would do that many times and go without water rather than get the toothache and chill her internal anatomy by an inward deluge of freezing water. The stockman who compels his animals to drink ice water is deliberately throwing away a large share of the feed the animals consume, for it is practically impossible to put feed enough into the 'critters' to conserve the bodily heat so necessary to comfort and growth if they are forced to drink ice water in icy weather. 'A merciful man is merciful to his beasts' because it pays, if for no other reason."

By the time next winter rolls around, the foregoing appeal will have little effect unless during the coming summer we plan some sort of sheltered water tank with a heater to warm the contents.

An equally strong case might be presented in favor of giving stock protection from the broiling sun and the insect pests in summer, for animal comforts are closely linked with their production. When discomforts are so great as to become cruel, profits necessarily stop altogether and, even aside from the inhumanity of it, there is seldom any justified defense, agricultural or medical, for brute suffering. Certainly not for the kind described by Mrs. L. E. Armour, who writes me a brief description of animal doctoring as practiced in the locality where she lives.

"I surely find many things to be thankful for as I go through life," says Mrs. Armour. "Just now I feel very thankful that I am a human being instead of a dumb brute or a fowl belonging to some people who, while seemingly intelligent, practice the utmost cruelty in treating diseases among their live stock."

NUMEROUS cows in our neighborhood, have had holes bored in their horns and turpentine poured in. They have had their tails split and salt and pepper inserted, when all the poor beasts needed was to have the vacancy in their stomachs filled with nourishing food. A neighbor who lately lost a mule from blind staggers used among other crude remedies turpentine poured directly into the ears. Hog diseases frequently appear in our community, and every sick hog is supposed to have the cholera. Some people pour coal oil into their hogs' ears as a remedy for cholera, but I cannot see where the good comes from irritating the delicate membranes inside the head when the trouble lies in another part of the body.

"Now, I am not a graduate in hogology, but we have been very successful with hogs, and from close observation I believe that worms kill more hogs than most people imagine. Until we came South I never saw hogs affected with kidney worms, but they are plentiful here, and if unmolested will cause weakness of the loins and finally death.

We give our hogs copperas once a week, and we have sold hogs to our local butcher at two cents a pound above the price because our were not affected by kidney worms.

"Then when chickens begin to die suddenly cholera is again credited, and among the remedies employed by some people to stamp out the disease is to burn a sick chicken alive. I once lost

my entire flock of chickens, turkeys, geese, and guinea fowls from what I then pronounced cholera, but which I afterwards learned was due to eating decomposed carcasses of goslings that died from eating poisonous weeds.

"Since then I burn or bury all fowls that die or are accidentally killed, and rarely have a sick fowl. It is right to give proper dues where they belong, but it is altogether wrong to give cholera the credit for many deaths that are due to starvation, cruelty, poisoning, or other causes."

Considerable mental effort is needed to realize that here in a supposedly enlightened land, filled with schools, churches, and charitable organizations, to-day, in 1917, such barbarism persists. None of the crude treatments described have the slightest medical defense, and yet we can hardly expect material relief for the conditions mentioned to come from medical sources. The skillful practice of medicine calls for long training and a ready knowledge of drugs, serums, and instruments. This the average man can never have.

I look for the relief of animal suffering to come chiefly from mechanical sources. Nor do I refer only to the emancipation of hard-driven livery horses through the motor car, nor of sore-shouldered work teams through the introduction of trucks and tractors. Unless the signs of the times are grossly misleading, all farm animals are likely to fare better as our farms become more fully equipped, and this is why I think so:

OWNSHIP of machinery evolves a systematically trained brain. The work a machine does comes from a source and flows through channels that can be seen. And even to the average mind an intricate machine soon becomes a grouping of many simple parts. The brain is naturally logical and needs only practice to become more so. Look back a few years to your first experience with the knotted on a self-binder. I will confess that my awe of it did not entirely disappear for some time—it seemed so much like a human hand. But greater familiarity finally revised the first impression, and it became just a device that had to be looked after and oiled just like any other part.

An automobile, or even a small gas engine, very quickly trains the mind to logical thinking. Suppose it refuses to start. "The ignition, the fuel, the temperature, compression—which of these is at fault?" is the usual line of reasoning. Any random method, such as pouring turpentine in the crank case or coal oil in the exhaust pipe, would be unthinkable.

Guesswork repairs and amateur tinkering long ago resulted in the counsel now universally respected, "If you don't understand what is the matter and how to fix it, let it alone and call someone who does understand it." In time that teaching is sure to make itself felt in the handling and care of farm animals.

While a mule that turns his head around to see whether or not you have a whip and governs his actions accordingly is considerably more than a machine, his anatomy is nevertheless mechanical in principle. So is that of a cow and a hog. Well-chosen feeds and suitable care produce certain amounts of energy, milk, or pork, as the case may be. Doctoring is in its last analysis simply an attempt at repair, hence the value of intelligent doctoring and logical minds will permit no other kinds. Crude doctoring is the same as random tinkering—never of benefit, usually harmful.

Mrs. Armour's letter is a woman's appeal against barbarism as such. Some people can be reached by appeals of that kind. Good does not always follow at once, but when made to intelligent people the echo of a sincere voice trying to do good carries a long way. Our dependence on domestic animals and their dependence on us make this a matter of universal interest, and one in which everyone, including children, can help.

The Editor

The Only Car

Built by John W. Bate—31 Extras in It

John W. Bate, the famous efficiency expert, built and equipped this whole great Mitchell plant.

It is all designed to build this one type of car at the lowest factory cost. On this year's output his methods save us at least \$4,000,000.

All of this saving goes into extras. They make the Mitchell, in many ways, the finest car in its class. They give it many rare attractions which you ought to see.

His 19th Model

The latest Mitchell is the 19th model designed under Mr. Bate. It shows the result of 700 improvements which he has worked out in this car.

It represents the utmost in strength, beauty and equipment. It is his idea of what a lifetime car should be. Go see the result of his efforts.

All Extras Free

All these extras cost you nothing. They are paid for by factory economies—by saving waste. They include

31 extra features—

24 per cent added luxury—

100 per cent over-strength.

The 31 extras—like a power tire pump—are costly features which most cars omit. You will want them all.

The added luxury—24 per cent—is a 1917 extra. It is paid for by savings in our new body-plant.

The vast over-strength is also a new extra. In the past three years, part by part, we have doubled our margins of safety. Every important part is given twice the strength it needs.

Over 440 parts are made of toughened steel. All safety parts are oversize. Driving and steering parts are built of Chrome-Vanadium. Gears are tested for 50,000 pounds per tooth. Not one Bate cantilever spring has broken in two years.

The object is a lifetime car, safe and economical. Cars of lesser strength cannot last like Mitchells.

A New \$1150 Size

Beside the Mitchell, we now make the Mitchell Junior—a somewhat smaller size. Yet it has a 40-horsepower motor and a 120-inch wheelbase.

See the two sizes and the various styles of bodies. See the extras which come with them. If you don't know the nearest Mitchell dealer, ask us for his name.

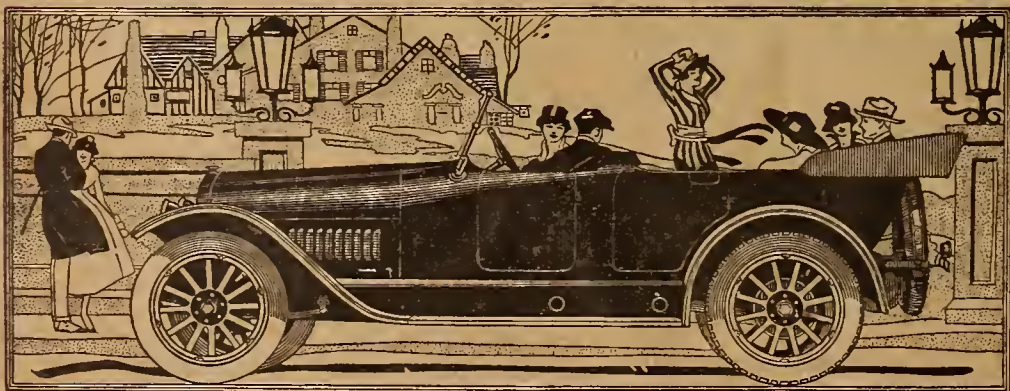
MITCHELL MOTORS COMPANY, Inc. Racine, Wis., U. S. A.

TWO SIZES

Mitchell —a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor. Price \$1460, f. o. b. Racine

Mitchell Junior —a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor—1/4-inch smaller bore. Price \$1150, f. o. b. Racine

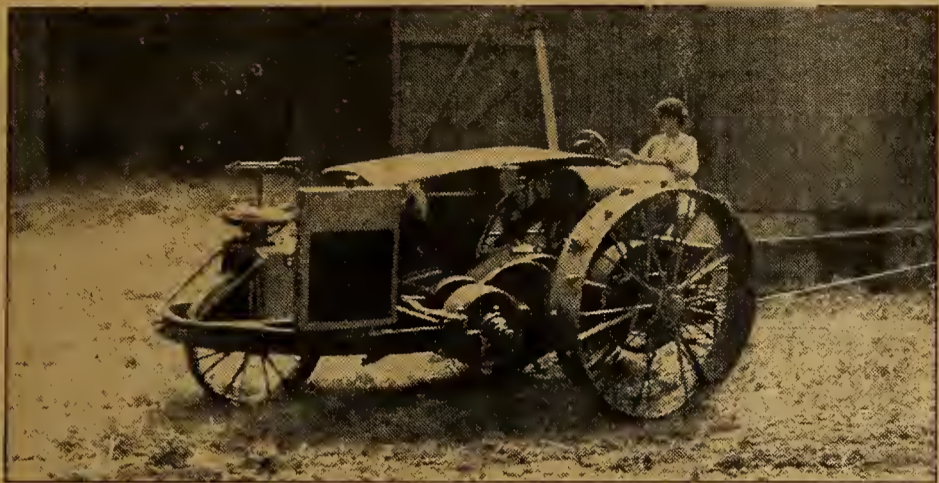
Also six styles of enclosed and convertible bodies. Also new Club Roadster.



My Farm Tractor

A Year's Experience with Mechanical Power

By CLIFFORD A. MASON



Mrs. Mason is here driving the tractor for hoisting hay into the barn. Most loads go off in three forkfuls

As a regular reader of FARM AND FIRESIDE I have been particularly interested in the articles about tractors, and other readers may like to hear some of my experiences with a 10-20 tractor purchased last spring. I can use the tractor for most any job I would expect to do with horses, and in most cases it is quicker and cheaper than with horses.

For instance, I had a piece of ground containing about 30 acres of the hardest kind of clay; my farm is in New York State. It was on a heavy grade, and in order to save the horses we used to plow it crosswise of the grade, consequently getting poor drainage, and I was not able to plow more than five inches deep with three heavy horses on a 14-inch plow. Even then I had to let the horses rest part of the time.

Last fall I plowed that same 30-acre lot with the tractor, plowing it up and down the grade at a depth of eight inches. I did it easily at a running expense for gasoline and oil of 60 cents an acre on that hard plowing. I also plowed a piece of loam containing a heavy timothy sod at the rate of seven acres in nine hours, at an expense of 50 cents an acre for gasoline and oil. On another occasion I did a good job of harrowing on spring-plowed clay with the tractor, pulling a 14-disk harrow and two spring-tooth harrows weighted with stones.

Steady Power for Belt Work

At haying time we used the tractor for hoisting the hay into the barn. The first picture shows my wife running the machine unloading hay. She can handle it as well as a man, which shows that it is easily handled compared with horses. We unload a big load of hay in three forkfuls.

At harvest time we had not finished haying on account of wet weather, so we made good use of the tractor on the grain binder, leaving the horses to do the lighter work of haying. We cut 20 acres of grain a day with one binder, and could have handled two easily if we had had them.

Although the weather was very hot when we were cutting oats, the tractor did not have to stand to rest and cool off as horses would have been obliged to do if they had been used. The expense

for running the binder was about 25 cents an acre for "gas" and oil, and could be lessened by pulling two binders at once.

Our tractor is of the three-wheel type, and is capable of making very short turns. We could make practically a square corner with the binder without stopping. On the corn harvester also we used the tractor with very satisfactory results. I have used the machine some for belt work, and find that the four-cylinder motor gives a steady continuous power, and is economical for such work.

On the whole, a tractor used in addition to horses is a practical machine. It cuts down the expense of keeping extra horses and drivers for them, and a valuable quality about a tractor is that it does not eat while not in use.

Car Safest in Garage

By H. C. McCormick

NOTE that an Ohio reader asks if it is safe to keep his car in his barn. I have kept my car in the barn on a dirt floor for the past season, and have had a bale of hay on each side. I have often run the machine in on top of two or three inches of chaff, which, I admit, was a very foolish thing to do. I frequently work around the car at night with a lantern, and also work around our stationary gasoline engine at night with a lantern. Indeed, I often grind feed at night during a particularly busy time.

We consulted our fire-insurance agent about keeping the car in the barn. He said that automobiles have become as common as any other farm machinery and they go under the same classification as farm machinery. A number of our neighbors keep cars in their barns, and I have never known of any accident or fire from that source. Some of the old-style carburetors were really dangerous, but with modern cars there is very little danger as far as I have observed. Still, I think you were right in advising the Ohio reader to build a garage as soon as possible, because in addition to danger of having it in a barn the machine can be kept in much better condition if entirely away from the dust.

The New Hupmobile

The Beauty-Car a Year Ahead

Bright finish, long grain, French seam upholstery

Improved cushions and lace type back springs in seats

Leather-covered molding finish along edge of upholstery

Neverleek top, black outside, tan inside—waterproof

Tonneau gipsy quarter curtains, integral with top

Hupmobile-Bishop door-curtain carriers, folding with curtains—exclusive feature

Large door pockets, weighted flaps

New body color—Hupmobile blue

New variable dimming device graduates brilliance of head lights

Tail lamp independent of other lamps

New soft operating clutch

Planned for a year, this Year-Ahead Beauty-Car.

Issued from new factories whose added facilities cost over \$750,000 in 1916.

A year ahead in beauty. In all that makes for value, too.

The world's best Four in the setting its brilliant performance merits.

25 Improvements That Captivate

Twenty-five worth-while improvements to make Hupmobile captivation complete.

In the net, the Year-Ahead Beauty-Car.

No car supplies all individual wants.

None ever can meet them all. But the New Hupmobile comes closest to doing so.

Many of its features are ahead of the times.

The World's Best Four Now the Beauty-Car

The Hupmobile has always been a quality car.

It stands, also, at the pinnacle of performance.

It is, in very fact, the world's best Four. That needs no further proof than the testimony of 17,000 owners. Many tell us we build the car too good. That we pay too much for things people never see.

If We Build Too Good: Why—We Build Too Good

We could not be content to give Hupmobile owners less.

Quality and performance—these long have been our ideal.

Surely we have reached our goal in a car fit to stand as the world's best Four.

So we studied people's style-wants.

See how we have met them. How we have gone a year ahead.

Note the new upholstery. The gloss, the softness of the leather. The depth of the cushions. The stylish French seam.

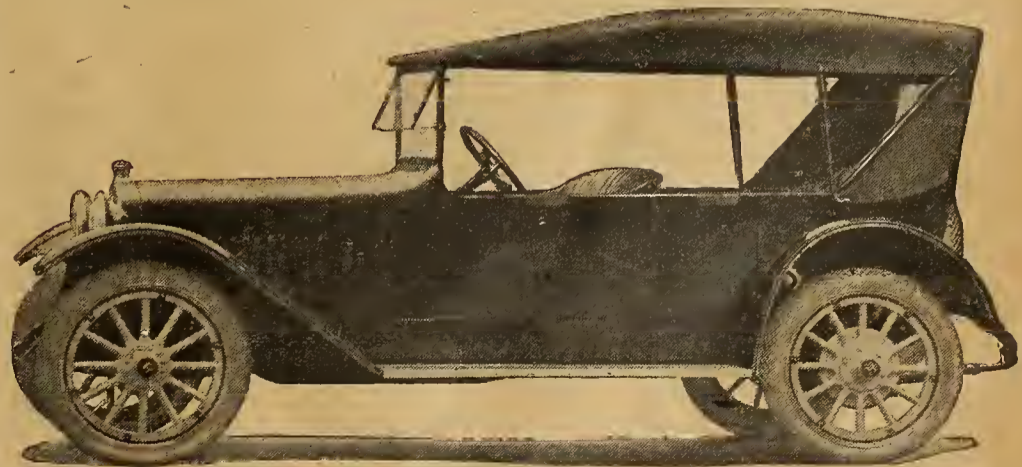
Be Guided By Your Own Style-Sense

You see the rear quarter curtains on few other cars—unless costlier. A top fashioned in our own factories, on Hupmobile design.

Drop the side curtains into place. See the ease of placing the supports in the doors. They convince instantly that here, at last, is an open car which quickly avails the perfect bad-weather comfort of a closed car. Let your own style-sense guide you as you go over the car and compare it with others.

Five-Pass. Touring Car, \$1285 Roadster, . . . \$1285
Seven-Pass. Touring Car, \$1440 Sedan, . . . \$1735
f. o. b. Detroit

Hupp Motor Car Corporation
1334 Milwaukee Avenue
Detroit, Mich.



The Mark of Superior

Motor Car Service



The tractor has ten horsepower at the drawbar and pulls three plows. This outfit has turned seven acres of sod in nine hours

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*

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April 21, 1917

Milking-Machine Progress

WITH commendable diligence the Office of Farm Management of the U. S. Department of Agriculture has taken up the matter of milking machines as most dairymen would like to see it done. Not content with the reports of the various experiment stations on the subject, W. J. Spillman, in charge of the work, sent some of his men out into the dairy districts to talk with men who were using milking machines on their farms.

A good many valuable things were learned which are included in Professional Paper 423 of the Department. Two main questions, however, were asked all the dairymen using milking machines. The first was: "Has the use of a mechanical milker influenced the production of your herd?" There were 156 answers as follows: No difference observed, 124; less production, 16; more production, 16.

The second question was: "Do you find that the machine has magnified or lessened sore teats, spider in the teats, garget, milk fever, and other udder troubles?" To this question there were 129 answers: No difference observed, 110; less trouble from udder diseases, 11; more trouble, 8.

Practical investigations of this kind, made from time to time as new methods of farm management develop, are of great help in keeping the country abreast of the times. Individual dairymen will always have to draw their own conclusions concerning their specific problems, but it gives them something definite on which to base their judgment.

Prosperity's Foundation

THE basic foundation of general prosperity is productive land; and, unless the people of this country can stand together for the maintenance of sufficient agricultural prosperity to provide soil restoration and enrichment, there can be no assurance of continued general prosperity.

If the farm receipts are insufficient to provide for soil maintenance in addition to other necessary expenses and a living for the farm family, then soil depletion is inevitable.

High-priced wheat is interpreted by many city people to mean that all farmers are getting rich at their expense, but the fact is that thousands of acres of wheat were seeded in the fall of 1915 which yielded no wheat for this good market, and on those acres the farmer lost much labor in addition to the seed sown; and last fall he himself was obliged to pay from \$2 to \$2.50 for seed wheat.

Drought or floods may occur at time of seeding, growing, or maturing of the wheat crop. Winter-killing, insect injuries, fungous diseases, and hail are

among the enemies of destruction; and even the average yield of 14 bushels of wheat to the acre, with which the United States is credited, is the average of the acres harvested—not the average of acres seeded and in part abandoned before the harvest.

The reports of big crop yields are always of interest, and always welcome and encouraging, but to ignore the small return on vast areas is perilous to national prosperity.

College Honors for Farmers

IN WISCONSIN and several other states the state universities and state colleges are honoring farmers for lives of usefulness devoted to the improvement of agriculture.

This tardy recognition is in the form of a certificate bearing the state seal and signed by the dean of agriculture and president of the state school. It is known as a "certificate of recognition" and recognizes the "eminent service" of the farmer to whom it is granted.

Those lately honored in Wisconsin are Henry Krumrey, who organized and unselfishly managed a successful co-operative cheese-marketing enterprise; J. Q. Emery, a breeder of dairy cattle who formerly served the state as dairy and food commissioner; and Joseph Gordon, a pioneer farmer who has been active in bettering the social life of his community.

In thus honoring its useful citizens the state schools have shown a spirit of democracy which will inspire many a hard-thinking farmer to revise his ideas about higher education.

The Brush Pile

THE brush pile on the farm is too often a symbol of poor management, and sometimes of sloth. Who has not at some time passed through a wooded pasture and there seen brush pile after brush pile crowding out the grass, making centers from which weeds spread and affording harbors for insects and vermin?

Quite frequently these brush heaps are left for years, the bushes, briars, and weeds spreading a little farther out from them each season. On high-priced land this represents considerable loss, for on the whole there are perhaps several acres that are thus made nonproductive. This one loss alone is sufficient to demand a thorough clean-up when the winter clearing and chopping is completed.

In burning the brush pile we have another example of the farmer getting direct pay for farm clean-up work. Ashes are valuable. The value of wood ashes as a conditioner and tonic for hogs has long been recognized, and with pork at present prices there is every reason why the hogs should be kept thrifty and free from disease.

Ashes may also be made an important item in soil improvement and increased crop yields. Unleached wood ashes contain about six per cent potash, two per cent phosphoric acid, and thirty per cent lime. So the brush pile, when properly disposed of, may become an asset instead of a liability.

Bright Future for Sheep

THE large dollar the sheep and its products now represent is having its natural influence and promises to make the future pathway of our woolly friends safer and pleasanter than in the past. Suddenly it has dawned on many farm owners that good, bad, and indifferent dogs straying at will by night and by day are discouraging the keeping of sheep, poultry, and other farm flocks.

Former champions of dog liberty have become convinced that one of the greatest hindrances in the propagation of game birds is the roaming of unattended dogs. With this array of united sentiment favoring effective control of dogs, Towser and Rover have cause to look grave.

Getting Rid of Flies

SOON will come again the season for exploiting the prize folly—that of clubs and other organizations announcing prizes to go to boys and girls who bring in the greatest number of flies. In these contests children, often mere tots, are encouraged to handle these spreaders of fever and carriers of filth.

How soon, think you, would it be possible to rid any given district of malaria or yellow fever by distributing prizes to the boys and girls who might bring in the most pints, quarts, or even bushels of mosquitoes? How soon would a similar program have brought about such results as came of the work in the Canal Zone? We might, though, just as reasonably expect to banish typhoid or yellow fever without giving attention to drainage, cleanliness, screens, and the use of oil, or to fight typhoid by killing quantities of flies while leaving undisturbed the manure heap, the insanitary outhouse, and the pile of decaying garbage.

It is perfectly proper for us to swat the fly and to kill and trap as best we may this filthy foe. Right now, though, it is doubly important that the source of the trouble be reached, that everywhere thorough campaigns be conducted to kill the fly before he flies. Better, instead of prizes for dead flies, would be premiums for sanitary surroundings.

Wise is the club that sounds the call for a campaign of cleanliness. If there are prizes, they well may be for the safe home, the sanitary city—yes, and for the clean country, since the country is the commissary department of the city. The city of any considerable size has certain sanitary regulations that must be observed. Furthermore, the municipal water supply is safeguarded. Not so in the country, where each farm is largely a kingdom unto itself, and where reasonable sanitary rules are not always observed. Because this is true, typhoid has very largely become a disease of the farm and of the small town.

Why not, then, on every farm a clean-up campaign? Well might there be a special clean-up day with prizes for proficiency. Can we imagine a greater health help?

Fighting filth is fighting flies. It is, in truth, getting the fly before it flies. With a campaign conducted along these lines there will be less disease, and fewer flies to swat.

Our Letter Box

Corn-Belters in Florida

DEAR EDITOR: Making a change from Northern or corn-belt farming to undertake the same business in the Sunny South requires considerable courage and an open mind. We undertook such a change something less than a dozen years ago, and made several experimental trials of climate and farming conditions in different parts of the South, but did not become satisfied to the point of "sticking" until we located in Escambia County, Florida. We have now summered and wintered here for eight years.

We are about five miles north of Pensacola Bay, in what was formerly a turpentine manufacturing country. The soil, while not like the strong, fertile corn-belt land, can be made to produce good crops with the proper handling, and we find a good and profitable market for all our dairy products, poultry, eggs, and truck and grain crops. For example, last winter we sold milk for 40 cents a gallon, sweet cream at 90 cents a gallon, buttermilk at 20 cents a gallon, eggs 35 to 50 cents a dozen, fresh pork 12½ to 20 cents a pound, veal 15 to 20 cents a pound, sweet potatoes (200 to 500 bushels an acre) sold for 40 cents to \$1.60 a bushel. A neighbor of ours has planted 35 acres to Irish potatoes.

Grain feeds retail at present as follows: Oats, 90 cents a bushel; corn, \$1.60 a bushel; shorts, \$2 a hundred-weight. We sold all the hay we did not need for \$20 a ton.

There is of course a greater variation in the value and production of the land here than is the case in the corn belt, but farms of 40 to 60 acres and

larger ones fairly well improved command \$60 to \$75 an acre and up. Some unimproved land can be bought for \$12.50 an acre, but this land must be stumped before it can be farmed.

I want to mention some indications of the improvement of our community. We have an agricultural school, a county agent, a domestic science agent, and a canning club whose representatives visit and advise in all parts of our county. We also have an active farmers' association, and we are winning in our organized campaign against the cattle tick. In less than two years the quarantine will be raised and this section of the State will be tick-free. Since the campaign against the cattle tick has been on, the native stock is steadily being replaced by high-grade and pure-bred stock.

Of course here, as in most parts of the South, there is need of much additional capital and hustling, ambitious farmers, and I am glad to be able to say there is a lively interest being taken in the possibilities of Southern opportunities for Northern farmers.

So many who visit the South for pleasure think our winters are fine, but they go back North before they find out that our summers are even more delightful than our winters. When the temperature in summer gets to 90 degrees in the shade, we think it terribly hot. We can work at some kind of farming every day in the year.

C. C. WEHMEIER, Florida.

Cultivating the Garden

DEAR EDITOR: A horse is coming to displace man work in every part of farming to-day. For a long time we have thought it necessary to use the hand work in the farm gardens because it has always been thus, I suppose. But nowadays a good many persons get around considerable of the garden work by planting some of the crops that formerly belonged in the garden out in the fields with the regular cultivated crops. Of course there are certain ones that cannot be so roughly handled, as they would necessarily be when worked with the two-horse cultivator, yet there are a lot of them that will stand it and save a good amount of hand work.

Cabbage, table beets, sweet corn, early potatoes, and others of such a growing nature can be planted in the rows of the regular crop for a few rods and worked in good shape while the other crops of corn or potatoes are cultivated. A very little hand work after this regular cultivation will keep them in as good a condition as necessary and save the farmer or his help considerable work during the summer when odd minutes are scarce. R. E. ROGERS, Ohio.

Education Ends Superstition

DEAR EDITOR: In January 20th issue of FARM AND FIRESIDE, I noticed your letter on "Superstitions a Barrier to Success." I must agree with you, since I have been fighting these things for the last few years. I think your paper could not render a greater service than educating people against traditions and superstitions.

In this community many people believe that to make their crops fruitful they have to plant on some certain time of the moon. This is mostly with the older people, for the young people are better educated. I find where education begins superstition ends.

Scientific ideas are the key to success along the agricultural lines.

S. L. REUFIA, Kentucky.

The Small-Farm Tractor

DEAR EDITOR: I did not answer your letter about the automobile truck and tractor, for I am renting only a small farm and at that time the ground was in fine condition. I thought old Selim and Flora were all I needed. However, later conditions became changed; old Flora died. I got a span of mules, and in plowing for wheat I gave the three full and plenty with a 14-inch walking plow. The hillside on my farm is clay, and I think should be plowed deep, as I want to clover it next. I went down fully nine inches, and there was a crust of about five inches that was as hard as dry, run-together clay can get, and it was then that I thought of your letter and a tractor—a machine so arranged that a set of disks would cut up the top crust and a 16 or 18 inch plow would follow and turn up and mix the subsoil, say about a foot deep. Then if the fertilizer were mixed with the clay I think we should have new land again.

ARTHUR R. DITTMER, Illinois.

Interests Young Farmer

DEAR EDITOR: We have been subscribers for more than twenty years off and on. We like the paper very much and hope to continue taking it. My boy of sixteen is beginning to take a lot of interest in it, for he has all our farming to do. MRS. C. F. JENKINS, Missouri.

Selling Butter Direct

[CONTINUED FROM PAGE 3]

or ten cents more a pound than I could get at local stores.

Now as to getting payment, I usually send a statement with each shipment, and each customer forwards the money before I ship the next lot. It is understood beforehand just when each customer wants his butter and how much at a time. I prefer to get customers who take five-pound amounts. Most people have it sent once a week; a few once in two weeks. I have also found it a help to place in each package a little slip advising that the butter be placed on ice for two or three hours before using, especially in the summer time. This last summer a change was made in our rural route, so the letter carrier collects my butter and carries it directly to the post-office, and it is shipped promptly. So I have had no difficulty about the condition of the butter on arrival at its destination.

But before that the carrier came at a different time and over a different route, which required him to carry the butter quite a while before getting to the post-office. I dared not risk sending it by the carrier in hot weather, so I would put the butter on ice till it got hard and solid. Then I placed it in a box with ice and drove to the post-office, planning to get there shortly before the train went out with the mail. When the customers received it four or five hours afterwards it opened up in nice order.

Best Ad a Satisfied Patron

Although I can scarcely pick up a newspaper without finding a prospect for my butter, it has been quite a while now since I have needed to look for new customers. A satisfied customer is the best advertisement, and I have increased my trade 100 per cent in the past few years.

While I keep in touch with my customers and tell them points of interest about my farm and products, I make my letters short and to the point. How many times have we all received letters of two to six pages from firms desiring to sell us an article! Such letters are usually glanced through and laid aside or thrown away never to be read; while, if it had been one page and right to the point, we might have read it. Of course, we must not expect to get answers from every letter sent out after new customers. An order from one prospect out of six or eight is doing well, and will be profitable, other things being equal.

I found that when I began to use the butter printer giving 16 one-ounce prints, my orders increased perceptibly. Perhaps the explanation is that when a person takes a piece of butter at the table he will naturally take an entire ounce, and having it on his plate will eat it. An ounce at a meal is somewhat in excess of the usual amount, hence the increased consumption.

Perhaps the system I described may need readjusting to fit different persons and localities, but constant trying will finally bring success. The goods must show quality if you expect to hold your customers, and if a neat appearance is also present, customers will be so pleased that they will tell their friends.

Make Money With This Flour Mill—\$150 to \$1,000 Per Month Making FLAVO FLOUR

You can do this by owning and operating one of these wonderful self-contained flour mills, and sell most of the flour used in your community.

The American (Midget) Marvel is the sensation in flour mills, and is revolutionizing milling. It is the latest improved roller mill, and makes better, purer and whiter flour at less cost, so gives you greater profits. One man without previous milling experience can run it.

AMERICAN (Midget) Self-Contained MARVEL MILL

When you purchase an American (Midget) Marvel Mill you become a member of the Community Marvel Millers Association, and you can put your flour up under our nationally advertised brand "Flavo," as shown below. Your mill is then inspected every 30 days by our Service Department to keep you up to quality. We start you off and practically make your success assured.



Advertised Everywhere Known to and wanted by millions

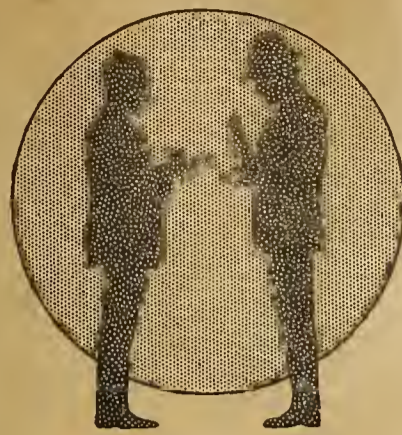
Next to banking, this clean-cut, profit-making milling business for you in your community is one of the most permanent money-making business opportunities today. It can be yours if you have as much as \$2,000 to invest. Sizes of mills, 15, 25, 40, 50, 75 and 100 barrels per day. Power required, from 6 h. p. up.

Sold on cash or easy payment terms and 30 days free trial always given.

Write for "The Story of a Wonderful Flour Mill," experience of owners, and our proposition about the opportunity of making FLAVO FLOUR on the American Marvel Mill in your community, FREE.

ANGLO-AMERICAN MILL CO., Inc. 288-294 Trust Bldg. Owensboro, Ky.

It is to your interest to mention Farm and Fireside in answering advertisements.



It takes more than good intentions to build *real worth* into moderate-priced clothes. The Clothcraft Shops specialize in this one grade of clothing.

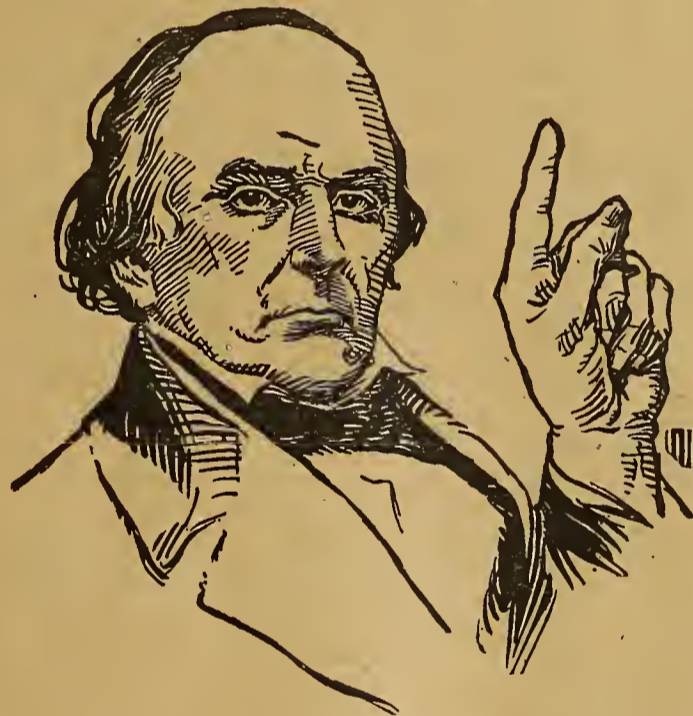
Methods have been perfected, speed increased, cost cut down until now Clothcraft Clothes—scientifically tailored, and ready-to-wear—yield the utmost in fit, looks and wear that can be given men and young men at moderate prices.

CLOTHCRAFT Clothes \$12 to \$25

SERGE SPECIALS
"5130" Blue, \$16.50
"6130" Gray, \$16.50
"4130" Blue, \$20.00
"3130" Gray, \$20.00

Made by The Joseph & Feiss Co. Cleveland

THE CLOTHCRAFT STORE IN YOUR TOWN



"The Farmers are the Founders of Human Civilization"

Dan Webster
(Daniel Webster)

Notice to Farm Implements Game Contestants

MANY persons interested in "The Farm Implements Game" are writing to ask when the awards will be made. To all such inquiries we must reply that the work of tabulating and checking the thousands of answer sets received is progressing as rapidly as is consistent with accuracy. Every contestant may rest assured that the greatest care is being exercised to insure a careful consideration of each set, and that the awards will be announced at as early a date as possible. Present indications are that we will be able to publish the list of successful contestants in one of the June issues of FARM AND FIRESIDE.

THIS is as true of the farmer now as it was in early days. And as builders of a great public utility, the Firestone Organization is a big factor in this vital work. Progress depends upon transportation and among its most valuable factors are

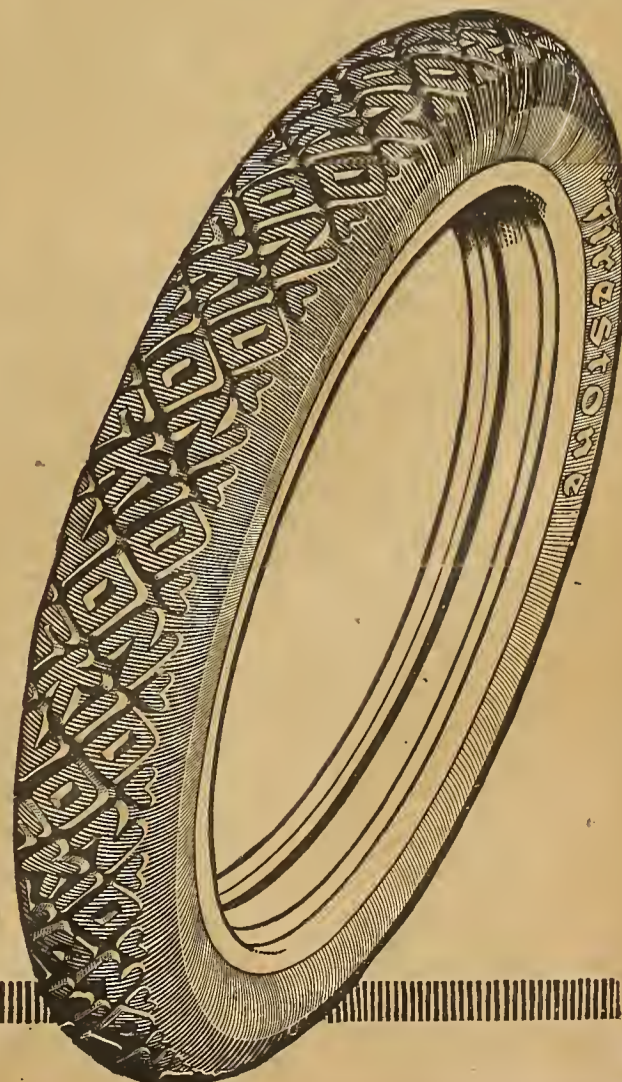
Firestone TIRES

Wherever the road leads, whatever the work requires, your machine will ride safest, easiest, best on Firestone equipment. Firestone rubber is selected and prepared to give tough, resilient service; the service that means long, comfortable riding. And many plies of Firestone fabric, of a quality exclusively Firestone, mean big gain in strength and stamina.

On every Firestone Tire there is stamped the name of the founder and present head of the business, Mr. Firestone. And when a man puts his name on a product he gives a pledge to the public which only quality can make good.

Your dealer and the nearest branch work together for you.

FIRESTONE TIRE AND RUBBER COMPANY Akron, Ohio Branches and Dealers Everywhere



Disston Saws Save Time and Money

THOSE little odd jobs that need doing—they don't take long if you have the right kind of tools to work with.

You can do better work and do it more quickly and more easily with good tools—that is why carpenters use them. They cost less to keep sharp and they last years longer. Many a carpenter has used the same Disston saw every working day for twenty or thirty years—some longer.

A Disston saw—the kind carpenters use—saws to the line because it is built right. It stays sharp because the steel in it is Disston-made and Disston-tempered steel. And it is the same all the way through. It will serve your sons as well as it serves you.

The rough and ready work which a saw is called upon to do on the farm demands quality and durability. The name of Disston on a saw guarantees both.

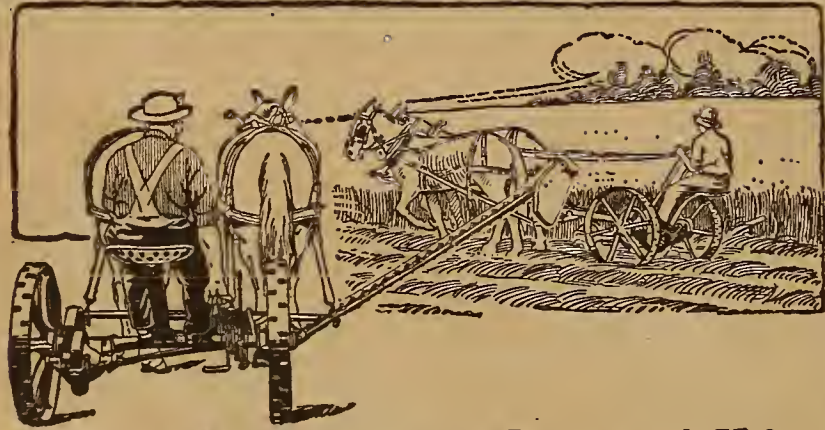
Disston circular saws, hand-saws, trowels, files, screw-drivers and other tools are all of the same Disston quality.

Send for free booklet "Disston Saws and Tools for the Farm." Address

HENRY DISSTON & SONS, Inc.
Philadelphia, U. S. A.
Canadian Works: Toronto, Canada

DISSTON

SAWS AND TOOLS



Good Hay-Makers All!

HAY fields without International Harvester mowers, rakes and tedders upon them at some time in the season, give you almost as strange a situation as hayfields without hay. That is how popular **Champion, Deering, McCormick, Milwaukee, Osborne and Plano** hay tools have been on thousands upon thousands of farms for seventy-five years.

Last year 40,000,000 American acres were mowed by mowers on each of which was one of these names. That means they are very good mowers. Just as good rakes and tedders followed. If your own hay making is not being done by hay tools chosen from these lines, at least it is certain that they are doing the work for the majority of your neighbors. This year there will be more than ever sold, and they will be better built than ever.

Choose an **International Harvester** mower, rake and tedder. That means good, easy hay making, long service, prompt repair service if you need it. **Champion, Deering, McCormick, Milwaukee, Osborne and Plano**—safe names in the haying season. Write us for a catalogue on any line. Get posted early.

International Harvester Company of America

CHICAGO (Incorporated) U S A
Champion Deering McCormick Milwaukee Osborne Plano

Good-Health Talks

Suggested by Questions from Our Readers

By DAVID E. SPAHR, M. D.

AS a carrier of disease the housefly is one of the greatest enemies of the human race. The fly itself is not so harmful, but the danger comes through the material which it carries on its feet and body. Its legs and body are covered with fine hairs which make it an easy matter for the fly to gather filth of all kinds. It is democratic in the kind of places it chooses to visit, coming from the manure pile or the garbage can and lighting on the dining table or the baby's milk bottle.



and bowels before there is any lesion of the skin. The tongue becomes red and sore, and water runs out of the mouth. In the treatment of the disease, nourishment is of the greatest importance, and it should be varied. Milk, fresh vegetables, and fruit should be given. A cool climate is much better.

I really think, however, that you should be examined for pellagra by the best expert, and if you have it, now is the time to get cured.

I would advise you to go to a doctor who has had experience with the disease.

Gas on Stomach

What is good for gas on the stomach?
J. M. S., Illinois.

FOR the gas on your stomach take from two to five soda-mint tablets after meals, or when required.

Consumption of the Bowels

G. W. of Indiana enumerates a long description of symptoms that are common to all cases of general tuberculosis, and asks if they are not the symptoms of tuberculosis of the bowels.

CONSUMPTION of the bowels has but few distinctive features or symptoms. Pain and tenderness of the bowels is sometimes followed by an effusion of serum that may be abundant; sometimes a continuous diarrhea. Tuberculosis of the bowels is usually a secondary disease. From your description of the case you refer to, I should say that he has general tuberculosis.

Skin Trouble

My neighbor's baby is seven months old, and has skin trouble. It breaks out all over its body and at night it cannot sleep from itching. It does not seem to bother during the day. Has been troubled for about six months.

Mrs. V. J., Wisconsin.

HAVE them wash the child with carbolic water, 10 drops to the ounce, and then apply mutton tallow freely.

Ulcerated Teeth

My teeth are sore at the roots. I am fifty years old and have twenty-two teeth. The soreness has continued for several weeks.

E. C. C., Utah.

WASH your mouth with a two per cent solution of boric acid containing 30 drops each of formalin and spirits of wintergreen to the pint.

Catarrh of Throat

I am twenty-two years old. My throat has been sore more or less for several years. My mother and sister died of tuberculosis about sixteen years ago. Tell me if my condition is dangerous.

C. L., Washington.

LIVE, work, and sleep as much as possible out of doors. I do not say, however, that your condition is dangerous, but now is the time to effect a cure in the open air.

Stomach Trouble

I am a farmer, nineteen years old, work hard, but my food does not digest and my stomach hurts me. J. M., Ohio.

AFARMER boy nineteen years old should not have stomach trouble unless he eats when he is too tired, or eats too much, or too fast, or too many rich dishes. Cut out pastries and a few other things of doubtful benefit, and note the result. Eat more slowly, chewing your food thoroughly, and never eat more than you really need. Stop just short of satisfaction.

Pains in Back

I have such pains in my back and arms, it is almost impossible for me to work. W. A., Minnesota.

PERHAPS you are suffering from some infection. How about your teeth or tonsils, or your intestinal digestion? Clean out your bowels thoroughly with some good liver pills, followed by castor oil in the morning. Take a five-grain tablet of strontium salicylate every three hours.

Mild Sciatica

For the last week I have had pains in my back and legs from my hips down below my knees, my back aches, and I feel weak about the waistline.

I. J. B., Alabama.

YOU have rheumatic trouble in the form of mild sciatica. Take a five-grain tablet of strontium salicylate every three hours, and plenty of laxatives.

La Grippe Cough

Will you please give me a remedy for influenza or grippe followed by a cough? Mrs. O. W. P., Florida.

TAKE one one-third grain calcidin tablet in a tablespoonful of hot water every hour or oftener, as may be required.

Take extra precautions not to catch further cold, but get as much outdoor life as you can.

To Cure Shingles

I am seventy-two years old, and about four months ago I was taken with neuralgia pains in my side. The doctor called it shingles. I was in bed four months, but the burning pain persists. Can anything be done?

Mrs. M. S., Montana.

YES. Paint it over with flexible colodion. This will pain severely, but will soon relieve it.

Loose Joint

A few years ago one of my knees developed a looseness. It seems to go in and out of joint whenever it is bent. The trouble is growing worse.

Mrs. H., Massachusetts.

IWOULD advise you to get an elastic knee band and wear it.

Asthma

Is there any cure for asthma? Have had it all my life. Will dry air and high altitude cure it permanently?

J. V., Michigan.

THERE are several varieties of asthma, as the cardiac, gastric, and bronchial. I suppose you refer to the usual bronchial asthma. Persons have found permanent relief by a change of climate, but there is no fixed rule. For this Colorado, New Mexico, southern California, and Florida are probably the most favorable.

From three to ten drops of adrenalin chloride given hypodermically will abort many attacks of asthma.

Pellagra

"CAN pellagra be cured?" Thus writes one of our Alabama subscribers.

Pellagra can be cured in 50 per cent of the cases. It may affect the stomach

Letters from a June Bride

Betty Rearranges Her Kitchen



DEAREST SISTER: Billy loves to tell about our first visit to Washington, when he took me to see Mt. Vernon, General Washington's wonderful

old home. He declares that I was far more interested in the big square kitchen, with its oven built right in the wall and the huge fireplace, piled with all the quaint old-fashioned iron utensils and the odd pewter dishes lined along the wall, than I was in all the other wonderful treasures which make this place famed the country over. I suppose such a statement sounds awfully unappreciative, but I really think it was true. I couldn't help but wonder how all those famous old "dishes" could have been prepared with such very clumsy tools.

It was exactly the same way when I went through Mary's new house yesterday. When Billy asked me to tell him about it afterward I couldn't seem to remember many details except about the kitchen, which is so complete in every way that I couldn't help wondering this time how in the world she would find enough work to keep her busy.

To begin with, the room is small, quite long and narrow (I am sure it would go twice in mine), and everything is arranged so that she can do things with the least amount of effort. Along one wall is her kitchen cabinet, equipped in the most complete way with scales, measuring cups, thermometers as well as all the regular utensils, and next to this is a big cupboard for extra dishes. On the opposite side is the range with its large water tank and warming oven, so that all she has to do is to wheel around in her kitchen stool and put the bread or pie in the oven without a single step. The sink is conveniently near the stove, as well as a fine new fireless cooker, which she says is the most efficient thing in her kitchen.

The walls are not papered, but the whiteness of the fresh plaster adds an even greater effect of lightness, which is amply supplied by the two large windows on opposite sides of the room. She has carried out, quite an original idea with the woodwork, having it painted black instead of white, as is usually done. I think it is a very sensible idea, for every housekeeper knows what a task it is to keep white woodwork properly clean.

I came home so enthusiastic about Mary's model kitchen that I determined to see what I could do to make my kitchen more convenient. I got Billy to help me move the kitchen cabinet away from the side wall, right into the middle of the room where it looks somewhat odd, to be sure, but it cuts the room exactly in half and will save me countless steps back and forth to the stove. I am every day more thankful that I have this lovely cabinet. Billy has never given me a present that has given me so much real pleasure and comfort, and I wonder how I ever got along without it for so long.

THEN I have moved the table in front of the window, such a very simple change I am ashamed I haven't thought of it before. Instead of staring at a blank wall when I wash my dishes I can look out and watch the men at work in the orchard and keep my eye on the baby chicks when they get large enough to wander around by themselves. Billy threatens to cut down the old apple tree near this window. He says it is full of disease and a real menace to the new orchard, and tries to win me over to his way of thinking by telling me that it is just the same principle as letting a person with smallpox run at large. Of course, I realize that this is all true, but nevertheless I shall be sorry when it has to go.

Mary has made me promise to begin using a kitchen stool, and Billy says he will make one for me the first spare minute. He has after the spraying is over. Another thing I'm going to do, though I didn't get this idea from Mary, is to hang some good framed pictures in my kitchen. I cannot see any good reason why there shouldn't be pictures in a kitchen as well as in any other room in the house. It seems such a pity to hang all the best in the parlor, which is not used so much of the time. I once

read of a woman who tacked up mottoes in her kitchen, which wasn't a bad idea. Such inspirations help to keep women from regarding their kitchen work as drudgery.

I'll tell you more about Mary's house later. There are lots of interesting details which could be adapted to an old house as well.

The three flannel shirt waists I bought in Springfield fit perfectly, and how thankful I am now that I bought them ready-made instead of worrying with buying material and making them! Of course, it will soon be too warm to wear them any more this year, but it will give me a good start for my everyday clothes for next winter, and it will enable me to get some wear out of my last year's skirt, which I am afraid I couldn't have done otherwise. It certainly does pay to wait until the end of the season to buy things of this kind. Just think of paying 27 cents for waists that were \$1.50 at the beginning of the season, and they really are of excellent quality too.

OF COURSE, the big stores can offer these special bargains because they don't like to keep old stock on hand with the styles changing so often, at least that is what Billy says. But I'm sure it doesn't make a bit of difference to me whether tailored flannel waists are in vogue next season or not. They will be on this farm I can assure you. Sometimes we wonder whether it pays to take the local daily paper. There is so little news in it, but I tell Billy it is quite worth our while to keep informed of all the sales, especially at the end of the season when we have often been able to get some real bargains.

I stopped in for a minute at the Greens' the other day. I found Mrs. Green very busy, as usual, this time in the midst of painting chairs. She had found three old tumble-down chairs at one of the country sales some time ago and had bought the lot for a dollar because they had "good lines and possibilities," as she said. She had Jack put in a few nails and screws to brace them up a bit, and I wish you could see what wonders she is doing with them, with nothing more than a little white paint and some pretty cretonne. She gives them several coats of white paint first, and then gives them a finish of enamel. Then she gets flowered cretonne with gay and attractive patterns, cuts out the pattern roughly and glues it to paper, and then cuts out the design in detail and glues this to the crosspieces on the back of the chair, so that you wouldn't know it wasn't actually painted by hand, which of course is the real way to do it.

She says that the old-fashioned painted furniture is being revived again, and she thinks I'd be "perfectly crazy" if I didn't fix over those two dear old chairs in my kitchen, which used to belong to Great-grandmother Smith, and which still show traces of the painted borders and flowers. She says anyone could paint a simple flower design, and all you need is a brush and a few oil paints, which can be bought at any drug store.

I came home full of the idea, but Billy is inclined to think all Mrs. Green's ideas impractical, and rather put a damper on my enthusiasm. However, I think I'll go ahead anyway, and fix up the old chairs for his birthday present. They would be so dainty and pretty in the guest-room, with all the white woodwork and furniture.

Betty

TO CLEAN POLISHED FLOORS—Use equal parts of linseed oil, turpentine, and vinegar. Put in a pan and use a rag as though you were washing with water. A teacupful of each will clean four ordinary rooms. This is nice for cleaning woodwork, and will dry in a few minutes. A. B. W., Illinois.

ATTRACTIVE LOAVES—To make the attractive brown coloring or glazing on his loaves of bread, a baker turns live steam into the ovens. The same result may be simply accomplished by the housewife if she will put a small pan of hot water into her oven when she is baking. M. K., Montana.



Photo White

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Feminine Garden Gospel

By Carrie Z. Galliher

TO SPEAK of the home garden as a thing of beauty or a thing of value would in too many cases be a serious misrepresentation. And yet every garden ought to be both beautiful and profitable.

Since a good garden means about one half of the family's living, it certainly deserves the best of attention in every respect. It is true that a large number of gardens come far from furnishing one half or even one tenth of the living. But this is the owner's fault. Many otherwise model farmers have a measly little weed patch that they refer to as "the garden" when in fact it ought to be called "the spot of neglect." A great many men are never in the garden from the time they plow until they plow again the next spring. All the attention it gets is given by the wife, who is often so busy cooking for the family, plus two or three hired men, that the garden work, which might otherwise be a pleasure to her, is simply an hour or two of back-breaking drudgery.

There are all kinds of inexpensive labor-saving garden tools on the market that any woman would be glad to get out of the hot kitchen to use. However, all garden work should not be put on the women. But if the right conditions prevail and the right tools are provided, the home garden is a veritable recreation ground for a woman not otherwise overworked.

The shape of the garden is of first importance. By all means make it long and narrow, plant in rows the entire length, and cultivate with a horse. This of course is the man's job. If the garden is too small to permit horse cultivation, plant everything in rows just the same, though perhaps not so wide, and cultivate with a wheel garden hoe.

If the farmer will stop to consider just what a good garden means to the family, and will invest a few dollars in the right kind of garden tools and garden seeds, he will then be able to see that an hour or two spent in the garden at the right time may mean far more in dollars and cents than the same hour or two spent in the cornfield.

How Much Manure is Needed?

By E. L. Kirkpatrick

OWING to the present high prices of commercial fertilizers and to the difficulty in securing potash in scarcely any form, many gardeners are planning to resort to the use of increased amounts of stable manures during the coming season.

While this practice looks good on the surface, since it usually means a greater yield of crops, the present physical condition of the soil and the increased costs of production should be taken into account.

Several successful intensive gardeners, among them C. W. Schwartz of Wapello County, Iowa, have learned that the excessive use of stable manure is detrimental to the growth of many crops, and is an unprofitable practice.

Twenty tons of manure to the acre, on fields under irrigation, year after year, produced quantity in crops at the expense of quality demanded by first-class markets. Fresh, crisp vegetables grown on these fields failed to hold up until they passed through the grocer's hands to the consumer. By reducing the amount of manure and using increased quantities of a fertilizer having a high phosphorus content the difficulty is being overcome.

Repeated tests carried on by students of the Department of Vegetable Gardening at the New York State College of Agriculture, as to the amount of manure needed for market garden crops, favor the use of 10 to 20 tons year after year. Plots on which manure at the rate of 60 and 100 tons were applied showed, in general, a reduced yield, as well as an inferior quality of crops.

While the results of these experiences and tests may not be applicable with crops requiring special soil treatment, or on poor or worn-out soils, they are worthy of consideration from the gardener whose soil is in good physical condition at present, and who is anxious to keep increased cost at a minimum.

Melons in Cold Climates

By E. M. Anderson

HOME-GROWN melons in a climate as frosty as ours (southern New York) are very rare. Nevertheless, I get some good crops. First, I secured several varieties of seed for northern sections from the most reliable seedsmen I know. Following the advice of a successful melon grower I fill some berry baskets half full of well-composted manure and the upper half with good garden soil. Five seeds are planted in each, and two of the weakest plants culled out. The remaining plants are carefully nursed in the house and cold-frame till all danger of frost is past. They are then transplanted to hills in the garden, each basket making one hill. The mellowest, best-drained portion is selected and a shovel of manure is put under each hill. If late frosts should threaten, the little plants are covered and thereafter are given the best of care. No remarkably large watermelons are secured, but nice, ripe, sweet ones are enjoyed, and muskmelons as large as any on the market and of first-class quality.

My experience shows that previous preparation is more essential to melon success than any after care that can possibly be given.

A Hotbed Helps Out

By Grace Dietz

I FIND that a few hotbeds will bring in a nice little bunch of money from the sale of cabbage, tomato, and sweet-potato plants in addition to furnishing what we need for our own use. Last year we put out about 12,000 sweet-potato plants and secured a good market for the potatoes. The varieties grown were Red Yam, Southern Yam, Yellow and Red Jersey Sweets. For dry storing we find the yams will keep in better condition than the Jerseys.

A stretch of two or three rods of hotbed is an easy matter to make by using rough lumber and a good quality of sash. The hotbeds should be prepared in the fall before the ground freezes, all ready for the horse manure to be placed in them at the proper time early in the spring. By covering the hotbeds over with rough lumber and plenty of straw so that the ground will not freeze, it is not a difficult job to get the beds started early in the spring. Of course, some good garden soil for covering the manure should be provided under cover also.



End of hotbed where thousands of truck plants are grown. Plants bunched ready for customers are shown on end of hotbed

How to Cut Potato Seed

By Jay Lawrence

THE best potatoes that I ever saw were grown from potato peelings. While this is not a practice of our own, I know of people who take large tubers, pare them, eat the inside and use the peeling for planting.

Under favorable conditions, such as a fine mellow soil, plenty of moisture at the right time, and proper care, peelings may bring a good crop of good-sized tubers. Yet where one man succeeds ninety-nine may fail.

Some say to cut potatoes in halves, others say in quarters, still others advise one eye to the hill. While this matter seems pretty badly mixed in the minds of most people, still we may truly say that perhaps all of these people are right. For the most part it is simply a matter of favorable conditions and skill. If you have poor land rather poorly prepared and small seed that has sprouted, you would be right, perhaps, in planting whole potatoes; while if you have pretty fair soil and seed and tend to the crop moderately well, a quarter of a potato, or possibly two or three eyes, on a piece may be best. But if you have rich land and good seed and take care of the crop properly with most varieties, one-eye pieces planted the proper distance apart will no doubt be best.

Our experience shows that under ordinary conditions the size and shape of the cut piece has more to do with it than the number of eyes which are left in the piece; that is, the pieces should be cut short and thick rather than wide



This diagram shows how to cut seed potatoes to advantage

and thin. When the young sprout is developing it derives its nourishment from the cut piece, and if it should happen to be dry weather just after planting, the thin cut piece will dry out quickly, or it may dry up altogether and not produce a plant at all, while the chunky piece holds the moisture and allows its food elements to be used by the young plant.

There is a great difference in the number of eyes which the different varieties have, and this must govern us some in our cutting. For instance, a variety like the Early Rose, which has a large number of eyes, must sometimes be cut with two eyes to a piece in order to get a piece sufficiently large to withstand any dry weather that might come. If the soil is prepared very fine, then there is a good degree of certainty of there being plenty of moisture there in the spring, and then the little sets will be safe. It doesn't make any great difference how you cut when one-eye pieces are wanted, only so you have about an equal quantity of pulp in each one, and the pieces are chunky instead of thin.

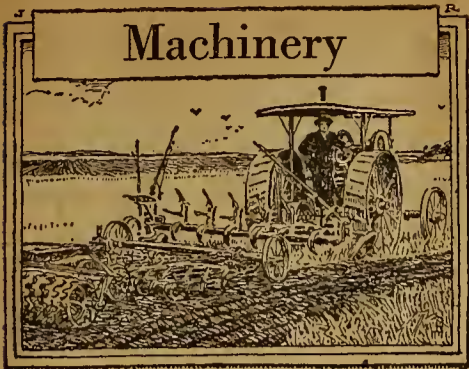
Has Grown Many Varieties

In the last four or five years we have been growing many varieties of potatoes, as we exhibit a good bit at fairs, and we find the Early Ohio variety is one variety which does better with two eyes than one.

Our practice in selecting seed has been to select the well-shaped tubers varying from medium to large, and we most frequently plant the ones which we exhibit the preceding fall and winter. These are of course the most typical in size, shape, color, etc. The selection is made at digging time and from the best hills. Most small growers eat what they want of their crop and plant what is left, but we reverse this by selecting our seed first, and eating or marketing what is left. What farmer would think of sowing his wheat screenings for seed or getting his seed corn from the poorest ears he could find!

The average yield of the potato crop of this country is less than 100 bushels to the acre, and there are many causes for it, but perhaps no one cause is so much responsible for the small yield as the selling and eating of all the best and planting the culls which are fit only for the hogs. With many farmers "seed potatoes" mean small ones. Like begets like to a certain degree, and "as a man sows so shall he reap."

As has been said before, under very favorable circumstances there might be scarcely a difference in a single year, but with such seed the variety will run out sooner and yield less.



Machinery

Standard Tractor Hitches

By Carlton Fisher

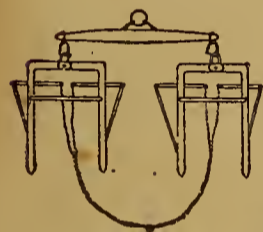
PROBABLY the most important step in tractor progress that has taken place this year is a movement set on foot during the Midwinter Tractor Show held in Kansas City. Leaders in the tractor industry feel that too many sizes of bolts and nuts are now used in tractor design, that the height of drawbars are too variable and the size and speed of belt pulleys should be made more uniform.

A standardization committee is now at work endeavoring to bring about the desired changes. There will probably be two standard heights of drawbar hitch, one for plows and the other for drills and implements of that class. This will greatly simplify the use of various pieces of farm machinery with tractors, since any standard implement will then be ready to hitch to any standard tractor without change.

Standard spark plugs, fan belts, magnet dimensions, and other parts common to all tractors will likewise receive the attention of the committee along lines similar to those successfully followed in the standardization of automobiles.

Double Forks

By Wm. L. Schick



IN HANDLING short hay the ordinary harpoon fork often proves slow because of the small amount of hay it will take up at a time. In such cases the plan shown in the sketch gives good

results. Take a strong neck yoke and by means of two plow clevises fasten a double-harpoon fork at each end. Use bolts with burs instead of ordinary plow pins.

Then fasten the trip ropes of each fork together and tie another rope to the middle so that both forks will be tripped at once.

Plowing Twice in Furrow

By Harry Harper

I HAVE been using a method for spring plowing here in Illinois which may appear odd to some who read this, but the results have been good. I plow in the spring and go twice in the same furrow. The first furrow I make rather shallow, especially when plowing sod, since the plow works best in sod when run about three inches deep. When work is pressing I have two plows going, but in most cases I do all the work myself.

Then I set the clevis over and go in the same furrow again, taking up four inches of dirt this time. The clevis on the plow can be set so the furrow horse walks in the furrow all the time, which makes it necessary to change the clevis every round.

This is a little bother, but it seldom is any loss of time, as I usually stop for the horses to rest a little. After the second time around there is a deep furrow to plow the top slice over into. Then the bottom furrow slice will crumble up and cover the sod nicely. There is no hard work for the disk to do. With one good harrowing the ground is ready for the planter, and when you go out to cultivate you will find that the cultivator seldom touches a sod.

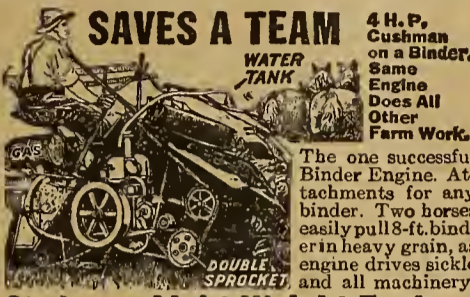
The plowing is easier on the team and the ground can be prepared this way with less horse strength and in almost the same time as the usual way. The ground is also stirred deeper than with ordinary single plowing. The sod is down out of the way of cultivation and the land will stand dry weather better should it come. I have plowed some of the toughest blue grass this way, and it has always given good results.

EDITOR'S NOTE: Has anyone else used this plan of plowing? The principal objection is that you lose the effect of little pieces of sod as a mulch, and the vegetable matter is buried so deep it will decay very slowly. In what way, if any, is the plan described superior to disking before plowing?

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The John Deere Two-Way Plow works equally well on hill-side and level land. A slight foot pressure swings frame and accurately locates plow bottom. Automatic shifting hitch—clevis cannot fail to move to position. Automatic horse lift. Operator's foot engages latch—pull of team raises the bottom. Hand lever also provided. Wide tread—prevents tipping on hill-sides. Steel frame—strong. Made expressly for Eastern conditions. Can be equipped with all styles of bottoms.

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The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

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Syracuse Farm Implements are the result of over forty years study and experience. Quality has always been the company's motto.

Every Syracuse implement is scientifically designed, and is built of the best material obtainable. To assure its uniformity and keep the quality of iron up to the high Syracuse standard, a complete chemical laboratory is maintained by the company. A careful analysis is made of each day's melt. When you buy a Syracuse implement you can be assured that you will get satisfaction.

The Syracuse Spring Harrow is uncloggable; has direct draft without side motion, simple and positive adjustments. Any number of sections may be combined. Plain or reversible point, high carbon steel teeth without bolt holes. Syracuse harrows are unusually strong.

John Deere Factories

Every implement bearing the John Deere trade mark is made in a John Deere factory.

To insure the best in every class of implements there is a special John Deere factory for making each class. John Deere Plows are made in a plow factory; their hay-tools in a hay-tool factory; their planters in a planter factory.

Every tool in the John Deere line is made in a factory organized and equipped to make such tools.

All John Deere factories are in communication with each other. Each has the benefit and experience of all.

When it comes to purchasing raw material, John Deere factories as a unit, represent an enormous buying power. This is an advantage to purchasers of John Deere implements.

Don't forget that each John Deere factory is a leader in its field—that every implement it turns out is worthy of the name, "John Deere."



Neolin Soles for Easy Feet and Clean Dairies

It lies before him, the modern dairy, with its clean, cemented floor, but—

"Hard on the feet!" says the walk-worked dairyman.

And "Muggy for the feet," he says, when he hoses that smooth floor down.

And "Slipp'ry for the feet," says he, as he thinks of his leather soles.

Why *shouldn't* he buy Neolin Soles, whose springy, padded buoyancy makes cement floors foot-easy floors? And which don't carry sole-dirt in the way that leather does.

Neolin Soles that laugh at floor-hosing and keep your foot-soles as dry in the dairy as on the soaky meadows where the cows graze. That *do* grip and *don't* slip on dry or wet cement, or any ground whatever.

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Live Stock

Springtime Surgery

By W. P. Shuler

A CERTAIN amount of animal surgery can always be profitably and correctly done by the farmer and stockman—namely, dehorning, vaccinating, and altering male calves.

The different methods of dehorning cattle are clipping, sawing, and cauterizing. Clipping and sawing is best accomplished when the animal is six months to one year of age. Cauterizing is done with a stick of silver nitrate or a hot iron as soon as the horn bud can be distinctly felt on the skull, usually at one month to six weeks. It is the best method and does not leave the head deformed by the presence of horn scars. The operation consists of clipping the hair over the bud and searing it thoroughly with a hot iron or with silver nitrate.

Where the horns are sawed or clipped off a great deal of pain is inflicted and loss of blood results, consequently the animal's vitality may be temporarily lowered and bad results follow if they are exposed to unfavorable weather.

All cattle are susceptible to blackleg from the time of birth until they are two or three years old. Vaccination is a 95 per cent preventive, and should be done two or three times between weaning time and maturity to insure good results.

Use Vaccine in Three Forms

Blackleg vaccine is dispensed in three forms—the pill, liquid, and powder. The results obtained by the correct administration of any of these different forms of vaccine should be the same. On the Western ranges cattle blackleg preventive is used by the thousands of doses.

The most desirable age at which to alter male calves is six months. By this time they have a good, sturdy frame and have sufficiently developed male characters that they will make good, strong steers. Plenty of antiseptic should be used, and the knife and hands of the operator as well as the field of operation should be thoroughly scrubbed with a two per cent solution of any standard disinfectant.

The best time of the year to alter calves is the spring and fall, just after winter has broken and before fly time. In the fall wait until after the flies are gone—in the North, April and October; farther south, March and November.

Animals cannot safely be dehorned, altered, and vaccinated at the same time. There is a tendency among stockmen to do this, thus preparing the stock for pasture without the extra effort of handling them twice. The risk from this cannot be overestimated, as the writer has seen many bad results from its practice in the Southwest. The danger is that when calves have been dehorned, altered, and vaccinated in one operation the loss of vitality and the shock to the system is so great that they will often develop blackleg as a result of the injection of the vaccine, which consists of a weakened preparation of the disease virus.



If a well-bred draft colt is given plenty of feed and good care it will develop into the kind of horse for which the market pays a top price

Should Farmers Specialize?

By R. E. Morris

WE ARE living in an age of specialization, every big business specializes in their line. Farmers should specialize because they have a big business.

The point the writer wishes to get at, does the farmer need a silo? Experience teaches us that we can operate cheaper on the farm with a silo than without, as you can feed, at a profit, any stock on the farm, including chickens, on the following figures.

We give our experience commencing August 1, 1916, and ending December 10, 1916. We bought 40 head of Herford steers, weighing 1,000 pounds a head, at \$8 a hundredweight, laid down at our farm. We fed them, after getting them on full feed, on the following:

40 pounds a day to the steer, or 4,800 pounds for full period (which is equal to one-fourth acre of corn, making 50 bushels to the acre, which makes 10 tons of ensilage), at \$1 a bushel makes ensilage worth for full time	\$12.00
10 pounds of corn a day, or 1,200 pounds for full period (part ground and part in shock), at \$1.34 a hundredweight	16.08
Total cost of feeding	\$28.08

These cattle ought to have had five pounds of either alfalfa or clover hay, but we did not have this, so we omitted it, and the ensilage and corn was all we fed them.

This feed made a gain of 300 pounds a steer for the time mentioned, not counting anything for the hogs. The steers sold at \$10.25 a hundredweight, weighed at the barn, making \$133.25 less \$80, the first cost of steer, plus \$28.08 for feeding, which makes a profit of \$25.17 a steer, or \$1,006.80 profit for 40 head. This, plus \$200, the value of 200 loads of manure at \$1 a load, makes the total profit \$1,206.80.

Basing this corn on 50 bushels an acre, it would take 14 acres of corn and 4,800 pounds of ensilage to the steer, which makes 96 tons. Basing on 10 tons an acre, it would take 9 3/5 acres for ensilage, making a total of 23 3/5 acres to do this feeding for these 40 head of steers for the full period.

Sheep-Raising Industry

By James Blake

IT IS now time for the live-stock farmer to make sheep-raising one of his regular lines of production. To the man who will study and understand the business, sheep-raising is fully as safe and attractive as the raising of cattle, horses, or hogs.

Assured meat values of the future, the need of greater economy in the use of farm labor, and the full utilization of pastures, place sheep raising in an entirely new light. Before 1914 this statement would not have been justifiable.

Because of statistical facts which show a decline in popularity in sheep-raising in Eastern States, some authorities have questioned the safety of raising sheep. Such statistical deductions are misleading, because nowhere in the United States has there been a decline in a well-established sheep industry based on the production of both meat and wool.

The farm flocks that have disappeared were raised almost entirely for wool production. These sheep had little in common with the kind of sheep that are now being raised in America.

In starting the business of sheep-raising, it is best to work quickly into a flock of about 100 ewes. A good proportion is to have a ewe for each two acres of the farm.



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Dairying

Creaming of Milk

By C. O. Reeder

THE creaming ability of milk is a matter of common observation. We know in a general way that some kinds of milk cream more rapidly and have a sharper cream line than other kinds, and that the temperature has an influence. Here are briefly the results of a thorough study of the subject made by B. W. Hammer, an Iowa dairy expert. The facts may be of use to readers having milk routes.

Low temperatures give deeper cream layers than high temperatures. At ice-water temperature a deep cream layer is first formed, and this gradually contracts as the milk stands. At room temperature a shallow layer of cream is first formed, and this increases as the milk stands.

Agitating the milk does not necessarily decrease the creaming ability, and occasionally there is a slight increase. Running milk through a cream separator and then mixing the cream and skim milk causes a slight decrease in the depth of the cream layer; the rate of the rising of the cream is also decreased.

Value of Old Sires

By W. B. Collins

DURING Farmers' Week at the Missouri College of Agriculture there was an interesting discussion of the records of dairy sires. According to C. H. Eckles, who has made a special study of dairy breeding, the age of a bull has nothing to do with the characters he transmits. One advantage of an old bull is the possibility of seeing some of his daughters, and in this way to judge the points that other of his offspring will probably have.

In selecting bulls it is best to consider his pedigree for several generations rather than to base judgment on the wonderful record of his dam, which, though a good cow, may just be a freak. Such a cow will generally transmit only the average qualities of her family.

Well-bred bulls nine years of age are considered still young enough for valuable herd improvement, and if they are vigorous and of good disposition there is no basis for discrimination against even older animals.

Urges Pure-Bred Stock

By R. B. Rushing

THE man is wise who always uses a pure-bred registered male in breeding any class of farm stock. Experience teaches me that this is especially true in improving the farm dairy. A good cow, bred to a pure-bred bull, of known heavy milk and butter producing stock, is sure to bring progeny as good or better than the mother. Constantly following this method of procedure is bound to improve the herd.

I started with the best milkers on our farm and bred them up, replacing them with the better of their progeny whenever opportunity presented. These have

in turn been bred to pure-bred sires and I have found much pleasure in this upward progress.

Every time I sit down to milk a cow and get a good flow of milk I feel pleased with my efforts in building up not only a good herd but a better herd, combining a greater degree of quality and quantity each year. Also, when the cream is sent to market, and every month when the check comes back, I see that it is a little bigger than the same month last year. That also pleases me, and the wife is not displeased. She helps to milk and care for the milk.

Although she has no figures to show it, she claims that skim milk from cows that are high producers of butterfat is more valuable as chicken feed than the skim milk from the low producers. If you are discouraged with cows, try the progressive plan and see if you are not pleased before long.

Easy Silo Excavation

By A. W. Stone

IN CASTING about for a site upon which to build a silo, Asbury White, a Colorado rancher, hit upon the scheme of sinking it in a hillside as shown in the picture.

The trench was dug for the specific purpose of making the work of excavation easier. Instead of having to throw the dirt up over the edge, the workmen wheeled it out in barrows, with a downhill push all the way.



The doorway in the silo simplifies the work of excavation and also the removal of silage when it gets low

A doorway was then constructed in the silo, connecting with the trench. When the ensilage in the structure gets low it can be taken out of the doorway, thus saving a large proportion of the labor.

A Year's Ice Supply

IN a discussion of the farm ice supply, F. M. White, a Wisconsin engineering expert, gives these pertinent facts:

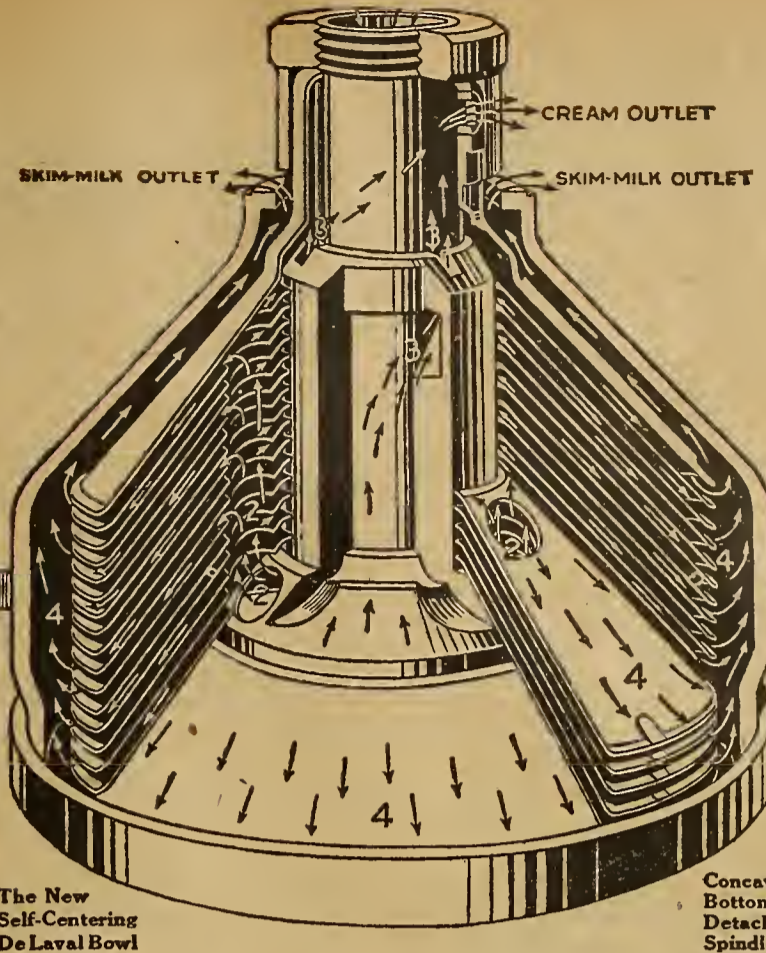
From three to five tons of ice are enough for liberal household use by the average farm family.

One ton of ice occupies 35 cubic feet, but in planning an ice house allow from 40 to 50 cubic feet to the ton to provide for plenty of insulating material.

For use in the dairy allow 1,000 pounds of ice to the cow for cooling cream and 2,500 pounds to the cow for cooling milk.

An ice house costs from \$75 to \$250, depending on the size and kind of construction. On some farms the loss of fruits, vegetables, meats, and dairy products in a year would almost build an ice house.

A TWELVE-BOTTLE Babcock tester is a convenient size for testing the milk of six cows or more.



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Crops and Soils

Does Liming Pay?

By V. Ross Nicodemus

DOES liming pay? Well, I will tell you about a soil that I have been handling, or helping to handle, now for thirteen years, and have known it from close observation for at least seventeen years. I have talked to those who have known it for at least twenty-five years, and they say that no lime had been applied except what we have applied in the last thirteen years.

Thirteen years ago when we bought this farm very little or no liming had been done. In fact, there is about three acres of it that has not had any lime applied to it within that time. On these three acres clover will not grow, other field crops look sickly, and do not make the growth that one would expect from the way that they grow on soil treated in every way the same as this but limed a few times.

Last year a part of this field was fall plowed and limed during the winter. It was planted in corn and when the corn was cut one could see to the very row just how far it was fall-plowed and limed. This shows what the whole farm would be if no lime had been applied during the thirteen years that we have owned it.

In all, we have applied about 5,000 bushels of lime on this farm. Some fields have been limed as many as three times. Others twice, and some but once. On the limed parts the crops grow exceedingly well. Clover makes a good growth and alfalfa will grow almost anywhere. In fact, there is not a field on the farm that does not have some alfalfa growing in it. This plant now seems easy to grow, whereas at first we had to try the third time before we could get a stand. Lime, manure, good tillage, and drainage, if needed, will make any soil do its best.

Growing Horse Radish

THE growing of horse radish as a commercial crop is drawing more attention every year. Soil and climate conditions in portions of nearly every State are well adapted to its growth. Adjacent to most cities and many small towns may be found gardeners who make a specialty of grating and bottling this crop.

Horse radish is best adapted to a cool, deep, rich soil and a late growing season. It grows until cold weather and, because of rapid growth, frequently becomes a troublesome weed. It is perennial.

Horse radish is propagated from root cuttings, which should be smooth and straight and from four to six inches long. The tops of the cuttings should be placed from three to five inches below the soil. Horse radish should be planted 12 to 18 inches apart in rows sufficiently wide to permit horse tillage.

The crop is harvested by plowing out, washing, and grading the roots. It is necessary to grade the roots so that they will fit the grating machine. The price of horse radish varies greatly. An acre produces from two to four tons.



Firing and leaching cause the loss of much of the nitrogen and phosphoric acid in manure if left in piles under the barn eaves

Value of Mammoth Clover

By A. T. Morison

MAMMOTH clover, often called English clover, is a large variety of the common red clover, the two being so closely related that they cross readily when grown near to one another. It is commonly supposed to be more nearly a perennial than red clover, but in practice it rarely lives longer than the first year of cutting.

Mammoth clover is not commonly grown as a hay crop, as the coarse woody stems make the hay unpalatable for live stock. It has advantages, however, which commend it for use under certain conditions. As a clover to mix with timothy it is sometimes preferred because the two crops ripen at practically the same time. Medium red clover ripens approximately two weeks earlier, and if cut when ready some of the growth of timothy must be sacrificed; or, conversely, if left until the timothy has matured, the red clover is too old and much of its feeding value is lost. Mammoth clover also gives a heavier first cutting of hay than medium red, but rarely furnishes any aftermath, which second cutting of red clover produces the best quality of hay.

When grown strictly for green-maturing purposes mammoth clover may be preferred to medium red, as it produces more tops and its larger root system gathers slightly more nitrogen from the air. Furthermore, in porous soils it is more drought resistant, as its longer taproots can penetrate deeper in search of moisture.

Beside these advantages, mammoth clover has no points of superiority over the medium red, for which it should rarely be substituted.

When used it should be seeded in the same manner and at the same rate as red clover: eight to ten pounds per acre if used alone, or six to eight pounds with an equal amount of timothy. The timothy may be used in slight excess if desired.

A nurse crop, thinly seeded, should always be used, and the clover seed should be applied in the spring.

The Free-Seed Plan

By F. H. Valentine

APROPOS of rural mail delivery, parcel post, postal deficits, free government seeds, congressional franks, and a few other postal incidentals, how is this as an incident? When our rural carrier left the mail one morning last spring, I was chaffing him because his little wagon was so full of packages that he didn't have room to put his feet.

"But what do you think of this?" he said, and pointed to a mail sack which filled the space beneath his little shelf in front. It was nearly full—supposedly of garden seeds—and must have contained nearly or quite a bushel. It bore the frank of the Congressman from our district; hence, had been carried free from Washington. It was addressed to a retired actor who has a small place not far from us. The carrier tells me he frequently has similar packages for people on his route, and has received packages himself containing seeds enough for a whole neighborhood, though he has no use for them.

Farmers' organizations, agricultural papers, and other sensible agencies have been condemning this free-seed plan as well as other pernicious postal practices, for a long time back, but still they persist. Yet the postal authorities are continually harping on postal deficits, the loss in carrying periodicals at low rates, etc. And some people consider their arguments ample against the extension and improvement of the parcel post, which the people need.



Automobiles

Why Windshields are Inclined

By B. D. Stockwell

AN OHIO reader who is considering trading his car in toward the purchase of a newer model asks whether an inclined windshield has any advantages over a vertical one.

Most 1917 models have inclined windshields which have these advantages: Lights from a car coming from behind are not reflected in the driver's face, but are reflected downward.

There is less wind resistance and it makes possible a shorter top, thus reducing weight.

The driver's range of vision is increased and he can read street signs at close range without having to crane his neck outside the car.

The appearance of a tilted windshield as compared with a vertical one is largely a matter of opinion, though motor car designers for the most part consider the inclined type more attractive.

About Bumpers

A CAR owner in Iowa asks for information about bumpers, and wishes particularly to know whether they are of enough value to justify carrying their extra weight.

Bumpers are most needed by cars



A front bumper is of value chiefly for protecting radiator and lights

that are obliged to travel a great deal in city traffic. They afford protection from the careless driving of others, and are even more important in the rear of the car than in front. A careful driver is not likely to run into a vehicle, but amid the constant stopping and starting of traffic he has no assurance but that sooner or later some careless driver behind him will fail to stop in time.

When a car is used mostly on country roads, I question their practicability. They add weight, are of slight value in case of an accident when traveling at high speed, and are frequently in the way when you have occasion to oil the springs or work close to the car. They encourage some car owners to be careless in their driving. The chief value of bumpers to a person living in the country is to save the radiator and lights from injury when encountering stock on the road.

Circus Motorized

A PROMINENT circus corporation has purchased one hundred 3½-ton motor trucks and a large number of 2½-ton trailers. Specially carved bodies are being made for them and the plan is to carry all of the animals, including camels and elephants, as well as tents and general luggage.

The circus will travel entirely by truck, thus being independent of railway schedules. The success of motor trucks under the trying conditions of modern warfare has convinced the circus owners that motor transportation will solve many problems connected with circus management and will offer no difficulties that cannot be overcome.

Auto Registration

HERE are some interesting facts contained in a new government circular entitled "Automobile Registration, Licenses and Revenues in the United States."

There is an average of slightly more than one motor car for each mile of rural public road in the United States.

The average registration fee collected in Vermont last year was \$18.10 per motor car, while Minnesota charged but \$1.50 for a three-year period.

Texas charged 50 cents for perennial registration, the cheapest rate of all States except Wyoming, which required no registration whatever.

Various scales were used in other States. California charged 40 cents per horsepower. Florida charged according to seating capacity. Registration for a two-passenger car was \$3, and a seven-passenger car \$10.

West Virginia and Arkansas charged a flat rate of \$10 for all motor vehicles, Delaware, Wisconsin, and Kansas \$5, Nebraska, North Dakota, and South Dakota \$3, Montana and the District of Columbia \$2.

Vermont, which collected the most money per head from automobile owners, charged \$1 per horsepower for the first registration, 75 cents per horsepower for the second, and 50 cents per horsepower for all subsequent registrations.

In Alabama the probate judge collects the fees; in Idaho the state highway commission takes it through the county assessor. In Mississippi it is the state auditor, in Texas the county clerk, but in most other States either the secretary of state or the commissioner of motor vehicles takes the fees.

In spite of this varying scale the registration of motor cars in the United States has increased 5,000 per cent in the last ten years.

Traveling Steep Hills

SOME drivers otherwise skillful are frequently at a loss to know how to proceed when their car refuses to climb a steep hill. Going down a steep hill safely is also something of an art. Nearly all standard makes of cars have enough power to climb the ordinary steep hill, but if the gasoline tank is low down and only partly filled, the gas may not feed into the carburetor.

In such cases you have two alternatives—either get more gasoline, or turn the car around and back up the hill. On steep winding hills which you are climbing on low gear, use the horn liberally as a warning to others who may be coming down the hill. On low gear it is difficult to turn out quickly to avoid a rapidly descending car.

The safest method of going down an ordinary steep hill slowly is to allow the emergency brake to drag slightly, and also use the service brake. On very steep hills throw off the ignition, put the car into low gear, and the engine will act as a brake. If this is not enough, use the emergency brake just enough to control the descent.

Explaining Sleeve Valve

THE sleeve-valve type of motor has been used for some time on expensive automobiles because of its quiet action, and has only of late been used on medium-priced cars. The construction in no way changes the principle of the automobile motor. Sleeve valves simply provide a different means of controlling the intake of fresh gas to the explosion chamber and the exhaust of "dead" gas from it.

The sleeve valves are round shells of cast iron which slide up and down between the cylinder wall and the piston. There are two of these sleeves in each cylinder, one working within the other. The fresh gas is admitted and dead gas expelled through openings in the sleeves. As the sleeves slide up and down, these openings come together and form ports through which the gas has free passage.

The sleeves are raised and lowered by connecting rods from an eccentric shaft, which in turn is operated by the crankshaft in about the same manner that the eccentric shaft is operated in a poppet-valve motor. The sleeves move only a short distance, in most cases less than one inch. There are no cams or springs, and the valves seldom, if ever, require adjustment.

The sleeve-valve type of motor is said to be immune from the disadvantages of carbon deposit, for the carbon acts as a lubricant to the sliding surfaces of the sleeves. There are no intricate small parts to wear and get out of order. Any number of cylinders may be used.

This type of motor may have either battery or magneto ignition, and the cooling system may be either thermosiphon or pump cooling.

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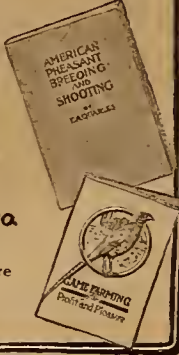


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Water-Glass Eggs

By J. T. Raymond

WATER GLASS provides a way for wide-awake poultrymen to compete successfully with the cold-storage interests. Water glass has received so much publicity the past three or four years and people understand so well its efficiency as a preservative, that it is not difficult to sell water-glass eggs. On several markets the past winter the writer noted them, generally put up by local poultry keepers. They were sold by the stores at a little better than Western or cold-storage egg prices. Usually the storekeeper bought them in case lots.

Water glass does not preserve eggs indefinitely. For that reason there should be no lost time, after they are lifted from the solution, in getting them to the consumer.

Even in small towns there is a ready market for these eggs. There are weeks at a time in New England when fresh eggs are above 45 cents a dozen retail. Then it is that cold-storage eggs find their heaviest sale. The average purchaser would much rather have a water-glass egg put up by a neighbor, an acquaintance, or a townsman, than a "case egg," as the cold-storage article is commonly called.

By putting down eggs in water glass during the spring and summer, the poultry keeper gains from six cents to perhaps more than ten cents a dozen. Water glass now may be bought in all grocery and drug stores. Directions for its use, supplied usually in printed form by the dealer, are extremely simple. The investment for containers need not be great; the expense for water glass is a small item. Before putting the eggs down, the poultry keeper can ascertain readily just who is going to buy them the coming winter, and in what quantities.

The Slant of a Hen's Tail

By B. F. W. Thorpe

THE sticklers after fancy exhibition points in poultry, who consider the slant of a chicken's tail and exact feathering according to a hair-splitting standard the chief end in the life of the bird, are sometimes heard arguing that continued breeding of the double-purpose breeds like the Rocks, the Reds, and Wyandottes will result in light-weight, below-standard stock.

Undoubtedly this is so if the breeder takes no steps to guard against such reduction in size, just as is the case with heavy-milking strains of Short-horn cattle and heavy-fleecing breeds of sheep.

But may I ask what breeders' brains are for unless to mold his particular strain of chickens, cows, sheep, hogs, or horses to meet his desires? And let me cite an example where the breeder's brains have been used for the control of his stock. A strain of Barred Rocks, line-bred for over a dozen years with practically no out-crossing for over half the latter part of that period, still

"throws" a large portion of progeny that is standard weight. A pullet of this strain, when only six months old, last fall weighed eight pounds, and at that age had already laid over 30 eggs.

As additional evidence allow me to cite my own Barred Rock flock of similar bred-to-lay breeding. The majority of my present breeding flock of two- and three-year-old hens in laying condition now weigh from eight to nine pounds each, and their average egg record is but slightly below 200 in their pullet year. The grandmother of these hens was not trap-nested during her first and second years, but laid 213 eggs in her third year and 179 eggs in her fourth year of production. This hen was full standard weight and had nine years of bred-to-lay breeding behind her.

My Start with Pure-Breds

By Frances E. Boord

I BOUGHT 15 pure-bred hatching eggs for a start in better poultry. Some of the eggs proved infertile, and some were broken during the incubation. I got only three chicks. Wrote the poultryman, and he sent me two more settings for the price of one, but I got only 14 chicks from 30 eggs. I raised only nine chicks from the 45 eggs. I kept the best cockerel and four hens, advertising the others. I received orders for all I had to sell and more, also some settings of eggs.

Even with such poor hatches I more than paid for the settings of eggs and their transportation, besides having breeding stock enough to raise a large flock the next season for my own use.

When I sent for the first setting of eggs I didn't know that eggs could be sent by parcel post, so paid expressage on them. The next two settings came by parcel post, the postman handing them to me at the gate, and the postage was just 10 cents for the two settings, coming from Illinois to Missouri.

Pheasants—Good or Bad?

SHOULD farmers favor the introduction of ring-necked pheasants on farm lands? There are now persistent efforts being made by some game officials and sportsmen to introduce these game birds on a large scale into States where they are practically unknown. For a number of years ring-neck pheasants have been multiplying in some of the Pacific Northwest States and British Columbia. They have also been introduced in a few communities in New York, Massachusetts, Indiana, and Kansas, and are proving hardy and well able to take care of themselves. These pheasants are without question beautiful birds and furnish sportsmen excellent hunting. And in regions where little grain and cultivated crops are raised they may not prove to be a pest to farmers.

But in grain-growing and trucking communities it appears that the ring-necked pheasants are making trouble by digging up newly planted corn, truck, and garden seed, including beans, peas, melons, cucumbers, pumpkins, squashes, as well as sprouting small grass. Also, at harvest time they are proving troublesome.

Examination of the craws of pheasants killed during the seeding and harvesting seasons showed over 30 per cent of the contents of the craws to be made up of grain. There were also found many harmful insects and weed seeds.

To be safe, farmers should oppose the introduction of ring-necked pheasants unless they are assured the right to kill them on their own farms at any season when they are found to be destroying crops.

Sex of Day-Old Chicks

By S. Thorne

THE Barred Rock and a few other particolored breeds have the advantage when it comes to determining the sex of young chicks when just out of the shell. Quite often buyers want to order all pullets or all cockerels, when raising chicks into layers or for broilers, and are willing to pay some additional to the price when such determination can be made before the baby chicks can be shipped.

Experienced observant poultrymen, familiar with the particolored breeds, can select the sexes as soon as they are out of the shell, in the case of several breeds. The sex of Barred Rock chicks can be told with a reasonable degree of accuracy since the pullet has a dark willow-colored beak which is sometimes streaked with black. The young cockerel chicks have bright yellow legs and beaks, and the head is coarser and the eyes more prominent. The pullets are finer in bone and the cockerels are a gray or slate color of a lighter shade than the pullet. The white spot on top of the chick's head and the white tip on the wings are more noticeable on the pullet, due to the contrast of the deeper dark shade. It is only for the first two or three days that these evidences of the sex of the chicks remain noticeable. A little later they all take on the characteristic blue color and the beak and legs of the pullets fade out to yellow. Most poultrymen who have given attention to determining sex of baby chicks find it harder to distinguish male and female chicks among the other particolored breeds and varieties.



Geese enjoy running water, but they will thrive without it

Our Winter Egg Income

By Mrs. William Smith

WE MAKE a practice of keeping a flock of something over 100 hens on our little truck and poultry farm. For lack of room they are kept confined almost entirely. Here is just a brief showing of what our present flock of layers—130 pullets and 10 two-year-old hens—did during the late fall and up to February 1, 1917, the period when so many flocks are loafing on the job.

The earliest hatched pullets began laying about the first of October and the eggs laid just about paid the cost of feed for the entire flock during that month. November found them doing much better. In December they returned us a nice profit. In January they laid 1,600 eggs, which sold for 50 cents a dozen, and as I write (February 8th) they are averaging about 65 eggs a day.

Our flock has good but not "fussy" care, comfortable quarters, and the feed that laying hens require. Any flock fed for laying handled in the same practical way cannot help laying well in the pullet year after they are once matured.

Fresh Fish Flavors Fowl

By Jennie R. Thurma

THE editor desiring personal experience relative to feeding hens as set forth in an article published in December 16th issue of FARM AND FIRESIDE, I am led to write the following:

A young member of my family, being quite a successful fisherman, last season made large catches of eels and other fish. He cleaned them before selling, hence there was a large quantity of offal.

This he chopped up fine and fed it, when perfectly fresh, to the chickens, young and old, which they ate with avidity, seemingly preferring it to any other kind of feed, never tiring of it, although sometimes they would get a fish meal six days out of seven.

One day I was cooking a chicken when my niece dropped in. She sniffed and said: "Why, Auntie, are you having a fish dinner on Sunday?" I answered "No," and wondered what she was alluding to. When we commenced dinner the mystery was solved. The chicken was flavored with fish—so much so we could scarcely eat it, which goes to prove that too much fish, when fresh at least, will surely impair the chicken flavor. However, I think that a small quantity fed occasionally would be good for the flock.

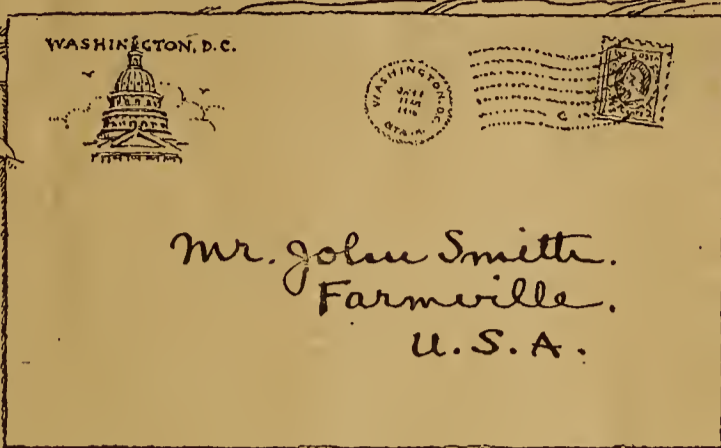


This picture shows comparative size of Plymouth Rock and pheasant eggs. Sportsmen want pheasants distributed throughout the country. Will farmers and pheasants pull together?

Universal Military Training

What Its Adoption Will Mean to America and Her Young Men

By JOHN SNURE



WASHINGTON, D. C.,
April 9, 1917.

SHALL every boy be trained to be a soldier? Or shall young Jones be trained to be a soldier, while the Smith boys and the Brown boys and the Scott boys and the rest of the boys in the neighborhood steer clear of soldiering and stick quietly to the arts of peace?

This question—whether or not the United States will adopt universal military training—will be one of the liveliest and most important problems before the extra session of Congress. The more serious the German crisis becomes, the more it will be forced to the front, and the more vigorous will be the demand for the training of all youth alike. However, leading Senators and House members have not hesitated to assert that, regardless of the existing controversy with the German Government, the public will have to face and deal with the wide-spread agitation for a new democratic army in which every young man in the country is able to serve to replace the present army run by an aristocratic group.

If the country is going to have universal training, the problem comes right home to every fireside, and everyone ought to study it and become informed as to just what it means. It means that the young man when he reaches a given age, whether he is from the country or the city, from the farm or from the office, must learn how to use a rifle, how to march, drill, pitch a tent, care for himself in camp and in the field, and to do well those tasks which are exacted of the soldier.

He would be away from home and under training, with thousands of young men of his own age, under strict and rigid discipline, a discipline that would look not only to his training physically and in the military drill, but also to his moral well-being, for it must be understood that if Uncle Sam takes the finest boys of the nation away from home to train them as soldiers for six months or eight or ten months, as the law would decide, he is not going to overlook training their characters as well as their bodies.

In order to inform readers of FARM AND FIRESIDE more fully on universal training and what those who advocate it believe to be its advantages, I talked personally to Senator Chamberlain of Oregon, author of the Chamberlain universal training bill, and chairman of the Senate Military Affairs Committee. I asked him among other things why he believed universal training would be of benefit to the country as a whole, and to the rural life of the nation in particular.

"I don't expect my neighbor to pay my taxes. Why should I expect him to volunteer to do my military service?" That is the way Senator Chamberlain looks at it.

"I BELIEVE universal training would be a most excellent thing for the young men of every occupation," said Senator Chamberlain. "It would be a good thing for them whether they are on the farm or in industrial, commercial, or professional life. I think it would be particularly beneficial to young men engaged in agricultural pursuits, although the reasons why I believe so are to a large extent applicable to all young men.

"In the first place, there is no question that young men in the country and in agricultural pursuits get more out-of-door life and exercise than any other class of young men. Consequently, under ordinary circumstances, they are physically the strongest and best of our population. But their outdoor life and exercise do not tend to develop them uniformly and along the lines most apt to lengthen life and, through a long period of years, to insure the best health. Military training would correct the deficiencies found in the physical development of these young men.

"Let us remember that a large share of the training which would be given under a system of universal military training would be physical, athletic, for

the purpose of giving the young men sounder and better bodies. Chest and shoulder development, right posture, and all that tends to lengthen life would be more readily acquired under the right sort of military training than in any other way.

"To illustrate what I mean: I had sent to me a short time ago photographs of two young mountaineers of North Carolina, one picture taken when they enlisted and one after six months' service on the border. The first picture showed splendid physiques, but an entire lack of proper chest development and proper carriage. The second picture showed the same young men standing straight, with chests and shoulders fully developed and holding themselves as erect as young men should be.

"This would characterize the condition, not of a few young men, but of practically 400,000 of them, trained for six months under universal training each year.

"UNIVERSAL training would develop a discipline which is largely lacking among young men generally, respect for authority and love of law and order—qualities which are recognized as absolutely necessary for young men, whether they remain on the farm or engage in industrial and commercial life.

"To demonstrate this, I call attention to the fact that the John Wanamaker establishments in Philadelphia and New York give all their young men a military training as a part of their business training, and have done it for twenty years. The representatives of these institutions testified before the Military Training Committee of the Senate that this training added to the efficiency, steadiness of purpose, and general worth of their employees. And I may say that the training is not confined to young men alone. A system of physical training is given all the young women employed in these establishments, and it, too, has proved beneficial.

"This leads me to say that if this country enters on the universal training of its young men it will naturally follow that the young women, too, will sooner or later be trained. This will not be military of course, but athletic.

"It seems to me that for reasons of national health and hygiene and better physical development alone the benefits of such a training of our young men would be immeasurable. If to this is added the athletic training of our young women, the benefits would be incalculable. In our national doctor bill alone the saving would be enormous.

"While universal training would cultivate a patriotic spirit and love of American institutions, it would also instruct in the laws of health and sanitation, because these things have become absolutely vital in the existence of the modern army. And whether the young man were on the farm or in other walks of life after the term of his training, he would have acquired a knowledge of how to care for himself that would be of great value.

"When sick he would know what precautions to take, and he would learn how to guard against disease and how to observe the rules of hygiene and sanitation. It is impossible to measure what such knowledge distributed among nearly a half million of our young men each year would mean to the nation, to the better health and sanitation of both the country districts and the cities.

"The fundamental gain, of course, is that universal military training would teach the young men of the nation how to defend their country against an enemy in case the United States were invaded or attacked. It must not be forgotten that the consensus of expert

opinion everywhere is that it takes a year of training at least to make a soldier. But six months' intensive training would go far to fit young men to defend our country and its institutions, or to protect themselves when duty called. It is not proposed to put military training in the schools, but to take young men at the age of 19 and give them at least six months' training. When that has been performed they will have done their bit, holding themselves in readiness for military duty, should the country need their services and call for them.

"That call can come only from Congress, through the representatives of the people. It would be a great mistake for the United States, if involved in war, to send untrained men to meet trained enemies if it can be avoided. To do that would invite disastrous slaughter."

Senator Chamberlain has sought to apply in his bill the good features of the systems of universal training in such countries as Switzerland, Australia, and Argentina, nations where training of all the young men has not fostered the spirit of militarism but has worked in the opposite direction. One of the important things he has in mind is that as the system of universal training develops, vocational education shall go with it. He would give the young man a chance, while training in military matters, to receive instruction, by lectures and in other ways, in the vocational subjects that interested him, such as agriculture or the mechanical arts. Thus training for military proficiency and civil life would go hand in hand.

If the United States is to have an army and a navy—and most people admit that it must have them until all nations disarm—it must organize them either on the volunteer system or on the principle that every man who is physically able owes service to the country in equal measure.

With the navy the question of preparedness is largely one of the construction of warships. The men to man the navy can be found under the volunteer system in normal times or times when the danger of war is imminent. The army presents an entirely different problem. The number of men that will be needed for the naval vessels is but a small fraction of the men needed for the army in case of war with any great power. Under the existing volunteer system it has been found impossible to get the number of recruits needed for the army, and a small army at that. In the critical trials of the United States in past wars it has been necessary to resort to the draft or conscription, thus forcing men to do military service. This was necessary both in the Revolutionary and the Civil wars, so that compulsory military service is not new in this country. In both cases, of course, it was untrained men that responded to the call of the colors.

The issue as it stands now gets down to this: Is every young man going to be trained to do his share in defense of his country when the necessity arises, or is he going to "let George do it"?

Don't fail to write FARM AND FIRESIDE what you think about the Chamberlain plan.

Just a Reminder

By A. R. Conrad

WHEN you have hired help, you will be busy of course, but see if you cannot find time to run out and pick a few flowers for the dinner or supper table. It may help somebody to think better thoughts than ever before. A flower has its mission. You may help it to do its work in the heart of somebody.

How much better the garden looks all cleared of frames and stakes after the last stuff has been taken off. Store all such things away. Another year is coming.

Start the battle against the fly and mosquito by constructing a fly trap, putting in the screens, and destroying breeding places. You will not regret it.



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The Blue Envelope

It Loses Its Place of Safety in the Heroine's Hat

By SOPHIE KERR

PART IX

HERE was a little rough shed across the track—a freight house, probably—and behind this I ran as the train thundered in. If Mrs. Davis did not find me among the crowd at the station she would have to stop and ask questions, and I hoped that the surly station agent and the stupid country crowd might be respectively surly and stupid enough to baffle her until the train got away. But I had no intention of letting that train go without me, and so I ran down to the other end of the shed and peeped around. The last car was right in front of me and it was well below the station. So I ran forward, reached up, and pulled myself onto the lowest step, at the very back, and as I did it the train slowly started. The door was open, so I hurriedly walked into the car and shut the door behind me, only leaving a crack to see the station as we went by.

My heart was beating so hard it seemed to me it would jump out of my body. I could hardly hold myself still to look, and my hands shook so that I could not keep the door steady. It was all over in an instant, though, so quickly that I didn't have time to think much about my emotions. Thank Heaven, Mrs. Davis was on the platform, waving her arms and apparently shrieking at the station agent, who looked bewildered and more surly than ever. He was shaking his head. That was all I saw, for the train put on speed.

Then I just fell into the nearest seat. If there'd been anyone with me I'd have had hysterics, then and there, but it's astonishing how well you can control yourself when there's no sympathetic person near! I was shaky and my heart still pounded, but the blue envelope and I were on the high road to freedom. I felt sure that Mrs. Davis wouldn't dare wire to apprehend me, though she might telegraph or telephone a warning to the rest of her gang that I had escaped. I hoped that the station agent would show her my telegram to the chief of police.

When the conductor came through the train he stopped and looked at me very interestedly.

"I didn't see you get on," he said.

"No," I said, "I almost missed the train and jumped on at the back the very last minute."

That explanation seemed satisfactory, though he might have thought it odd that I had a ticket since I had almost missed the train, but he was rather a dull-looking old fellow and so he punched my ticket and went his way.

The train progressed very slowly, stopping at every little station, at every crossroads, it seemed to me. After the first few stations were passed I calmed down a good bit. I had been somehow expecting that Mrs. Davis would make trouble for me—send telegrams to intercept me or do something to harass and injure me, so that every time we got safely away from a station I would feel relieved and thankful.

We had been traveling an hour and a half, I suppose, when, soon after we had left a station, I noticed the conductor and the brakeman coming toward me. There was a telegram in the conductor's hand and he seemed excited.

"She's done it!" I said to myself, and braced myself for the worst. I didn't know what I was going to do this time, for I didn't have a single thing to identify myself as Leslie Brennan.

The two men came on down the car directly toward me. They stopped beside my seat, and the conductor, looking first at the telegram and then at me, asked uncertainly:

"Are you Miss—Miss—Leslie—B-r-e-Brennan?"

"Yes," I said, thinking it odd that Mrs. Davis would have used my real name, and wondering what the trap might be.

The conductor scratched his head and looked puzzled.

"Well," he said, slowly, "I got a wire here saying I'm to look out f'r y' and see that you reach Philadelphia safe. It's signed by the sup'rintendent. Says to tell y' friends will meet you there and search is being made for Mrs. Davis and her associates, whatever that may mean," he added, squinting at the telegram.

Oh, the thrill of that announcement! I could have hugged and kissed that old man, and I wanted to cry, and I wanted to laugh, and I wanted to jump up and down, and I wanted to shout! I was safe! My telegram to Minnie or the one to the chief of police had given them the clue. They were hunting for me. I was protected. Three cheers!

I managed to thank the conductor coherently, and then I sat in that dirty old accommodation coach and reveled in my new sensations of safety and peace. Oh, how impatient I was at the slowness of the train! I wanted to get out and push it along the track—anything to hurry

What Has Gone Before

READ THIS, THEN READ THE STORY: Leslie Brennan, orphan heiress, is told by her guardian that her father wished her to earn her own living unless she is engaged at eighteen. At the same time she learns that her fiancé, Ranny Heath, only wants to marry her for her money, and breaks their engagement. She learns stenography, is hired by an eccentric inventor of explosives, and wins his confidence. On the day that he is to take his formula for sarnite to Washington, he is called to Toronto by the serious illness of his mother. Leslie is entrusted with the formula, but is kidnapped on the train and taken to a lonely farmhouse. She gives up to her captors a blue envelope containing a nonsense verse which she tells them is the formula in cipher. The real formula is concealed in her hat. She escapes from the farm and is just about to catch a train when she sees her captor coming up in an automobile.

it. It crept and crawled. It lingered and loitered, and if it had seemed to stop at every crossroads before it now seemed to stop at every telegraph pole. Never in the world was there such a slow-poke of a train as that one.

Yet even the slowest trains must arrive some time, and this was no exception. Of course it was late—but, then, no matter. It reached Philadelphia finally, and I was the first person out on the platform, and there—there was Uncle Bob—and Mr. Kennedy—and Minnie—and a strange man, all looking worn and anxious and distressed.

They all rushed for me, and I for them. Everyone seized me and, in the confusion I—well, I know I kissed Mr. Kennedy, and I think I may have kissed the strange man. He was a plain-clothes man sent over by the New York chief of police, I found out later. His name was O'Neill, and he had a heart-warming smile and a darling tang of Irish in his speech.

THEY all talked so fast and were so excited, and I was so excited too, that for a while I couldn't make it all out. At last things got a little straightened out and I learned:

First, that the telegram calling Mr. Kennedy to his sick mother was a trap to get him away. He would have gone on clear to Toronto, not knowing, but there was a wreck on the road three hours out of New York and his train was stalled. He was so anxious for his mother that he walked to the nearest town and got his sister on the long-distance telephone. As soon as he found out that his mother was all right, he suspected something. He telephoned to his own house in New York and found that I had already started with the blue envelope.



By permission of Vitagraph Film Company

"Here is the blue envelope, all safe and sound," I said, handing it to Mr. Kennedy

He got back to New York as soon as he could and commenced an investigation. The railroad people found out for him that I had gone off the train with a woman and two men, and that I had been represented to the conductor as the woman's feeble-minded—how furious that made me!—and incorrigible niece who was being taken to an asylum.

Of course, the police were called in; Uncle Bob was wired for; Minnie was told—and everything was simply boiling. But they were absolutely unable to trace me after I got into the motor there at North Philadelphia, and they couldn't find the car, either—Fischer had evidently taken care of that. My telegram to Minnie was the first intimation they had of my whereabouts and then, a little later, came the telegram to the chief of police. How they praised me for sending it! The plain-clothes man said it was the smartest thing he had ever heard of, and that I ought to be a detective. Of course, the police got in touch with the railroad people and had the superintendent wire to the conductor to take care of me. And they had rushed people out to Mrs. Kroll's to catch Mrs. Davis. (N. B. They didn't get her.)

Finally, when we had all talked until we were worn out and could do nothing more but just sit and look at each other—and oh, how good they all looked to me!—I reached up and unpinned my hat.

"Lend me a knife, will you, Uncle Bob?" I asked.

HE GAVE me his nice old-fashioned pocket knife and I began to rip open one of the loops of the velvet trimming while they watched me in amazement. I had sewed it very tight, but finally I got it open. Then I slipped my fingers inside and took out—the blue envelope!

"Here it is," I said, handing it to Mr. Kennedy, "all safe and sound."

He stood still and held it in his hand as if he were dazed.

"It's the first time I remembered—that," he said. "I was thinking—about you." And as he said it he raised his eyes and looked at me quite differently from what he had ever looked at me before. It embarrassed me, but I liked it too.

"How did you save it?" exclaimed Minnie. "I should have thought they'd have got onto the fact that you'd hidden it and frisked you."

So now I had something more to tell—how I had written "The time has come, etc." on my typewriter and put it into another blue envelope and passed it off for the real one.

"I told Fischer it was the formula in cipher," I wound up. And with that the plain-clothes man let out a regular war whoop of a laugh.

"Sure that beats all," he said, slapping his knee. "How did you ever in this round world come to think of that, Miss Brennan?"

"It's always done by the carrier of important papers in novels, on the stage, and in the movies," I told him. "The idea flashed upon me before I left the office."

He laughed about it all the time. "It takes us Irish," he kept saying, and even after we got on the train for New York he sat and chuckled to himself about how the people who had hired Fischer and Mrs. Davis must have worked at that silly verse, trying to get a formula for an explosive out of it. I don't think that plain-clothes man had had such a good time for months.

We had dinner on the train, and though it was night when we reached New York Mr. O'Neill wanted me to go to police headquarters to look through the pictures in the rogues' gallery for Fischer and Mrs. Davis. Uncle Bob and Mr. Kennedy and Minnie went along. Not one of them was contented to leave me out of sight for a second. I think they feared that I might be kidnapped again at any moment, though Mr. O'Neill said that the gang was probably making their getaway as fast as they could go.

I found Mrs. Davis in the rogues' gallery without much trouble, and what a record she had—confidence work, blackmail, all kinds of ugly things! Her real name was Sarah Dimling, and they told me that she was one of the cleverest and most dreaded women criminals in the country, and that I was very lucky to get away from her alive, under the circumstances. Fischer's picture was not in the rogues' gallery, and the detectives said that he was probably a foreign crook brought over here for the job.

It was very late when I finally got back to Mrs. Harris', and Uncle Bob said he thought I'd better come to his hotel, and that he'd feel safer about me if I were near him, but Mr. O'Neill told him not to worry, that I'd be protected from now on until they were satisfied all danger to me was past, and I must say I wanted to go to my little room and see my own brush and comb and tooth-

brush, and sleep in my own bed. I felt as if I had been away a thousand years when I went up those steps that night. Mrs. Harris was waiting for me, and a lot of the boarders, all so excited and so glad to see me, and they made a perfectly lovely fuss over me. It was dear of them, and I appreciated it so much—well, I almost cried.

Mr. Kennedy had been very silent ever since I gave him the untouched blue envelope, but when he left he said that he would telephone the first thing in the morning, and I was not to come back to work until I felt like it. He said it quite crossly, like a command. Minnie laughed when he had gone.

"It's all very well," she said, "for him to act peevish and indifferent now, but, believe me, he was some wild Indian when he thought you had been kidnapped."

"Oh, that was on account of the formula," said I. "Of course he'd be worried when he thought his formula was stolen."

"Oh, no," said Minnie dryly, "it wasn't the formula that ailed him—far from it." But she didn't say any more and neither did I. For, of course you know, I might only have imagined that—that he looked at me—well, in the way he had looked, or at least that he meant anything by it. But, anyway, I didn't forget it. And I still liked it.

[CONCLUDED IN NEXT ISSUE]

Poor Boy Who Rose

By Warren G. Partridge

THE kings of finance in America are every day coming from the ranks of the poor boys on the farms and in the factories. The other day in my city the directors of a big bank gave a dinner to the leading official, the president, in that banking institution. It was the fiftieth anniversary of his first day of employment. He began fifty years ago as a poor errand boy in that great bank, when he was only fourteen years of age. Now he wears the crown of financial achievement.

The president of the largest bank in the United States is Mr. Frank A. Vanderlip, and the name of the institution is the National City Bank of New York City. When that immense banking institution, with its hundreds of millions of dollars of business every year, wanted a president, where did they go for the man? Did they look for the son of some multimillionaire? Did they decide to choose some aristocrat, who was born with a silver spoon in his mouth? No. They selected a man who started on the lowest rung of the ladder.

Frank A. Vanderlip was once a poor boy who worked on a farm. He did not even work on his father's farm. But he wore blue overalls and toiled early and late as a common farmhand, and he worked hard for small wages, wherever he could get employment. But this poor boy had ambition, and he made up his mind that he could rise in the world by hard work and his own efforts. And later we find Frank as an apprentice in a machine shop. He made up his mind that by learning a trade he could rise more rapidly in the world. So he again wore overalls; and his face and hands were besmeared with grease and grime.

But by everlastingly improving his opportunities, by mastering all details of his job, by doing his level best in every position, by splendid industry and perseverance, and by absolute fidelity to every trust, he gradually rose in influence and power, until he was chosen to take the presidency of the largest bank in the United States.

And this is also remarkable: every officer of that great bank, with one single exception, made his beginning in poverty.

One of the vice-presidents was a poor boy who had earned small wages as a cotton picker in the cotton fields of Louisiana. Another vice-president be-

gan as a poor boy, and by hard study fitted himself in youth to become a teacher in a country school in Kansas.

Another officer in that bank was a poor boy in the city of Chicago, and earned money as a newsboy on the streets of that city. And other banks, and industries, and business houses could tell the same story of success. The newsboy of to-day is the banker of tomorrow. The railroad brakeman of to-day is the railroad president of tomorrow, and the schoolmaster of yesterday is the President of the United States to-day.

But such boys do not rise to thrones of power by luck or chance. Crowns are gained in the workshop of the world by the greatest sacrifices, by fidelity to duty, by the improvement of every opportunity and by hard work.

The Yellow Warbler

By H. W. Weisgerber

ALONG about the last week in April there comes from the Southland to the northeast corner of Ohio, along with a host of other migrants, a little yellow bird known as the yellow warbler, or summer yellow-bird.

This little warbler makes his presence known by a few sweet and simple "che-wee" notes that constitute its song, and which is uttered while he is hunting a meal of worms on the orchard trees. He visits the city trees as well as country orchards. And he and his little olive-green mate should be given a hearty welcome, for they remain with us during the summer and thus destroy vast quantities of injurious insects that infest the fruit trees. Then, too, the



yellow warbler is among the few warblers that breed here.

The common goldfinch, or wild canary, has black wings and tail marked with white, and a black cap. The yellow warbler is yellow underneath and olive-green above, with chestnut-colored streaks on the sides and breast. The beak, too, is small and slender, offering quite a contrast to the thick, sparrow-shaped beak of the goldfinch.

Answers to Puzzles

Puzzles Printed Last Issue

Cakes and Pennies

Carrie contributed 11 cents for 1/3 of the cakes, which must have cost 3 cents apiece. Therefore, Mary, who bought 4 cakes and ate 3/5, was entitled to 1 cent, and Jennie to the remaining 10 cents, since she contributed 7 cakes to the luncheon.

Curtilments

Dime, dine, done, earl, feed, fund, furl, garb, heron, huge.

Straight From Fifth Avenue

SUMMER clothes with New York dash and style. That's what the Fashion Editor has picked out for you.

There are bargains too—the next issue of Farm and Fireside will show them. That's May 5th.

You will surely want one of those snappy dresses, and you may want them all. There is a silk dress with the loveliest touch of gold embroidery! And a voile dress with just the newest sort of a fichu collar! A tub dress that is in the new sport style, but yet not too "sporty" for other occasions!

There are other things too, and some of the prices—just think of it!—are as low as \$1.

Here is a chance to put your shopping burdens off on the Fashion Editor. She will buy the clothes for you. Be sure to read her offer on the fashion page of the May 5th issue.

You Can Make Excellent Cake With Fewer Eggs

Just use an additional quantity of Royal Baking Powder, about a teaspoon, in place of each egg omitted.

This applies equally well to nearly all baked foods. Try the following recipe according to the new way:

CREAM LAYER CAKE

Old Way	New Way
1 cup sugar	1 cup sugar
1/2 cup milk	1 cup milk
2 cups flour	2 cups flour
2 teaspoons Royal Baking Powder	4 teaspoons Royal Baking Powder
3 eggs	1 egg
1/2 cup shortening	2 tablespoons shortening
1 teaspoon flavoring	1 teaspoon flavoring

Makes 1 Large 2-Layer Cake

DIRECTIONS—Cream the sugar and shortening together, then mix in the egg. After sifting the flour and Royal Baking Powder together, two or three times, add it all to the mixture. Gradually add the milk and beat with spoon until you have a smooth pour batter. Add the flavoring. Pour into greased layer cake tins and bake in a moderately hot oven for twenty minutes. This cake is best baked in two layers. Put together with cream filling and spread with white icing.

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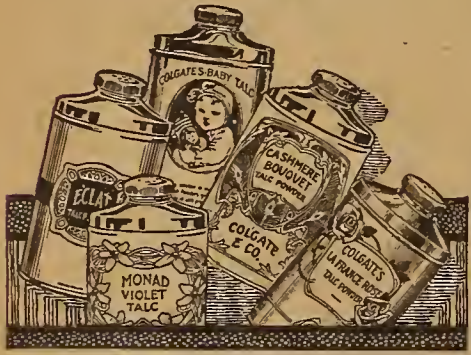
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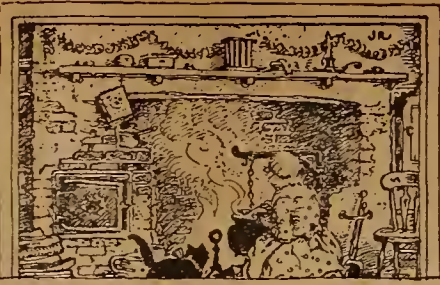
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Housewife's Club

To Clean Parasols

By L. C. Ahlers

THERE is no reason why the umbrella and parasol that have become too soiled to use should be discarded. With a little care the most dainty-colored parasol may be cleaned. White linen parasols and those which cannot be removed from the handle may be simply and easily cleaned by scrubbing with a small brush and soapsuds, then rinsing several times and put out to dry. The more delicate-colored sunshades require to be washed with more care, and should be removed from the ribs. A knife is best to use to snip the threads that fasten the covering to the framework. When loosened, slip off and wash in warm soapsuds. Rinse and hang in a shady place. Iron before the covering is quite dry, and replace on the ribs and sew in place.

The Kitchen Table

By Jane Macpherson

KITCHEN tables, like all modern household equipment, should be built and arranged so they will make for the most efficient work. There is a correct height for every kitchen table, as well as a proper place to keep it.

I have found that my work is easier for me when my table is 30½ inches high. This height is considered correct for women of 5 feet 5 inches in height. For a woman who is 4 feet 7 inches tall the table should be 27 inches from the floor. This makes a difference of 2½ inches in the height of the table for every corresponding difference of five inches in a woman's height.

If the tables measure too low they may be raised with wooden blocks or be placed upon a small platform. Drop tables, placed at the proper height, I have found very successful. They are made on hinges, with movable brackets beneath, so that they can be folded down against the wall when not in use.

The arrangement of the kitchen table with reference to the other fixtures is also an important point to be considered when working for domestic efficiency. In a large kitchen the work table should be placed in the center of the room, or as near the stove and sink as possible. It is often well to consider the number of steps required to walk from the table to the stove and sink when choosing this location. I have found, in most modern kitchens, that the best place for the table is between the stove and sink, or just at the right of the sink, where it will be convenient for dishwashing.

Our Economical Fruit Supply

By Mrs. Rose Bates

THE first fruit of the season is pieplant, and it is fine when cut up unpeeled, so that it has a spicy taste and pretty pink color. It is fine to can alone when grown sufficiently to make it profitable to pull it. Strawberries come next, and are so delicious when fresh that a large amount is needed to have any left to can.

Many people cannot eat canned strawberries—they seem so rich and strong—but with the addition of pieplant they are all right. A cupful of strawberries to a two-quart can of pieplant is good and has a nice flavor of strawberry and a pink color. Many quarts of fruit can be added to the fruit shelf by this combination.

Gooseberries and currants are ready next. Both are more trouble to prepare for canning than some others, but both may be extended by the use of pieplant. The seediness of the currant, which

many people object to, is bettered by adding at least half pieplant.

The delicious raspberry is next in order. If I had quantities of raspberries I should never put up a can without at least a good stalk of pieplant to each quart. The raspberry alone has not enough juice, and is much bettered by the acid of the pieplant, and the slightly laxative properties of the latter are needed in all our winter fruits. A cupful of raspberries to a two-quart can of pieplant will make a delicious combination of brilliant red color. You will never tire of this combination.

The cherry and the mulberry ripen next. We use pieplant with our cherries. Mulberries are excellent with the addition of enough pieplant to add the sourness which they lack. Mulberries are easily grown and are gathered by shaking off on canvas spread under the trees.

The juice of wild grapes is an excellent addition to other fruits, such as pieplant marmalade, apple butter, and apple jelly, giving a good flavor and tempting color. Not much grape juice is needed, as the color is so deep.

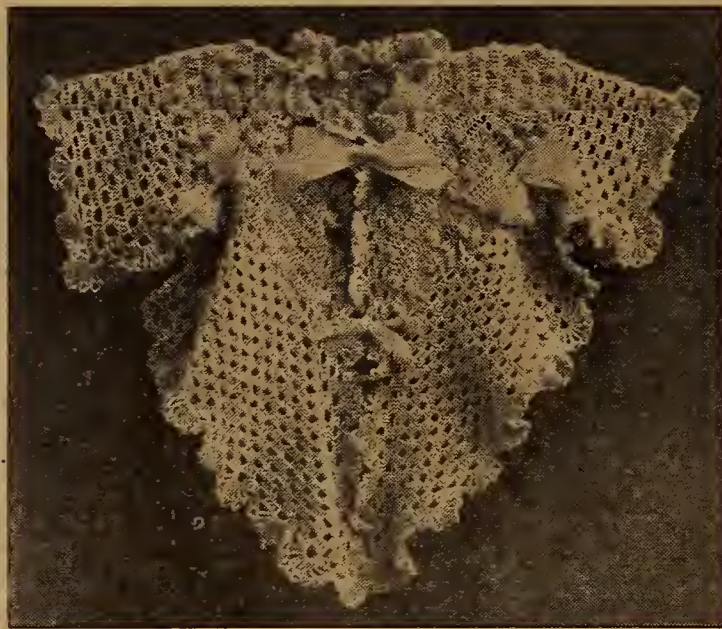
The Useful Food Chopper

By Monica Kelly

MANY women use their food choppers only once in a while, but mine works almost every day, for I believe in making the most of a good tool. Grinding meat for Hamburg steak, hash, sausage, croquettes, and mince meat is almost impossible without a good food chopper, but this is by no means the only use to which I put this useful little machine.

When a recipe calls for crushed fruit and the juice and pulp need not be separated, I run it through the chopper, using a rather fine knife. The result is a creamy pulp which will blend well in making Bavarian cream or frozen-cream desserts, and there will be no icy lumps of fruit. I flavor ice cream occa-

Baby's Crocheted Jacket



IF YOU are wondering what to give the baby, why not make this dainty and very practical jacket? For complete directions for making send four cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

sionally with stale macaroons or with stale brown bread or nuts ground up in the same way.

It is easier to grind up dried bread than to roll it fine, and bread crumbs from fresh bread are more easily made by putting the bread through the chopper than by rubbing it on a grater. Nuts ground up fine in the chopper make splendid sandwich fillings. I also use my chopper almost every day for preparing scrap meat, etc., for the chickens.

To make it stand solidly on my zinc-covered table I always put a piece of sandpaper under the legs where it clamps on the table. This prevents it from slipping.

Caring for Callas

By Lillian Trott

CALLAS like warmth, plenty of food and drink, and support by staking as the stalks increase in stature and stateliness. Plant in equal parts black muck, garden loam, and old, mellow barn dressing. Lacking the muck and loam, be sure to furnish the compost that has ripened a year or more, and repeat with more every year, for this queenly flower is a rank feeder. Give warm water every day, and keep near fire or on a hot brick in winter. Spray with cold suds for pests on the leaves. Have good drainage, and in summer turn on side to rest two months.

Sausage, Stews, and Hashes

By Mary Eleanor Kramer

STEWs are made from meats that have not previously been cooked—that is, as a usual thing. Hashes are made from left-over cooked meats, while sausage may be made of either cooked or uncooked meats. Fortunately, in these days of high prices all these dishes may be made of the cheaper cuts of meat, and all are quite as wholesome and appetizing as the most expensive meat dishes, if they are properly prepared.

HUNGARIAN STEW—This is a favorite with those who are very fond of onions. Two pounds of the cheapest cut of beef cut into small pieces form the foundation of this stew. Slice a small onion, and fry this with the meat in a little suet, butter, or drippings until the meat begins to brown, then put a layer of the meat in the kettle, and cover with a layer of thinly sliced onion, continue in this manner, alternating the layers of the meat and onions until all the meat has been used, now cover with cold water and gradually bring to the boiling point. When the stew is bubbling turn into it two cupfuls of canned tomatoes, but do not stir. Simmer for two hours, tightly covered, then add some potatoes cut into half-inch slices, or very small potatoes may be used whole, cook for half an hour longer and serve. This stew is sometimes called Hungarian Goulash, and is a favorite in cities in the Hungarian restaurants where it is properly prepared.

MEXICAN MEAT BALLS (HASH)—One pound each of pork and beef, ground rather fine, one third as much bread crumbs as you have meat, one egg, one small onion chopped very fine, one tablespoonful of chili powder, and salt and pepper to season well. Soak the bread in water, then squeeze quite dry, add it to the ground meat, beat the egg until light, then add it and all the other ingredients to the meat and bread, mix very thoroughly, and form into small balls. Have ready a sauce made of one quart of tomatoes, one chopped onion, a spoonful of chili powder, and salt and pepper to season. Simmer until the onion is cooked, then add the meat balls to this sauce, and cook gently for about an hour. Remove the meat balls to a deep, hot dish; thicken the sauce with a little flour, stirred smooth in cold water, pour the sauce around the meat balls and serve.

SAUSAGE ROLLS—These baked rolls are very appetizing and are easily prepared. Make a baking-powder biscuit dough; roll out in a sheet about half an inch in thickness, and cut into small squares. Have ready any good sausage mixture—pork, beef, or a mixture of left-over meats, well seasoned. Form into small cakes, place a cake in the center of each small square of the dough, bring the ends to the top

and press together firmly; place in a buttered baking tin, the edges not touching, and bake for about twenty minutes. Serve hot, with or without gravy.

POTATOES STUFFED WITH SAUSAGE—Select small link sausages; fry until almost done. Have ready some large potatoes; wash well, and wipe dry. Cut from the end a liberal slice of the potato, and then with an apple corer make a hole through the potato. Insert a link of the sausage in this opening, fasten the end of the potato in place with a sharp tooth pick, put into the oven, and bake until the potato is tender. These are delicious.

SHEPHERD'S PIE—This is really a variety of hash. Cut cold meat or meats of mixed kinds into small pieces; put over the fire in a little hot drippings and fry until all is well seared and brown. Add one tablespoonful of flour, stir about with the meat until browned, then add a cupful of sweet milk, seasoning with salt and pepper. Cook until a smooth sauce is formed about the meat. Butter a baking dish, fill with mashed potatoes which are hollowed out to form a deep hole in the center, though with a bottom of the potatoes; pour the meat and sauce into this opening, cover with more of the potatoes, and set in a hot oven until the potatoes are nicely browned; then serve at once in the dish in which it was baked.

For the Summer Outfit

Slip-on Clothes Easy to Make and Launder



A dress for sheer materials—No. 3280



New rompers for boy or girl—No. 3283



A tailored dress for the tiny boy—No. 3279



Small boy's coat and hat—No. 3284

No. 3280—Child's Dress, Sberred Front and Back. 6 months, 1 and 2 years. Pattern, fourteen cents

No. 3283—Child's Rompers with Side Closing. 6 months, 1 and 2 years. Pattern, fourteen cents

No. 3279—Boy's Box-Plaited Dress with Bloomers. 6 months, 1 and 2 years. Pattern, fourteen cents

No. 3284—Child's Coat with Hat. 6 months, 1, 2, and 4 years. Pattern, fourteen cents

No. 3264—One-Piece Slip-on Apron. 32, 36, 40, and 44 bust. Pattern, fourteen cents

No. 3275—Dress with Vest and Collar in One. 34 to 46 bust. Width, two and one-fourth yards. Pattern, twenty cents



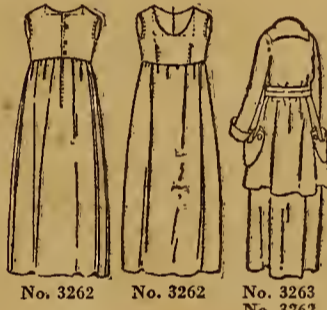
One-piece apron in slip-on style—No. 3264

TAKE advantage of these cool days and prepare for the warm ones. Make up some of the summer clothes shown on this page. They are the slip-on, comfortable kind every woman likes. The patterns can be ordered from Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

No. 3243—Box-Plaited Dress with Sleeves in Two Styles. 36 to 50 bust. Width, two and three-fourth yards. Pattern, twenty-five cents

No. 3263—Russian Blouse with Adjustable Collar. 14 to 18 years. 34 to 42 bust. Pattern, fourteen cents

No. 3262—Gathered Skirt, Attached to Lining. 14 to 18 years. 34 to 44 bust. (Order by bust measure.) Pattern, fourteen cents



No. 3262 No. 3262 No. 3263 No. 3262



No. 3275 No. 3264



One-piece dress of any fabric—No. 3275



Especially designed for the stont woman—No. 3243



Sport costume for young woman—Nos. 3263-3262



No. 3280



No. 3283



No. 3279



No. 3284



No. 3243

BARGAINS IN SUMMER CLOTHES will be shown in the May 5th issue of FARM AND FIRESIDE. Watch for the fashion page.

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HOW OLD IS "CUDDLES" ?

$$\begin{matrix} \frac{1}{3} \text{ of } 6 \\ + \frac{1}{2} \text{ of } 4 \\ - \frac{1}{2} \text{ of } 2 \end{matrix} = \text{THE CORRECT AGE OF "CUDDLES"}$$

Solve This Problem and Get a Handsome Gift

UNCLE DAVE, The Pony Man, wants every boy and girl to try to solve this problem. It is not really difficult but will test your knowledge of fractions. After you have worked it out, send in your answer on the coupon below. If it is correct, your gift will be sent by return mail. *One gift only to a person.*

I Want You to Join My Pony Club

When I send your gift for the correct answer to the problem I will also send you full particulars of my plan for giving ponies to boys and girls who join my Pony Club. I am going to give "Cuddles" to some boy or girl. Why not to you?



My Name is "Cuddles"

Uncle Dave is going to give me to some boy or girl for doing a little easy work. Would you like to own me? If you would, take my advice, clip out the coupon and send it, and Uncle Dave will tell you how to win me. Be sure to answer the problem about my age. If you get it right you will get a nice gift and full particulars about the Pony Club. Be sure to write your name and address plainly.

Send the Coupon To-day

And I will send you pictures of "Cuddles" and four other ponies I am going to give away.

5,000 VOTES FREE

To every boy or girl who clips the coupon and sends in at once, I am going to give 5,000 Votes, which will count toward winning "Cuddles."

Be prompt. Send the coupon right away. Be sure to write your name and address plainly.

Uncle Dave, Farm and Fireside Pony Man

Department C, SPRINGFIELD, OHIO

My answer is that "Cuddles" is years old. If this is correct please mail my gift and information about winning "Cuddles" to

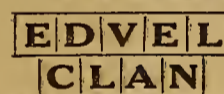
Name

Post Office

St. or R. D. No. State

Solve This Puzzle

Get a Valuable Prize



What American City will these letters spell?

Can you arrange the 9 letters in the squares so that they will spell the name of some American city? If you can I will send you a prize. I am anxious to have more bright boys and girls join my Prize Club. I want to be sure that every member is bright. The only way I could think of to find who was bright and who was not bright was to see who could solve the puzzle. I will also make you a member of my Prize Club. I will show you how you can get dozens and dozens of prizes for 10 or 15 minutes' work. Send me your answer to the puzzle. If it is correct, I will send you a prize. Enclose 4 cents in stamps to cover the cost of mailing and packing the prize. Address Secretary Prize Club, Dept. Q, FARM AND FIRESIDE, Springfield, Ohio

WANTED to hear from owner of farm or unimproved land for sale. O. O. Mattson, 2990 Cedar Ave., Minneapolis, Minn.

Home Weaving Looms \$8.50
Big money in weaving rugs, carpets, etc., from rags and waste material. Be sure to send for free loom book. It tells all about weaving and our wonderful \$8.50 and other looms.
Union Loom Works, 298 Factory St., Booneville, N. Y.

"ROUGH ON RATS" ends RATS, MICE Bugs. Unbeatable Exterminator. Ends Prairie Dogs, Gophers, Ground Hogs, Chipmunks, Weasels, Squirrels, Crows, Hawks, etc. The recognized Standard Exterminator at Drug and Country Stores. Economy Sizes 25c, 50c, Small 15c. Used by U. S. Gov't. Rough on Rats Never Fails. Refuse ALL Substitutes.

AGENTS: \$40 A WEEK

New Hosiery Proposition
Guaranteed ONE YEAR Must wear 12 months or replaced free. Agents having wonderful success. H. W. Price sold 60 boxes in 12 hours. Mrs. Fields 109 pairs on one street. G. W. Noble made \$35 in one day. Sworn proof. Sold only through agents. Not for sale in stores. A hosiery proposition that beats them all. Your territory still open. Write quick for terms and free samples.
THOMAS HOSIERY CO. 6146 Elk St. Dayton, Ohio

Money-Making Farms. 15 states, \$10 an acre up! stock, tools, and crops often included to sell quickly. Write for Big Illustrated Catalogue. STROUT FARM AGENCY, Dept. 2699, New York.

Get This Car
And The AGENCY For Your Territory
Drive a new 1918 Model Birch Motor Car. Pay for it out of your commissions and make big money on sales. Special offer now. Write quick for Big Free Book and full information. Address Ralph Birchard, Pres. BIRCH MOTOR CARS, Dept. 470, 61 E. Madison St., Chicago

Rider Agents Wanted

Everywhere to ride and exhibit the new Range "Motorbikes" completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. Choice of 44 other styles, colors and sizes in the famous "Ranger" line of bicycles. DELIVERED FREE on approval and 30 DAYS TRIAL. Send for big free catalog and particulars of our Factory-direct-to-Rider marvelous offers and terms.
TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices. SEND NO MONEY but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog.
MEAD CYCLE COMPANY
Dept. A83, CHICAGO

Farm Hands Wanted

Western Canada Farmers Require 50,000 American Farm Laborers AT ONCE!

Urgent demand sent out for farm help by the Government of Canada. Good wages. Steady employment. Low railway fares. Pleasant surroundings. Comfortable homes. No Compulsory Military Service. Farm hands from the United States are absolutely guaranteed against Conscription. This advertisement is to secure farm help to replace Canadian farmers who have enlisted for the war.

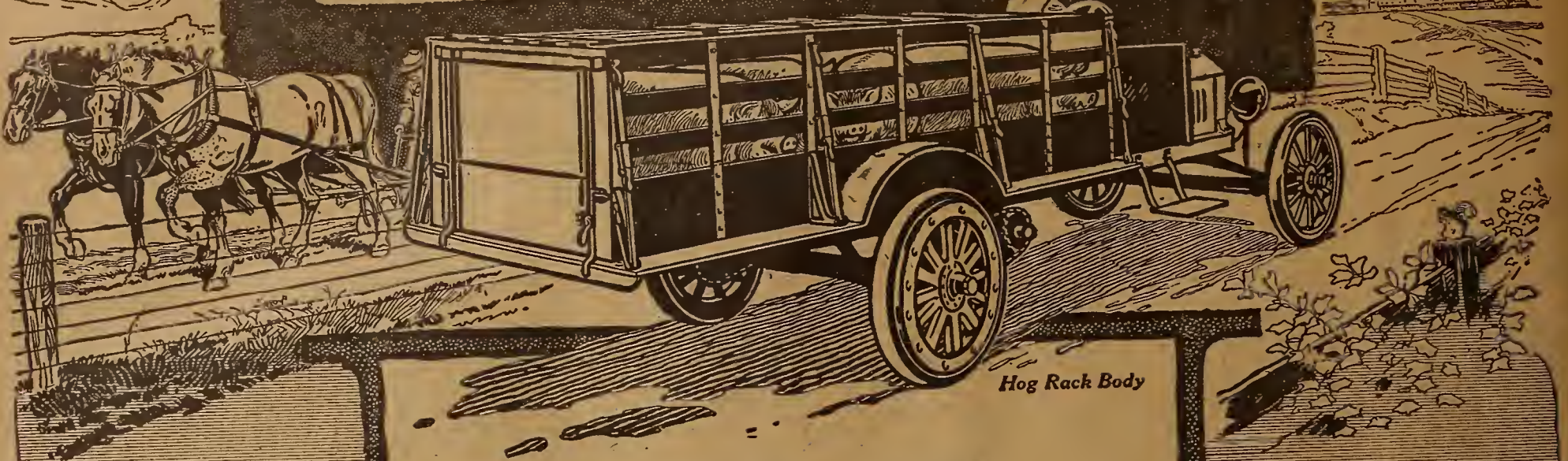
A splendid opportunity for the young man to investigate Western Canada's agricultural offerings, and to do so at no expense. Only those accustomed to farming need apply.

For particulars as to railway rates and districts where labor is required, or other information regarding Western Canada, apply to
M. V. McInnes 178 Jefferson Ave., Detroit, Mich.
W. S. Nethery Interurban Bldg., Columbus, O.
Authorized Canadian Government Agents

Smith Form-a-Truck

\$350

F.O.B. CHICAGO



Hog Rack Body

You Need Your Horses for Plowing — How Do You Do Your Hauling?

Smith Form-a-Truck is keeping every horse on the farm for live, money-making farmers. Plowing, seeding and Harvesting are real work for horses. Get *early crops* and *fancy prices* by quick seeding and harvesting. Insure against crop losses due to delays in plowing. Do it by keeping your horses at real horse work and do your hauling with a Smith Form-a-Truck.

These Big Savings 20 More Acres for Tractor Owners

Use Smith Form-a-Truck for hauling hogs, sheep and cattle to market. One Smith Form-a-Truck will haul as much as 4 teams. And in half the time—10 to 12 miles per hour!

Save the pay of 3 drivers in hauling crops to town. One Smith Form-a-Truck and a single driver will do all the work of 4 teams and 4 drivers—a clear saving of \$8 to \$10 a day!

Smith Form-a-Truck will carry 2,000 pounds of milk 10 miles and return with the empty cans in less than 2 hours. And the total cost of the round trip is but \$1.50—gasoline, oil, tires and everything. Think of it!

Throughout the country tractor owners are now selling their horses and buying Smith Form-a-Trucks. They are saving veterinary bills, medicine, shoeing, bedding—scores of needless expenses.

Government figures show that it requires all the feed grown on 20 acres of land to feed four horses.

A Smith Form-a-Truck saves this—giving you the use of this land for other crops. 20 acres of fine farm land for \$350—think of it!

Now 8 Farm Bodies in 1

Change to any one of 8 types of farm bodies is now made instantly with the famous 8-in-1 convertible farm body. Not a single tool is required. Merely pull the lever and change from hog rack body to hay rack body for loose grain—flat rack body—stock rack body—basket rack body—flat rack body, scoop board down—grain body. This is an exclusive Smith Form-a-Truck feature.

Double Strength

Smith Form-a-Truck combines with any Ford, Maxwell, Overland, Dodge Bros., Buick or Chevrolet—either new or used cars—to make a fully guaranteed, one-ton truck. When the chassis of these cars is telescoped on the Smith Form-a-Truck frame the remarkable strength of these cars is reinforced. You secure double construction—double strength—the strongest construction ever known to engineering.

And the rear axles of these cars become jackshafts for the powerful chain drive. The strong, sturdy Smith Form-a-Truck axle carries 90% of the load.

Amazing Economy

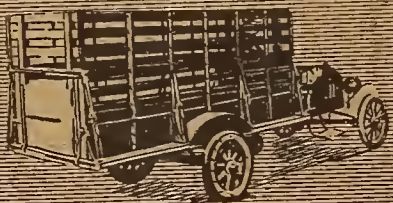
Never has any motor truck at any price surpassed the astonishing economy records of the Smith Form-a-Truck now being made in daily use on hundreds and hundreds of farms.

Note these wonderful economies: 12 to 15 miles per gallon of gasoline—6,000 to 8,000 miles on a set of tires—and practically no repair bills.

The first Smith Form-a-Truck ever built is still in daily service. It has traveled over 22,000 miles. And the total repair cost has been less than \$8. Where else could you duplicate this economy?

Send Coupon NOW You need Smith Form-a-Truck on your farm NOW—AT ONCE. Keep your horses for farm work. Start saving money immediately by getting the full value of horses. Read the wonderful story of Smith Form-a-Truck in our big book—FREE to farmers. Yours for the coupon. Send it TODAY.

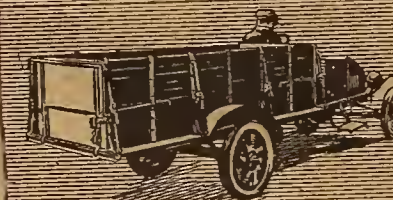
SMITH MOTOR TRUCK CORPORATION
Manufacturers of Smith Form-a-Truck
Executive Offices and Salesroom, Suite 943, Smith Form-a-Truck Bldg.
CHICAGO



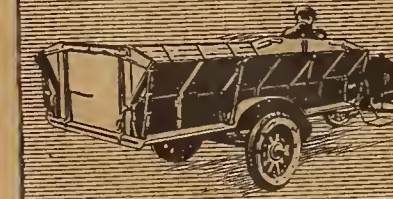
Stock Rack Body



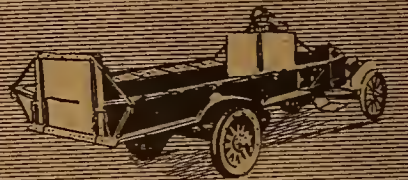
Flat Rack Body, Scoop Board Down



Grain Rack Body



High Side Flare Board Body



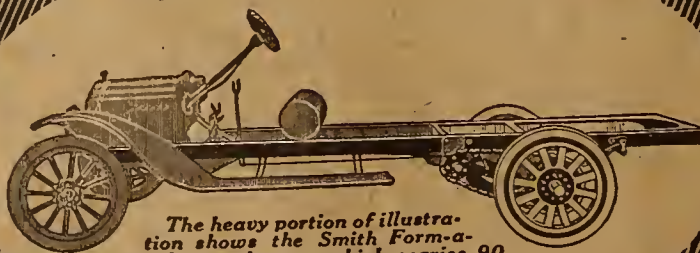
Flat Rack Body



Rack Body for Hay, Straw, Loose Grain



Basket Rack Body



The heavy portion of illustration shows the Smith Form-a-Truck attachment, which carries 90 per cent of the load, bolted to the power plant with a vise-like grip.

MAIL THIS TODAY

Smith Motor Truck Corporation, Suite 943 Smith Form-a-Truck Bldg., Chicago
Gentlemen:—Without obligation on my part, please send full details of Smith Form-a-Truck, the wonderful farm attachment with the new convertible body for farm use. I am interested in how the Smith Form-a-Truck can save me money and give me better service than I am now getting from horses.

Name

Town and County

State.....Number Acres Owned.....

40
15

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FARM *and* FIRESIDE

The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, May 5, 1917

Western Edition



PHOTOGRAPH BY CLARENCE A. PURCHASE

Putting in the potatoes with a planter

\$1195 F. o. b.
Racine

Mitchell Junior—a 40 h. p. Six
120-inch Wheelbase

Mitchell
SIXES

\$1460 F. o. b.
Racine

7-Passenger—48-Horsepower
127-inch Wheelbase

Trust John W. Bate To Build a Car As You Want It

The latest Mitchells will show you that John W. Bate is a master at building cars.

You have never, at any price, seen a car so complete. You have never seen such luxury, so much over-strength, at anywhere near our price.

How Mr. Bate Works

Mr. Bate, the great efficiency expert, has spent 14 years on Mitchells. The latest Mitchell is his 19th model. It is the final result of 700 improvements.

But he started by building this model plant, which now covers 45 acres. He spent millions of dollars to build and equip it to build this one type economically.

Nowhere else in the world could a car like the Mitchell be built at the Mitchell cost. His methods will save us on this year's output about \$4,000,000.

It is that saving which pays for all the Mitchell extras, and gives men these matchless cars.

31 Extra Features

There are 31 features in the Mitchell which nearly all cars omit. Things like a power tire pump, reversible headlights, dashboard engine primer, ball-bearing steering gear.

There is more beauty and luxury than

was ever before combined in a modest-priced car. The reason is, we build our own bodies. And all we save goes into this extra luxury.

And no other car has Bate cantilever springs. They make the Mitchell ride like an aeroplane. In two years' use, on many thousand cars, not one of these springs has broken.

100% Over-Strength

But the chief Mitchell extra is double strength in every vital part. In the past three years we have doubled our margins of safety. We are making the Mitchell a lifetime car. Three of these cars have already run over 200,000 miles each. That's 40 years of ordinary service.

Over 440 parts are built of toughened steel. All safety parts are vastly over-

size. All parts which get a major strain are built of Chrome-Vanadium.

In these days of high steel prices, any car which is built this way is either rare or costly.

Everything You Want

Mr. Bate has worked 14 years to combine in Mitchells everything you want. He spent one year in Europe, to glean the best ideas from there.

Before designing this year's Mitchells, his artists and experts examined 257 new models. So all the known attractions are combined in these Mitchell cars.

One Size, \$1195

The smaller Mitchell—Mitchell Junior—costs only \$1195. Yet it is a powerful Six, with a 120-inch wheelbase. You never saw such value in a car around this price.

But the larger Mitchell offers special value. See both sizes. See the extra features, the extra beauty and the extra strength. You will want a Bate-built Mitchell then for the car you buy to keep.

If you don't know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc.
Racine, Wis., U. S. A.

TWO SIZES

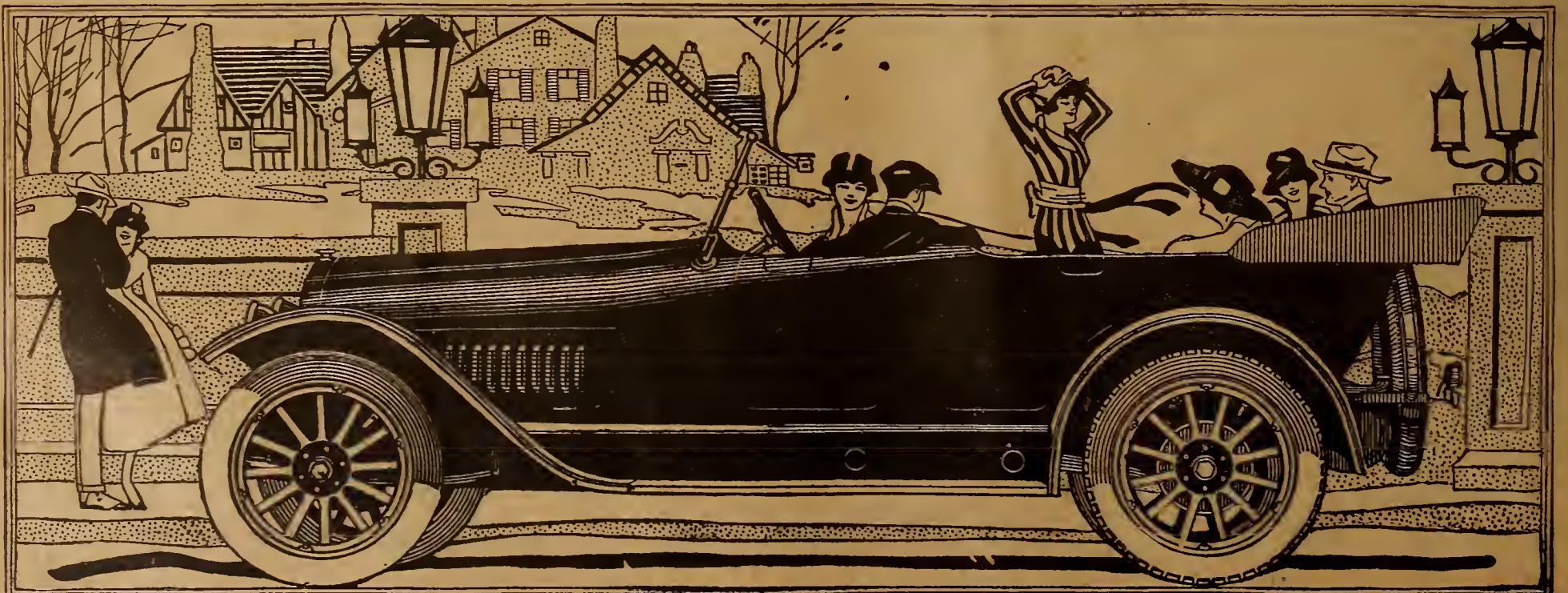
Mitchell—a roomy, 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

Price \$1460, f. o. b. Racine

Mitchell Junior—a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor— $\frac{1}{4}$ -inch smaller bore.

Price \$1195, f. o. b. Racine

Also six styles of enclosed and convertible bodies. Also new Club Roadster.



FARM and FIRESIDE

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Vol. 40

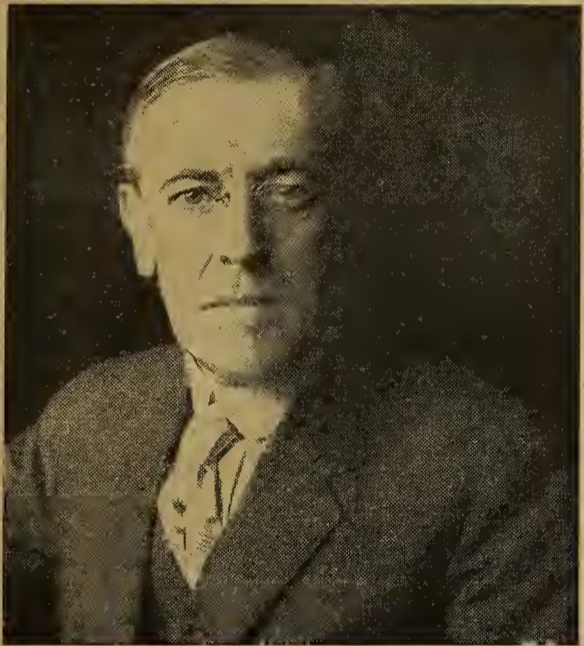
Springfield, Ohio, Saturday, May 5, 1917

No. 15

Farmers Can Win the War

President Wilson Asks Producers to Meet World Food Shortage

By HARRY M. ZIEGLER



Copyright by Underwood & Underwood

President Wilson believes the fate of the war rests upon the farmers of the nation

The White House

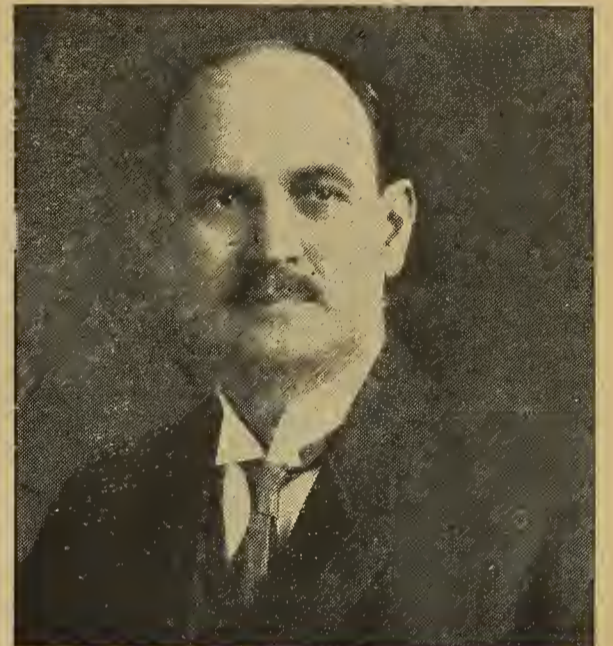
Washington

TO THE FARMERS OF AMERICA:

At the present moment it is our plain duty to take adequate steps that not only our own people be fed, but that we may, if possible, answer the call for food of other nations at war. In this greatest of human needs I feel that the American farmer will do his part to the uttermost.

By planting and increasing his production in every way possible, every farmer will perform a labor of patriotism for which he will be recognized as a soldier of the commissary, adding his share to the food supply of the people.

(Signed) WOODROW WILSON.



Copyright by Harris & Ewing

The enlarged production of staple food crops is most important says Secretary Houston

UPON the farmers of the United States, in a large measure, rests the fate of the war, and the fate of the nations. May the nation count upon them to omit no step that will increase the production of their land or that will bring about the most effective co-operation in the sale and distribution of their products? The time is short. It is of the most imperative importance that everything possible be done, and done immediately, to make sure of large harvests."

President Wilson makes this declaration in a personal appeal addressed to his fellow countrymen, in which he called upon every American citizen—man, woman, and child—to join together to make the nation a unit for the preservation of its ideals and for triumph of democracy in the world war.

"I call upon young men and old alike, and upon the able-bodied boys of the land, to accept and act upon this duty—to turn in hosts to the farms and make certain that no pains and no labor is lacking in this great matter," the President continues. "Our farms as well as all of our industries must be made more prolific and more efficient than ever. I want to say that the men and the women who devote their thought and their energy to these things will be serving the country and conducting the fight for peace and freedom just as truly and just as effectively as the men on the battlefields or in the trenches."

The President then tells how the supreme need of our own nation and the nations with which we are co-operating is an abundance of supplies, and especially of foodstuffs. The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food, alike for the armies and the people now at war, the whole great enterprise upon which we have embarked will break down and fail. The world's food reserves are low. Not only during the present emergency but for some time after peace shall have come, both our own people and a large proportion of the people of Europe must rely upon the harvests in America. He appeals particularly to the people of the South to plant abundant foodstuffs as well as cotton.

"The Government of the United States and the Government of the several States stand ready to co-operate," President Wilson explains. "They will do everything possible to assist farmers in securing an adequate supply of seed, an adequate force of laborers when they are most needed, at harvest time, and the means of expediting shipments of fertilizers and farm ma-

chinery, as well as of the crops themselves when harvested. The course of trade shall be as unhampered as it is possible to make it, and there shall be no unwarranted manipulation of the nation's food supply by those who handle it on its way to the consumer. This is our opportunity to demonstrate the efficiency of a great democracy, and we shall not fall short of it!

"To the middlemen and manufacturers of every sort, whether they are handling our foodstuffs or our raw materials of manufacture, or the products of our mills and factories: The eyes of the country will be especially upon you. This is your opportunity for signal service, efficient and disinterested. The country expects you, as it expects all others, to forego unusual profits, to organize and expedite shipments of supplies of every kind, but especially of food, with an eye to the service you are rendering and in the spirit of those who enlist in the ranks, for their people, not for themselves. I shall confidently expect every one of you to deserve and to win the con-

fidence of the people of every sort and station.

"To the men who run the railways of the country, whether they be managers or operative employees, let me say that the railways are the arteries of the nation's life, and that upon them rests the immense responsibility of seeing to it that those arteries suffer no obstruction of any kind, no inefficiency or slackened power. To the merchant let me suggest the motto, 'Small profits and quick service,' and to the ship builder the thought that the life of the war depends upon him. The food and the war supplies must be carried across the seas, no matter how many ships are sent to the bottom. The places of those that go down must be supplied and supplied at once. The manufacturer does not need to be told, I hope, that the nation looks to him to speed and perfect every process.

"Let me suggest, also, that everyone who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations, and that

every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring.

"I hope that this statement of the needs of the nation and of the world in this hour of supreme crisis may stimulate those to whom it comes, and remind all who need a reminder, of the solemn duty of a time such as the world has never seen before," President Wilson concludes. "The supreme test of the nation has come. We must all speak, act, and serve together."

This appeal is the second appeal President Wilson has made to the farmers of America within a week. The first appeal, with photographs of President Wilson and David F. Houston, Secretary of the United States Department of Agriculture, appears at the beginning of this article.

Because the food situation in the United States is much more serious than most persons believe, Secretary Houston called two conferences in St. Louis to formulate plans to increase and conserve the food products of our nation. The first conference was held April 9th and 10th by Secretary Houston with sixty-two state commissioners of agriculture and representatives of the agricultural colleges in all of the [CONTINUED ON PAGE 14]



The man behind the man in the trench doing his part to win the war

More Corn; Less Work

Why Cultivate if Killing the Weeds Gives Better Yields?

By A. T. MORRISON

INCREASING scarcity of farm labor is compelling the lopping off of everything in the nature of unnecessary expense of crop production, even though such practices may overturn our old-fashioned ideas of correct farming proprieties. Were it not for the more powerful and increasing effectiveness of farm machinery and various time-saving devices now in reach which often enables one man to accomplish more than two, half of our farm lands would have to remain untilled.

Even with every mechanical aid the ambitious farmer is often driven to his wits' end to handle his crops during the growing season, especially if delayed in his work by bad weather. Perhaps the corn-belt farmer is hardest hit by these conditions, for his large acreage of tilled land requires constant attention, and if for any cause he is held back in his work he is crowded into the hay harvest before he gets all his corn laid by.

Understanding the pressing nature of summer work on the farm, and knowing that no increase in the labor supply could be hoped for, the Illinois Experiment Station in 1907 started a series of experiments to determine as to whether or not it might be possible to cut down on the amount of cultivation given the corn crop without decreasing the yield. The object of the experiment was to find out whether or not it is necessary, under corn-belt conditions, to maintain a dust mulch in the corn-field after the weeds have been removed.

It has been thought that such a mulch prevents the evaporation of moisture from the ground, and thus preserves a greater amount of the soil water for the use of the plants. Therefore the general practice is to give the corn crop as many cultivations as possible to conserve moisture, even after the weeds have been destroyed. Any extra attention has of course taken considerable valuable time which could be used to good advantage on other crops if not required by the corn.

This corn-culture experiment was conducted on the typical brown silty loam of Illinois, the field being unfertilized except for an application of manure a number of years previous. Four plots were used. Three were plowed to a depth of six inches, and for these the seed bed was carefully worked up. The fourth was left unplowed, and received no preparation beyond the removal of stubble and other refuse. The purpose of this extra plot was to find out whether plowing and careful seed-bed preparation are paying operations for the corn crop. The fields were all planted with the same seed and at the same time, every effort being made to maintain uniform conditions for all the work.

The difference in treatment began when the corn was ready for cultivation. Of the three plots planted in a good seed bed, one was allowed to go entirely uncultivated all through the season, the weeds having full opportunity to develop. The second was given three shallow cultivations, thus removing all weeds and maintaining an ideal soil mulch. The third was not cultivated, but the surface of the ground was carefully scraped with a sharp hoe, very shallow, so as to destroy the weeds without loosening the soil to form a dust mulch.

Caring for the Corn Plots

THE surface on this plot was allowed to bake as hard as it pleased. The fourth plot, the one which had no seed-bed preparation, also was hoe-scraped, and thus was in cultivation a duplicate of number three. Needless to say, the scraping of the soil is not an operation recommended for the farmer. In this experiment it was the only practical method of removing the weeds without breaking the crust.

During the growing season the development of the corn on the different plots was watched with great interest, and at husking time the yields were carefully taken. The plot on which the weeds had been allowed to grow produced scarcely a good ear of corn; the one which had been carefully cultivated produced at the rate of 49.6 bushels an acre, while the third plot, from which the weeds had been scraped with a hoe and which had a carefully prepared seed bed, gave a yield of 44 bushels an acre.

The fourth plot, hoe-scraped but with no attention given to the seed-bed preparation, produced 38.3 bushels an acre. Thus in the first year of the experiment the cultivated plot led the one with only the weeds removed by 5.6 bushels an acre, while plot four fell off in yield 5.7 bushels because of lack of seed-bed preparation. That was a season of exceptionally heavy rainfall, 20.39 inches falling during the months

of the growing season—May, June, July, and August.

To test these treatments under the climatic conditions of different years, the same experiment has been conducted each season since 1907. During the different years the yields have varied somewhat, but the averages for the eight years 1907-15 have been 7.3 bushels an acre for the weedy plot, 39.2 for the cultivated one with the dust mulch, 45.9 for the hoe-scraped plot which was plowed, and 31.4 for its counterpart which received no seed-bed preparation.

Thus over a period of eight years, including both good and unfavorable seasons, the scraped plot, without a dust mulch, has outyielded the one which was cultivated. The plot where the weeds were allowed to grow has produced, as might be expected, very inferior yields, while in every case the one which was not plowed yielded considerably less than its well-prepared counterpart. Even in 1911, a very dry year, the cultivated plot, with its dust mulch, yielded only 34.5 bushels, or 5.3 bushels less than the plot which had the weeds removed but received no further cultivation.

Needless to say, these results have proved of great interest to me and all who have had opportunity to watch this experiment in the field. The failure of the dust mulch to produce increased yields means the saving of much labor to the farmers who have cultivated their corn three and four times after the weeds were killed, in order to keep the soil loose for moisture conservation. The value of thorough seed-bed preparation has also been proved convincingly. The deep loosening and pulverizing of the soil has in every case more than paid for the time and labor spent in plowing and disking.

The explanation of the better results secured with corn without the dust mulch lies in the fact that early in the growing season the corn plants send out lateral roots near the surface in all directions, completely interlacing the soil between the rows and hills. These in turn send out thousands of tiny rootlets which catch every atom of moisture as it travels toward the surface and utilize it for the crop; thus making the fullest use of all the stored soil water.

From the foregoing explanation it will be seen that under Illinois conditions cultivation of corn is beneficial only for the removal of weeds, and not for the prevention of soil-moisture evaporation. This knowledge is invaluable to the busy corn-belt farmer, who can save himself much work and worry by the consideration of the principles here brought out.

Nevertheless, I can see that it will be well for the average corn grower to study his own local conditions carefully, and make sure that his soil is sufficiently fertile to produce an abundant supply of corn roots early in the season before entirely abandoning tillage for moisture conservation.

The reasonable plan to follow in determining the feasibility on individual farms of substituting weed-killing in place of the usual form of cultivation would seem to be to try out some farm experiments of both forms of culture in the same field. By cultivating a given number of rows of corn in the usual way and surface-scraping an equal number of rows by attaching a sharp

blade to the cultivator for that purpose, the two kinds of culture can be given a trial with practically no additional effort. The scraping blade should be set to run at an average depth of not over two inches. The blade attached to the rear of the cultivator can be arranged so it can be shoved up out of the way when regular cultivating is done. For this purpose the single walking cultivator, or some home-made horse surface scraper, could no doubt be arranged more conveniently than to attempt making use of the two-horse riding cultivator for soil-scraping.

EDITOR'S NOTE: We have already learned of several farmers who are intending to make a test of the surface-scraping form of corn culture this season after having observed the results obtained as described by Mr. Morrison. FARM AND FIRESIDE will be glad to furnish reports from those making the trial.

Seed Contracts

By B. C. HARRINGTON

GROWING seed under contract for seed houses is getting to be quite an attractive side line on many more farms than in years past, when the commercial seed business was considerably smaller and much more of our supply came from foreign countries. Of late the fact has been brought to my attention that it is impossible for the large seed firms to grow even a fraction of the seeds they handle.

In fact, all that is generally attempted on their own seed farms is the raising of sufficient seed to supply the farmers who raise for them practically all the seed needed for the trade. I know of one firm that lets contracts for 15,000 acres of dwarf beans each year. One seed house has contracted for 250 acres in the neighborhood where I live (in Wood County, Ohio) and the contract price for sweet corn is \$70 an acre.

Different States and localities are known to be particularly adapted to the raising of certain seeds, such as beans, corn, melons, or tomatoes. A seedsman who will perhaps need 1,500 acres of corn or 700 acres of tomatoes sends a representative to interview some of the best farmers of that section. Some are found who are willing to go to a little extra trouble for the additional profit, and a contract is made for the growing of five, eight, or ten acres of certain seed.

No organization of the farmers is attempted; the company simply makes a contract with the individual. The firm supplies the seed and the farmer pays for it when his crop is checked up in the fall. Of course it is to the seedsman's interest, as well as to the farmer's, to have a first-class crop, so the company gives all the help possible in the way of advice and suggestion, usually sending a man once or twice during the growing season to look the crop over. If specially choice seed is desired, the seedsman, at his own expense, sends men to rogue the field, i. e., to pluck out all the weeds and inferior plants.

The crop is delivered in seed form, the corn being shelled, the peas and beans threshed or shelled by hand, as the contract may require, and tomatoes, melons, and cucumbers crushed and allowed to ferment until the seeds can be readily washed away from the pulp. All the crop that could reasonably be marketed anywhere is available for seed, only the portions unfit for first-class seed are discarded. As a rule, only one variety is given out to a single person, as there is more or less danger of mixing. From eight to ten acres is the maximum amount which the average contract covers, experience having shown that a larger acreage cannot be handled successfully.

A rough estimate shows a profit of \$15 to \$20 an acre more than the usual farm product income, but of course it is difficult to fix a definite line of profit for different localities and varying soil conditions. Of course it would not be good business to try to raise melon seed on 100-bushel-to-the-acre corn land, because first-class melons may be raised on land less valuable.

The thing to do is to study the possibilities of your own land, find what crops are the surest, year after year, and are the freest from the ravages of insects and blight. Then write to some of the big seedsmen of the country, asking them for a proposition on growing peas, or corn, or whatever your specialty may be. You will receive a courteous reply, and if the acreage is not already full one of their representatives will be interested to look into your opportunities.

The fact that you live a long distance from the seed house makes no difference. All the big concerns buy seeds in all parts of the United States.

It is not so much what has been raised in your locality as what you can show the seedsman can be raised. Don't be afraid to get in touch with some of the big dealers, for they are dependent upon the farmer in a double sense. Nothing ventured, nothing gained.

EW



This plot plowed, prepared, and cultivated, made a yield of 34.5 bushels of corn in a dry year



Another plot, plowed, prepared, and surface-scraped, made a yield of 39.8 bushels of corn in a dry year

Dramatizing Agriculture

Corn and Alfalfa Play the Star Rôles in a School Pageant

By ROBERT H. MOULTON



A scene from a pageant given by school children in which the value of raising alfalfa is taught in a delightful way

FOR many years farm journals and agricultural experts have been urging the farmers to raise alfalfa, not only for its money-making value, but also for its magic power to put nitrogen and organic matter into the soil. Now the same lesson is being taught in a new and novel manner by the Pageant of King Corn and Queen Alfalfa, written and arranged by Rev. and Mrs. C. J. Hewitt of Kaneville, Illinois. This pageant was recently given at Kaneville by pupils of the district school, and because of its beauty and value several requests have been received for reproducing it at other places.

Pageantry is by no means a new thing. The modern pageant was in its ancient form the foundation of all drama. The Greeks and Romans, fond of outdoor performances, chose picturesque backgrounds for their plays. For many centuries the pageant has been a popular form of entertainment in England, but during the last ten years has become the rage on this side of the Atlantic. The first pageant given in this country was at Marietta, Ohio, where, in 1888, the history of the city was told in a series of episodes. The Marietta pageant was so successful that the idea spread rapidly, until now no form of amusement is more popular.

The pageant of King Corn and Queen Alfalfa is divided into five episodes or acts. The first episode relates the Indian legends of corn as told in Longfellow's "Hiawatha." The opening scene is that of an Indian village. The Indians are gathered about the camp fires, and as the reading begins, Hiawatha emerges from the group about the tent of Nakomis, carrying a small tent, which he erects apart from the others in preparation for his fasting.

During his fasting he wrestles with Mondamin, and finally overcomes and buries him. Hiawatha, returning later to the spot, discovers a stalk of corn growing from Mondamin's grave. He calls the Indians of the village, and quickly they gather about him, expressing their delight over the gift of Mondamin in a joyous dance. In the next scene Minnehaha, dressed in white doeskin, blesses the cornfields to the accompaniment of soft Indian music. The Indian legends would not be complete without a vivid presentation of the Indian harvest with its fun and dances.

The Indians have gone, and as the next episode begins, a prairie schooner is seen approaching. It soon disgorges its load of rollicking youngsters, and the weary father and mother look about selecting a spot for their homestead. Soon the planting begins and the whole family engage heartily in the work.

Defeat Wilderness Spirit

SUMMER passes, and the Pioneer Farmer with the assistance of the neighbors erects a log cabin. This work completed, he sits by the cabin door, and, falling asleep, dreams that he sees from the shocks of corn the little corn fairies come tripping. Suddenly in their midst appears the form of another, tall and splendid and knightly, a very king of the fairies, and with rapture and gay salutation they hail him, "Long live King Corn and his subjects."

Lest the intent and purpose of this pageant should be lost sight of, there follows the introduction of Alfalfa, and her discovery among the clovers and grasses, impersonated by young women in filmy attire. Alfalfa, the fairest and prettiest of them all, is the object of much speculation by King Corn and the Pioneer Farmer. And now a bit of her history is given by the Modern Farmer, how she came from over the seas, brought by Henry Miller, the progressive California stockman.

The charm and picturesqueness of this scene is intensified by the appearance of a fury called the Wilderness Spirit, who seeks to drive out Henry Miller and remain forever the Queen of the Desert. She calls Death and Famine to her aid, but Henry Miller does not fear these, for Alfalfa brings with her the Maidens of Sunshine and Rain, who always do her bidding.

Following this exciting and weird scene, where the

raging Wilderness Spirit and her aids are driven in defeat from the field, leaving Alfalfa mistress of the situation, an entirely new feature is introduced in the shy confession of Alfalfa to the wooing of her royal lover, King Corn; and as the maids gather about her under canopy and deck her for her lover's coming, his footsteps are heard. He appears in their midst and kneels at the feet of the lovely queen, begging for her heart and hand.

The climax is reached in the final episode when to the strains of a wedding march the participants of the pageant gather on the stage for the wedding festival. Now appears Uncle Sam to act as the official clergyman. As he takes his place, King Corn and his retinue enter, preceding the Meadow Maidens, who act as maids of honor. The lovely queen, with slow and stately tread, enters in bridal attire, leaning on the arm of Henry Miller. At the feet of Uncle Sam the bride and bridegroom kneel for his blessing. The result of the marriage of King Corn and Queen Alfalfa is typified by the appearance of Prosperity in a big automobile and the departure of the wedding party with her, amid cheers of the wedding guests.

On Thirty Acres

By WALTER STEMMONS

THERE was a striking exhibit of 155 different products from a single farm at the Bryan County, Oklahoma, fair in September, 1916. A representative of the extension work which the state A. & M. College and the United States Department of Agriculture are doing co-operatively in Oklahoma had been assigned as a judge at the fair. He investigated and found some interesting facts.

J. W. Owen produced the exhibits on a 30-acre farm in Bryan County. Fifteen acres of the farm

were in cultivation and 15 acres in Bermuda grass pasture. All feedstuffs and foodstuffs used on the farm are produced there. Milk products from a small herd of cows find ready sale in a near-by town. From ten to twenty hogs are fattened on waste vegetables and skim milk. Sale of hogs and cattle bring about \$200 a year in practically clear gain. Turkeys and chickens bring \$100 a year in addition to the sale of eggs. Brooms used in the home are made from broom corn grown on the farm.

Two hundred bushels of Irish potatoes and 700 bushels of sweet potatoes are raised on the farm each year. Mr. Owen has a scientifically constructed vegetable house where potatoes, pumpkins, squashes, and canned goods are kept. He can hold his products for the best markets. He is fortunate in having a never-failing spring branch on his small farm. He has never been able to place a value on this water supply. There are 60 pecan trees, one third of them now bearing, 50 hickory-nut trees, and 12 walnut trees on the farm. Twenty-seven varieties of fruits and vegetables were shown at the Bryan County fair.

Mr. Owen has found independence on 30 acres, one half of which has been wisely put in grass pasture.

Check-Rowing Corn

By O. A. DOBBINS

THE first great requisite of a good corn crop is a good corn soil. This means a loose, loamy, warm, dry seed bed with lots of available fertility. One with a soil that is naturally suited to corn has far less to overcome than one situated on a cold, wet, tenacious clay. Our farm of 235 acres is naturally suited to corn, but it was also naturally wet and miles of tile drain had to be laid before we could realize anything like what it was capable of producing.

In producing a good corn crop we like to start about two years before to prepare the soil by growing a good crop of clover. This clover fed and put back on the land in form of stable manure and some of it pastured down on the field helps nature partially to maintain the natural fertility.

We like to plow this sod as early as possible. If this is turned before freezing weather is over we get the benefit of freezing and thawing, which will pulverize the soil better than any implement we can pull into the field, and do it a great deal easier and cheaper. "The Frost is God's best harrow." Just wetting and drying the soil a few times is a great help on our type of soil, and will be on most any soil that has plenty of humus and lime.

It is our plan to plow from seven to ten inches deep and use three heavy horses to a 16-inch plow. Our land plows hard, but when plowed early and deep our hard work is all over. We use the double cutaway disk harrow and drag or float almost exclusively in the preparation of the seed bed, and often once over the field with each of these and the early plowed land is ready to plant, but the later plowing requires far more work, and especially if it is dry weather.

We have adopted the use of a long neck yoke and long doubletrees on the corn planter, so the horses will walk just outside the rows between the row and the check-rower wire. This works fine when using light horses to the planter, but the heavier draft mares are inclined to rub the wire and scratch their legs. This enables one to plant shallower than when some of the hills are dropped in the horse tracks. We prefer to plant just as shallow as we can to get the corn into moist soil.

Any time after May 1st when it is warm enough we plant our corn. The early corn is almost always the best. After the corn is well up we sometimes harrow it before it is large enough to plow, then plan to plow it each week during June, or twice each way, and sometimes go through it with a 14-tooth cultivator and one horse after it is too large to plow.

Of our acreage of corn we usually cut about 40 acres into shocks 12x12 hills, a part is husked off the stalks, a few acres put into the silo, and usually 10 to 25 acres hogged down in the field.

Our yields in normal years usually run from 70 to 95 bushels an acre; 111 bushels an acre is our best.



Uncle Sam acts as official clergyman in the marriage of King Corn and Queen Alfalfa, who have planned a wedding trip to the land of Prosperity



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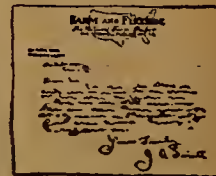
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The Editor's Letter

True Patriotism and Its Financial Penalty



AS a nation we have paid slight heed to the calamity howlers. We dislike to spoil the pleasant "ready money" sensation by looking forward or backward to less prosperous times. But Wall Street, wealthy, experienced Wall Street of New York, seems apparently to have reached its surfeit sooner than any other part of the country.

For it now joins in the oft-repeated warning to take account of the morrow. The lavish and shameless money-spending orgies in which New York has been reveling induces the Wall Street Journal to say:

"A revival of old-time piety is what we need now to clean this country of the filth of graft and greed, petty and big; of worship of fine houses and big lands and high office and grand social functions.

"What is this thing we are worshipping but a vain repetition of what decayed nations fell down and worshiped just before their lights went out?

"Read the history of Rome in decay and you will find luxury there that could lay a big dollar over our little doughnut that looks so large to us. Great wealth never made a nation substantial nor honorable.

"There is nothing on earth that looks good that is so dangerous for a man or a nation to handle as quick, easy, big money.

"If you do resist its deadly influence, the chances are that it will get your son."

I think you will admit the warning to be justified, but many of us may have difficulty in seeing in it a personal application. And yet with our country involved in international affairs, both military and financial, every family has a problem of the deepest concern. Patriotism is in final analysis a heavy tax on the home. Consider the injustice of paying the man who enlists to fight for his country a wage of \$16 a month when the man who stays home may by shrewd business methods during war time make \$16 a day. Hidden beneath the glamour of war is the fact that there are few easier ways to make money than to work for yourself while others are fighting for their country.

I am told by military men that the Civil War is a bigger factor in the present distribution of wealth than is generally known. Those who enlisted and fought with the colors left their families a heritage of honor but very little of the world's goods, while other formerly obscure families made their financial start from war-time profits and are to-day wealthy.

THE Chamberlain bill now before Congress provides some relief for this condition by doing away with the volunteer system and making military training general. But I doubt whether any compulsory measure—certainly not one as mild as the Chamberlain bill—can bridge the gap between true patriotism and financial selfishness. That is one personal application of the "easy money" situation which must be considered.

Another concerns those who are left behind and dependent on their own resources. Even in times of peace this is a problem of great importance. This morning's mail brings a letter from a farm girl in Nebraska who asks for assistance in selecting a plow.

"Papa died five weeks after we bought this farm," she explains. "We tried renting the land, but were beat out of our share of the crop. Mother and I are alone. I weigh 115 pounds, but am strong and want to plow." She then speaks about some personal matters essential for a proper answer to the letter but which has no bearing on this discussion.

Thus the situation is: Father dead, the mother must do the housework, available renters take advantage of their helplessness, the young daughter must plow and raise the crops. And the chances are this little heroine is not the only farm girl who is facing such a problem. A situation like this is enough to make most any husband think seriously of his own family. But if your heart goes out to this girl and her

mother what shall we say of the many young wives who are left with limited means or none at all, and with

small children to take care of? I have in mind a young woman in New York State who three years ago was left alone to care for herself and her baby girl. She is a member of FARM AND FIRESIDE'S big family and describes her problems with such cheerfulness and sound judgment that her success may perhaps light the way for others.

"I wasn't anxious," she begins, "for my girlie to acquire all the bad habits of a dozen communities by the time she reached school age, so I selected the best neighborhood I knew of and bought a five-acre truck farm with a badly run-down old house and a small poultry house. I could see no better way of making a living and keeping my baby daughter with me.

"THE deed was drawn early in April, and I made a fairly good garden that year, considering I had no opportunity to prepare the ground in advance. It was badly infested with weeds and about a third of the land was swampy.

"In the fall I hired my garden plowed, and early the following spring had it tile-drained. The tiling job was finished just in time, for it rained all the rest of the season, and but for that tile I am afraid the whole garden would have floated away.

"My hens could go out in the rain, so they fared better than the vegetables, and brought me a nice return on my investment. If I had been raising ducks and water lilies that season I might have made a fortune. The third year the weather was more favorable and my garden was a decided success.

"I also sold fresh eggs, home baking, apples, berries, and anything we had to spare. By this time I had several hundred berry bushes, 20 peach trees, 28 pears, 100 cherries, and 50 apples. They were one, two, and three years old, in a thrifty condition, and growing nicely. A few more had been set out, but died from various causes. Many of the trees had been girdled by rabbits, and by waxing the wounds carefully and bridge-grafting the worst cases, I saved all but two. I have had many needed repairs made about the house, and my aim of having a comfortable profitable farm home of our own is steadily coming nearer realization."

This woman's judgment and courage in buying the farm were surpassed only by her skill in handling it. How many farm women who read this know how to make a bridge graft or could supervise the construction of a tile drain? Don't all speak at once. And when we consider the women of Europe, who with the old men and boys are working the farms and helping to feed the armies, these thoughts must not be construed as borrowing trouble.

This is a fitting time to outline a personal program which, if gone over now, with all present, may be of help to a family left alone when the head of the household is called away by death or to serve his flag.

The first is a clear knowledge of wills, deeds, taxes, insurance, business papers, and local property values. The second is an acquaintance with county officials, bank officials, and a good legal adviser.

The third and most important is a definite knowledge of farm practices, use of agricultural tools, the safe storage of crops, marketing methods, and other information that may help a family to avoid losses and to get best returns. As this is written, most of the affronts given the United States have occurred on the high seas. These are not of enough direct concern to farmers to test the real spirit of rural patriotism. Yet the future is uncertain, so let us get our affairs in order with more than ordinary care.

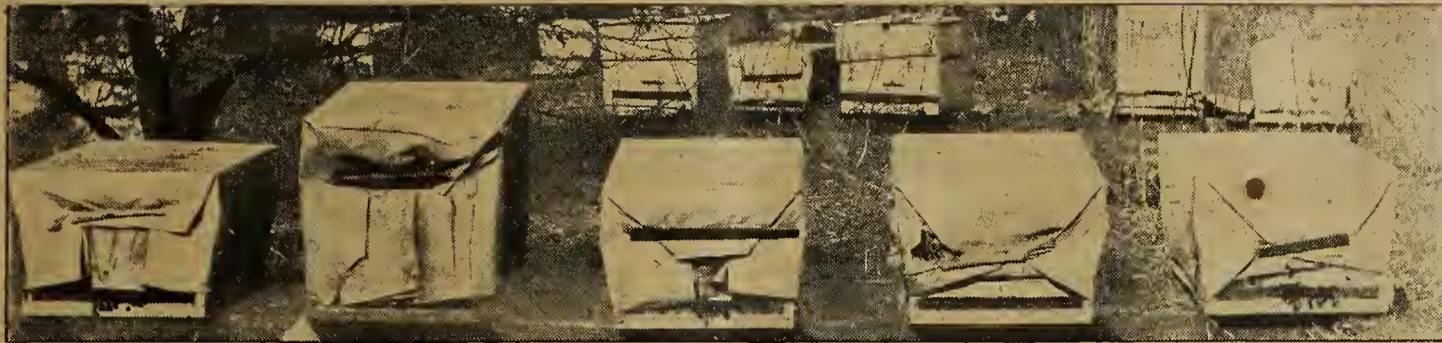
For when the eagle screams our thoughts will be for those at the front rather than for the great agricultural army patiently serving at home.

The Editor

Beekeeping on Shares

An Excellent Business May be Waiting at Your Door

By HARRY A. HUFF



Covering the hives, all but the entrance, with newspapers, using heavy tarred paper for outside wrapper, works well. Before covering I put on an empty super filled with fine corn husks

MY ENTRANCE into the bee business was so sudden I can hardly yet realize that my surplus crop last year was almost three tons of extracted honey. Two years ago I didn't know a worker from a queen bee. My first attack of bee fever was contracted when I secured the services of our state entomologist, who was also the bee inspector, to inspect some nursery stock for me. He noticed the favorable situation for beekeeping and advised one of my sisters to make a beginning with bees. She bought two colonies in frame hives in March, 1915, for \$3 each. She at once began studying bees and beekeeping from government and state agricultural bulletins. We both got interested, and I helped her take care of the bees.

Expert to Rescue

In July a neighbor offered me 15 stands of bees to care for, each to have equal share of honey and increase. I jumped at the chance. Some of her bees were in hives thirty years old and had had no care for three years. At once I asked the state bee inspector to come and examine the bees and advise me. He recommended transferring the bees in the poorest hives into new ones and put supers on them all. The owner of the bees bought the new hives needed, and I did the transferring work as best I could. This undertaking showed me the need of a guide and rule book to work with. I therefore bought a copy of "A B C and X Y Z of Bee Culture" and studied it faithfully whenever time permitted.

I got two late swarms and one swarm from a tree in the fall of 1915. Then another beekeeper "stumped" me to take his bees on shares. All at once the bee business took on a new aspect. Why couldn't I get enough bees on shares to get a good start in the bee business? Should a good crop of honey be secured, both owners and myself would profit, and a honey-crop failure would mean only loss of time and labor to me. One

year with another I felt it would work out profitably.

After looking into the proposition I found 75 stands to care for on shares the next year (1916). I bought enough stands of bees to make 22 of my own when the season opened. Meanwhile the 15 colonies taken on shares in July made a surplus of 300 pounds of honey, and my sister's two swarms made 80 pounds.

I protected the hives for winter with paper and packing and devoted the winter to learning all possible about bee culture. I attended the state fair and the State Beekeepers' Association, where I asked all the questions I wanted to

clover flow I extracted three times. When I got through with the clover flow I found I had extracted 6,614 pounds of fine honey. Half of this and 1,725 pounds of my own amounted to 5,032 pounds. The bees had swarmed enough so that there were about 50 stands of increase, and they were worth at least \$4 a stand. Half of the increase belonged to me. I also took some old hives from which I had transferred the bees, and set them in the timber and caught 12 stands in that way. One of my neighbors gave me four stands for going and getting them. Then the first of August I bought 70 stands of bees and brought them home for the fall flow, which comes here in August and September. The bees that I bought in August made about 500 pounds more than they needed to carry them through the winter.

Income for Year, \$900

The honey that I got for my share sold for \$600. My increase from share bees was worth at least \$100. I also had about 100 full-depth bodies filled with extracted combs worth about \$200. During the summer I spent about \$250 for new hives and supplies, and this expense will not have to be repeated for several years unless I increase the number of colonies that I have.

Here are a few things worth remembering when undertaking the keeping of bees on shares: Have an understanding with each person you are working for that he is to stand all the expense of the hives for the bees that he furnishes you and the expense of hives for his half of the increase. If you have the money and he does not want to buy anything, you can furnish the necessary supers and charge him 10 per cent of his share of the honey for the use of the supers. The supers in that case will belong to you, and when you are ready to quit working on the shares and start for yourself you will have a fine lot of drawn comb to work with.

Another thing that will pay you is to go to some man who is making a business of raising honey and spend a day or two with him and ask him questions and have him show you how he handles his bees and how he takes care of them. You can learn a lot in this way in a short time, and it will pay you better than anything else you can do.

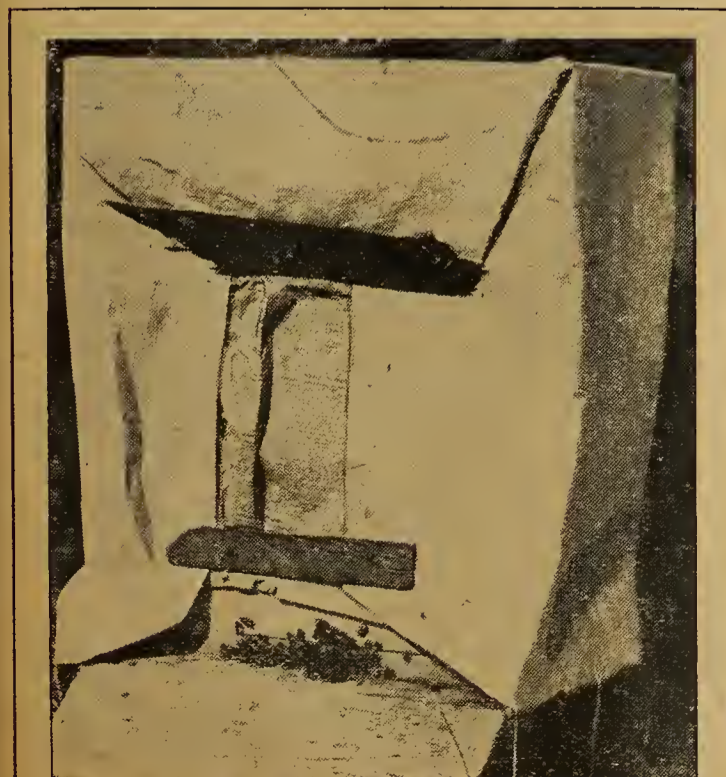
Watch Out for Bee Diseases

You will find that some of the people that you are working for will want to sell at the end of a year or two and you can buy them out at a reasonable figure. This will help to cut down the competition in your neighborhood, and you will find that the nearer all the bees in your neighborhood are under your control the easier it will be to get pure Italians and keep them pure, and that it will be easier to control disease should it get in. I have had no foul-brood disease. I do not know what this bee disease is like, but know it can be stamped out by following directions of bee experts.

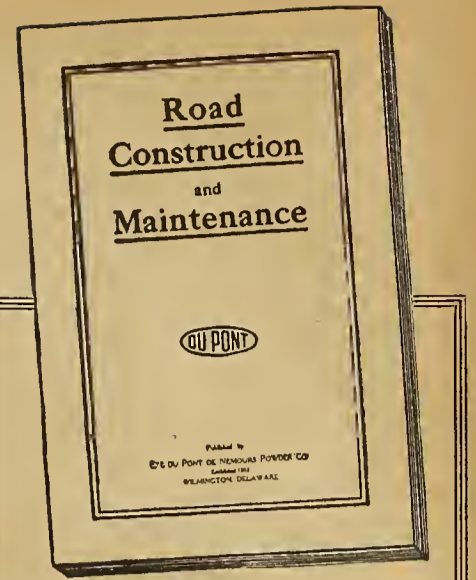
Do not conclude that it will take you years to learn to handle bees. If you are willing to follow instructions very carefully and will work with bees, study bees, and dream bees, there is no reason why any average person who does not dislike bees cannot make a success with them in a year or two. If one starts with the share method and there is failure to get a honey crop, no money will be lost.



Hive thirty years old in which some of the "share" bees were furnished me



Near view showing how paper is put on and fastened by tacking on strips of lath



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FARM and FIRESIDE

THE NATIONAL FARM PAPER

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May 5, 1917

Trend of the Times

ANY insight into the agricultural mind, any index as to the direction in which we farmer folk are traveling, is always interesting. Especially is this true as regards matters of legislation. For this reason a recent inquiry made through the board of agriculture in a corn-belt State to its crop correspondents is worthy of note. These farmer reporters—some 800 in number—were invited to suggest subjects for desirable legislation, whether such legislation be the enactment of new laws or the amendment or repeal of existing ones.

What did the replies reveal? Was there railing against the railroads and a cry to curb all corporations, the good and bad alike? Not so. At the head of the list is the question of roads, a demand for sensible, businesslike road legislation. The next most numerous expression is for a pure-seed law, designed to prevent the State from longer being the dumping ground of inferior seed, and especially of seed containing the seed of noxious weeds. Third in order is the expressed desire for legislation that will afford sheepmen protection against dogs. Schools, with special stress laid upon desirable changes in rural school laws, come next. Then, following, is the plea for protection of the quail—friend of the farmer in his fight against insect pests.

The next propositions, in order of number of advocates, are for liberal support of the county agricultural agent law, establishment of a bureau of marketing, aid to agricultural organizations, provision for more adequate farm credits, stallion law, pure-feed law, compulsory spraying of orchards, and more effective fertilizer inspection laws.

Then, as marking a complete change over the attitude that the farmer—often falsely—was accused of assuming in the past, there was a taxation suggestion. What was it? That the law be so amended that the rural resident be allowed to vote as much money for school support as the city man may now vote, and that the possible maximum tax for road purposes be raised.

What better proof than this is needed to demonstrate the progress and business efficiency of the farmer?

Boycotting Farm Products

THERE are two sides to the agitation against the high cost of living. If food products such as eggs, dressed poultry, potatoes, and other food products were the only things that had advanced in price, it would be different. But practically everything has gone up in price. It is only fair to the farmer to suggest that he is having to pay more for what he buys, and that the cost of production, owing to higher wages and larger operating expenses generally, has greatly increased.

Gasoline has advanced, but there is no talk of a gasoline boycott. Shoes have increased in price from 40 to 80 per cent, but no one is proposing the organization of a society all the members of which are pledged to go barefooted. Apparently, the fight, and in some instances the boycott, is directed and centered against the commodities produced on the farm. Is this fair? Strange as it may sound to some, the farmers in many States have for several years been having a pretty hard fight.

Acre Production

WHEN the value of the soil fertility elements contained in manure is considered, it would seem that there would this year be very few manure heaps left about the farm as breeding places for flies later in the season. Then, too, with the unusually high prices for grain there is an added incentive to secure the increased acre production which an application of stable manure makes possible. No one now questions the value of manure in building up soils. This plant food is easily available and the humus puts the soil in excellent tilth. No farmer can afford to let the barnyard manure go to waste. This year of all years, the manure heap, if left on the farm to become a menace to health instead of being applied to the fields, will bespeak neglect. We are fortunate in being able to get direct and attractive returns for the work done in making our farms more sanitary and more sightly.

Roadside Shade

COUPLED with a strong good-roads sentiment in an Ohio township is a plan to line the roads of the township with trees. The principal reason advanced by the committee which has charge of the project is to make the roads more pleasant to travel in the heat of summer.

In addition, the trees will in a measure help to keep the surrounding ground moist by preventing rapid evaporation, thus keeping down the dust. They will shelter travelers during storms, check the erosion of ditches on hills, beautify adjacent property, and add to the general attractiveness of land values of the community.

Those who start such work are not likely to live long enough to see their plans fully completed and to enjoy the shade. This fact lends a pathetic touch to the project as well as indicating a sincere and unselfish desire to be of public service.

The Pesky Fly Again

FLIES constitute one of the greatest discomforts of life in the country, and while entomologists and statisticians and other people with titles, working at desks, may figure how easy it is to get rid of flies, the housewife in the country knows better. It isn't.

But it is possible to do more than most people attempt, and without much difficulty. Screened barns, kept clean, with a few shallow pans of formaldehyde solution placed about them in safe places, will do much to kill flies and to prevent their multiplication.

Keeping the manure spread constantly, or storing it in a covered pit, is perfectly practicable and will help. About the house there should be no careless pitching out of waste and garbage. Keep all refuse in metal containers, under tight lids.

The infantile paralysis epidemic in New York resulted in the belief that flies spread this disease even though they do not cause it. Consequently, in the farming sections near New York a great deal of progress toward fly control was made last year by the simple and inexpensive means suggested.

Also, the children will develop a fiendish enthusiasm for swatting 'em, if taught the habit, encouraged, and provided with swatters.

To Increase Corn Yield

APPROXIMATELY 100,000,000 acres will be planted to corn in the United States this year, and into each acre will go either tested or "guessed-it" seed. The 1916 corn yield amounted to 2,583,241,000 bushels. It would perhaps be well within reason to say that had none but good seed been planted last year the yield might have been increased a bushel to the acre. But as individuals are interested more in the personal application than in public saving—often unfortunately so—let us see what seed-corn testing might mean to just one man.

Suppose a person plants but 80 acres to corn. With average untested corn the probability, based upon figures compiled in various States, is that he will get only an 80 per cent stand. In other words, while paying rent or interest on 80 acres he will really have corn growing on but 64 acres. There will be 16 acres which he cultivates as regularly as the other, but from which he harvests nothing, although at husking time he takes time to drive over the entire field. Looks like a losing proposition, doesn't it? And it is.

Now let us assume that by carefully testing all the seed corn and planting none but that of high-germinating quality this farmer is able to get a 90 per cent stand—testing will not guarantee a perfect stand—he has a loss equivalent to but eight acres. While planting and cultivating no more ground than he did before, he has eight acres more to harvest. Taking the United States 1916 corn yield of 24.4 bushels as a basis, this represents an increase of 195.2 bushels.

What was the cost of testing? Let's see. As a bushel of corn will plant about eight acres, ten bushels of seed would be required. A liberal allowance of time from first to last would be three hours in which to select a bushel and later to test it. This would be three days of ten hours each. The remuneration, then, barring the extra time required for husking the increase at the end of the season, would be \$10 an hour, or \$100 a day.

Then why not test our seed corn?

Our Letter Box

Tiling Helps Our Barn Well

DEAR EDITOR: Our stock well on the old home place went almost dry during a drought last summer, and as the farm was undivided heirship property my brother conceived a plan to increase the water supply without an expensive job of deepening the well or digging another one.

It was not our desire to go to any great expenditure until the property was finally divided. His plan worked out finely, so I pass it along to FARM AND FIRESIDE readers.

He began digging a tile drain to empty the drainage water into the well. But the cut required was found to be so deep it would have made the expense about equal to the digging of a new well. We also had to consider the danger of carrying the sediment from the tile drain into the well, and thus filling it up.

So instead of ditching an outlet from the tile drain into the well, he dug a deep hole down to a stratum of gravel at the place where the tile drain runs the nearest to the well. By means of this hole the steady stream of drainage water seeps through the gravel into the well, and no lack of water for the stock has yet been experienced, even during a long continued dry period.

GRACE E. HIESTER, Illinois.

Do Sugar Beets Pay?

DEAR EDITOR: Perhaps some of your readers are raising beets for a sugar factory. If so, I would like to hear from them through your paper what they think and what they know.

We have in Sheridan, Wyoming, a factory which has been running for two seasons, and as nearly as we can learn a good many who were going to make their fortunes have beet machinery for sale or trade, and they are ready to tell you their tale of woe. I have been told that the machinery in this factory was

formerly used in a Colorado factory, and before that came from Nebraska.

We have talked with a number of ranchers who have raised beets in Wyoming, Colorado, and Montana, and they all tell the same tale—nothing in it but hard work and no profit. Query: Is there any money in it for anyone and, if so, what has been the trouble with those with whom we have talked? As I am not a beet raiser, and have never been, I have no sore place to rub; but, being rather inquisitive, I am nosing around to see what I can learn.

A. P. Dow, Wyoming.

Home-Canned Chili

DEAR EDITOR: I want to tell you about a little experiment that I worked out the other day. While we were canning beef I decided that I wanted to make some chili con carne to can.

I boiled three quarts of dry beans, ground five and one-half pounds of beef, one-half pound of suet, and five small red peppers. I mixed the above with three quarts of seeded tomatoes, cooked all thoroughly before packing into jars for canning.

Imagine my astonishment when I learned that I had 30 pints of chili con carne which would have cost \$6.80 to buy it factory-canned.

GRACE DIETZ, Nebraska.

A Little Puff

DEAR EDITOR: I want to thank you and your staff for the many good things found in FARM AND FIRESIDE for the year ended, and hope you will give us as good always. The stories are clean, bright, and one can live in them and almost see each character.

MRS. E. P. RHINEHART, Minnesota.

This Club Does Things

DEAR EDITOR: Down on the Ohio River, in Jackson County, West Virginia, there is maintained a farmers' club of only fourteen members which in a short time seems to have accomplished considerably more than similar organizations have planned and carried to unqualified success.

This is the Ravenswood Farmers' Club. It was organized only four years ago with six charter members. Since then other names have been added, until there are now fourteen families associated together in the club.

The regularly kept minutes of the organization show that there has been one meeting every four weeks since the club was started, sometimes held in town homes, more frequently out on the farms.

It was this little band of farm workers and thinkers who mainly were instrumental in securing a county agent for Jackson County. Resulting from a good roads meeting called by the club a stretch of 3,000 feet of the Ravenswood and Ripley pike was built at a cost of \$2,300. This is the only improved hard road in the county.

A portion of the neighborhood occupied by four members a few years ago was considered poor, barren, and swampy. Now it is the agricultural show place of the county.

In four years the club caused farms to be named, has induced the owners to use printed stationery and to make their farm homes much more attractive. It organized a boys' corn club and financed the trip of one of the young fellows on an important mission. It has held two two-day fairs and two harvest picnics. Poultry shown at one of these fairs took first prize at the State University Show at Morgantown.

Each member of this club has pledged himself to breed both beef and dairy cattle to pure-bred stock only. The club has an official publication, one of the members being the editor and publisher. J. L. GRAFF, West Virginia.

Insects Avoid This Pumpkin

DEAR EDITOR: We notice that you are asked what to do for the bugs that ruin the pumpkin vines. We have four varieties of those bugs here, and they live right on through the winter, so get to be very numerous. We cannot raise the field pumpkin at all, but the Cushaw, or Big Crook-Neck, is not troubled at all, so we can raise that kind for family use and for the stock also. It is a delicious pie pumpkin and grows from 18 to 24 inches long here.

MRS. S. C. DAVIS, California.

Getting Cheaper Flour

DEAR EDITOR: We are not paying high prices for flour since we bought 35 or 40 sacks last fall at \$1.60 a sack. As for graham, whole wheat, and corn meal, we grind it ourselves, and find it superior to the commercial article. Home grinding is a popular fad in this locality. Gas power is the agent used.

JAMES WISEMAN, Kansas.



Model Dairy Barn—J. E. Rouspiez, Juda, Wis.

The Larger Purpose These Tires Serve

Business today is so illimitable in scope, so far-reaching in its activities, opportunities for personal contact between producer and user are few and far between.

We cannot stand behind a counter, and greet you as you come in, and have you know us and our aims as one man knows another.

The whole burden of justifying us and our principles, sustaining the good will which should subsist between us, devolves upon the only agency of acquaintance we have, our product.

And this, our product, cannot explain, extenuate, apologize—it can uphold us only by serving truly and long—it must speak in deeds, not words.

Do you wonder not the slightest detail of make-up or material is spared to make Goodyear Tires able and fine?

Why, all this vast and elaborate organization behind them—all the effort we have made, the unrelenting push onward through the years from obscurity to dominance—our intentions, trials, hazards, integrity even—these were as nothing did the tires fail.

But they do not fail.

Over all America, from the Gulf to the Great Lakes and between the Portlands, Goodyear Tires by the good that is in them serve ably their larger purpose.

By the miles they give, the comfort they provide, the untroubled travel they insure, they span the gap between maker and user with a structure of enduring confidence.

More of them are sold in the United States today than of any other brand.

Sometime *you* will come to Goodyear Tires. When you do, buy them of the Goodyear Service Station Dealer in your neighborhood. He's a good man to know.

He will tell you why you should have Goodyear Tubes inside your casings—*better* tubes. It will be well to listen to him, his advice is valuable.

Or perhaps he may talk of the Goodyear Tire-Saver Kit. In which case, also, he's worth hearing, as the Kit is worth having. Like the Tubes, the Tires, and himself, it has a part in getting you greater mileage at less expense.

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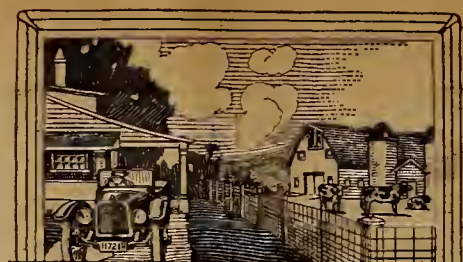
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Farm Building

"Hired Man's Room"

By Florence L. Clark

AN IOWA farmer who is farming close to 500 acres of land has put into practice a novel plan of handling his hired help to make them happy and contented with their job. Several hired men are employed, and up to last summer the farmer had all the usual difficulties in keeping good ones.

Then he built a fine new farm home, and in drawing up the plans for it hit upon the idea of setting apart the lower floor of one part of the house as a "hired man's room"—not a bunk-room, but a room that would serve the men just as the living-room served the family for resting, reading, writing, and receiving their friends.

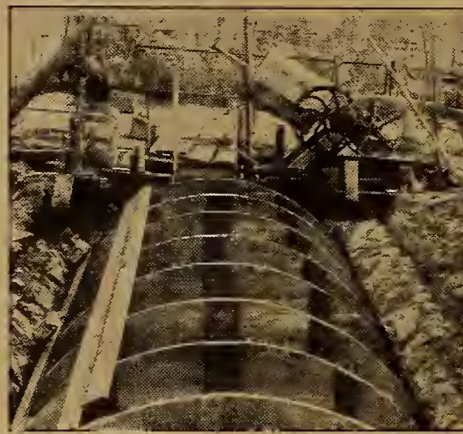
The utility side was also looked after. A long row of hooks was placed on one side wall where the men could hang their coats when coming in from work. On the other side he installed wash bowls. This has meant a big saving of work to the housewife, for the men now go direct to the room to prepare for meals instead of using the kitchen.

The room is fitted up with comfortable chairs, couches, a writing desk, and a cabinet for guns, fishing tackle, and similar things. Here the men really have a home of their own. The owner declares that the plan works splendidly.

Farm Cave for \$66

By Grace Dietz

LAST year we decided that in addition to our cellar we needed a cave in which to blanch celery, store potatoes,



The forms which were used in constructing the arched roof of the cave

and to use for other articles requiring a cool place. The cellar under the house was too warm for these things.

You see, having had a cave on the farm we had lately left, we knew the merits of one. And although caves sometimes cost over \$250 to build, the one I am about to describe was made with a cash outlay of only \$66. We studied the material proposition seriously before engaging in the building of this cave.

It was to be made of concrete. The sand, bought from a neighbor, cost 50 cents a load. The rock Father got by blasting a large boulder, the owner giving \$10 and the rock to have it removed from his field. This boulder was about the size of the average farm garage, and was three miles from our place. The man was afraid the boulder would not furnish enough material for our cave, but was so anxious to have it off his place that he offered to give Father five big loads of rock he had piled up.

Well, the big rock made 34 four-horse loads, and as Father had agreed to take the small rocks also, they were hauled home, and we found good use for them in building two small concrete bridges which had been temporarily made of lumber. Not much time was required to dig the cave, as the boys used a plow and scrapers for a large part of the work. Most of the tools came from an old "iron" man, so you see we did not indulge in an expensive layout. Neither did anyone in the family possess any capabilities in this line except those acquired through inheritance and general observation.

For the arched roof, which was to be of concrete, Father built forms, which you can see in the first picture. They were 9½ feet long by 24 inches high, and some of these forms have since been

used for building the small bridges over the creek on our farm. Boards were placed over the arch-shaped forms and the concrete then put in place. After it hardened the forms were removed. Our arch made of concrete and cobblestones is as substantial and nice as any brick arch, and at least a thousand per cent better than the boards and hay tops that are so frequently used over caves. You may possibly recall the cold snap of early October last year. Our potatoes were dug and on three wagons. As the cave was not finished we took the precaution of covering them with straw on a Friday afternoon, after which we put the celery in the cave. Friday night we had a freeze here in Nebraska, but on Saturday morning we removed the forms and hustled the potatoes into the cave Saturday afternoon. I mention this so that others will not put the construction of caves off till so late in the fall when vegetables should be protected.

Our cave is 17½ feet long, 10 feet wide, and 9 feet deep. At the rear of the cave there is a space of six feet and as wide as the cave where the floor level is eight inches lower than the floor proper. This space is not cemented and is used for storing and blanching celery. At the present time it contains 55 square feet of delicious celery. By having this space lower we can irrigate the celery without wetting the cement floor.

Wedge-Shaped Rocks in Arch

The picture showing the entrance gives a good idea of the method used in constructing the walls. The form method was employed for making all the walls, and you can see from the carpenter's square at the entrance how thick the wall is. The walls of the cave are three inches thicker than the entrance walls. It was not necessary for them to be so thick, but rock was plentiful and we used it accordingly. In building our walls we saved all pieces of rock 7 to 9 inches thick and of a wedge shape, to be used in the arch.

By using the stone in large pieces a good wall can be laid up against a form with much less expense for cement than if the rock is finely crushed. The lower edges of the arch or roof are a foot below the surface of the ground. The rocks used on the outer edges of the arch were nine inches thick and those in the center part of the arch seven inches thick.

All of the rocks used in the arch were placed with the thick edge on top and the thin edge or wedge pointed down. Then a fairly wet concrete mixture was poured in, between these rocks and the upper surface was carefully smoothed. Finally, when the concrete was hard, the top of the cave was covered with dirt and then sodded. The entrance of the cave is in our house yard, but the cave itself is under the poultry yard. As chickens are destructive to dirt or sod on caves, we put woven-pipe poultry netting over the sod and staked it securely. The grass grows up through the meshes and the chickens are unable to scratch the sod.

The bolts seen in the entrance walls hold a wood frame on which the door is fastened, the slant allowing the rain to run off freely. The steps of the entrance are of concrete. In building the



Entrance before door frame and door were put in place. The cave is nine feet deep

cave walls we placed pieces of iron pipe crosswise in the concrete, 3½ feet above the floor. Iron bars placed in these pipes now serve as brackets for the shelf on which we built a potato bin.

Eight Standard Tools

By Mark Sabin

UNDER the title of "Repair Shop," U. C. I. Guinness, a Massachusetts machinery expert, lists the following tools as invaluable on every farm. The chest includes rip saw, crosscut saw, steel square, claw hammer, jack plane, block plane, spirit level, brace, and set of auger bits. Many other tools might be mentioned, but with those listed practically all of the necessary farm carpenter work can be done.

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Geo. A. Kralik, Okla. City, Okla.

I consider it equal to a prominent machine sold for \$140. One neighbor who has used both says he would rather have the Galloway.
W. O. Cracraft, Eckley, Colo.

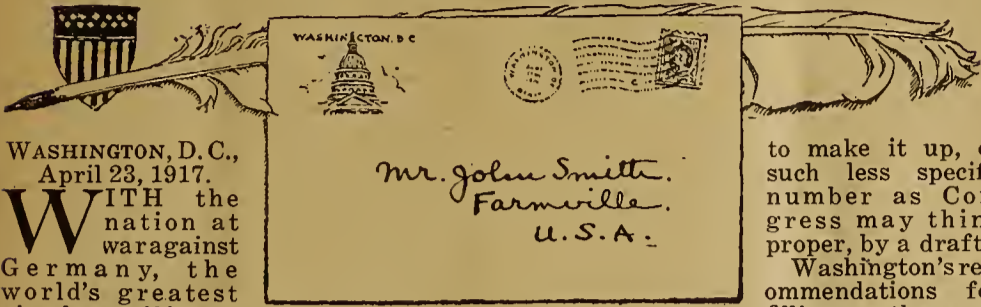
I saved \$39. Believe I got a better spreader than was offered me here for \$135.
A. T. Miller, Orella, Neb.

It is as good a spreader as money can buy. I kept \$35.43 in my own pocket. A team that weighs 1,850 lbs. pulls it easily.
W. H. Adams, Pound, Wis.

THE WM. GALLOWAY CO., 399 Galloway Sta., Waterloo, Iowa

Selective Conscription Plan of Raising a Great American Army

By JOHN SNURE



WASHINGTON, D. C.,
April 23, 1917.

WITH the nation at war against Germany, the world's greatest single military power, the business of raising a mighty army has suddenly become the serious duty of the United States.

President Wilson realizes this. Congress understands it. The wheels have been set in motion. The sleeping giant has begun to wake.

In not more than two years, there will be a trained force of 2,000,000 men or more with the colors. One gets a grip on the magnitude of the task in considering the first estimate of the War Department for the expense of the new army. For the first year it was, in round numbers, \$3,000,000,000. The outset of the war with Germany, as a matter of fact, found us even more unprepared than England in the fateful summer of 1914. Not only have we refused a large standing army, but only within the last year have we awakened to the importance of universal military training. More than that, the Government has refused to accumulate those large stores of rifles, field artillery, machine guns, ammunition, and equipment which are indispensable in modern wars between first-class powers.

It takes 6,000 field guns and thousands of machine guns properly to equip our proposed army of 2,000,000 men to fight as the troops in Europe fight today. The War Department cannot muster a sixth of the field guns needed for the purpose. It has but few machine guns. It has not enough modern magazine rifles to fit out an army of 2,000,000. It does not even have the clothing.

How long the war will last or what its results will be no man can foresee. But one thing seems plain, that whether the United States sends large forces to the European battlefields or not, whether its forces decide the issue or not, the end of the conflict will see in existence an American army and an American navy of such proportions that no single world power and probably no alliance of powers at all likely to be affected will care to undertake to attack Uncle Sam.

In the fact that the European war will make the United States prepared instead of unprepared, many men in Congress and official life feel there is large, if not complete, recompense for entrance into the struggle.

An army of 2,000,000 men, or even more, in two years! Congress was almost stunned in the days following the declaration of war when such a force was proposed. Now it has become used to talking of men in millions and of money in billions. But how to raise such a force? That has been a troublesome question.

THE army will be raised in part by the volunteer system and in part by conscription, or by what the War Department has called the selective draft. Much opposition to conscription exists in the country and in Congress. But when President Wilson in his message came out in favor of raising troops on the principle of universal liability for service, he made it clear that in this war the Government did not propose to rely on the volunteer system alone.

Beginning with the Revolution, down through the Spanish-American War, there has always arisen the question of how the forces should be raised, whether by the volunteer method or by conscripting them. Especially is this true of the Revolution and the Civil War. If now the country is talking much of drafting or conscripting men to help in the grim work of defeating the armies of the Kaiser, it is not talking about a subject which is really new. George Washington poured forth characteristically vigorous language over it. Abraham Lincoln wrestled mightily with it. The Government of the Confederate States, exercising sweeping powers, passed a law for the drafting or conscripting of men the second year of the Civil War, and by so doing in all probability greatly prolonged that struggle.

"The plan I would propose," said Washington in the second year of the Revolution, "is that each State be informed by Congress annually of the real deficiency of its troops and called upon

to make it up, or such less specific number as Congress may think proper, by a draft."

Washington's recommendations for filling up the army were not followed, and the story of his years of trial and tribulation with an unsystematic and loose method of getting troops, by short-term enlistments, by payment of bounties and the like, is not much known, but is one of the most remarkable of the country's history.

Not only did the South resort to the draft, but the North eventually did likewise. The draft riots in 1863, in New York and other cities, are familiar.

However, in urging conscription or draft at the outset of the war with Germany, as President Wilson did, he proceeded on what he believed, and the general staff of the army believed, to be sound military principles. And inasmuch as the Government will draft men in this war, if it goes on, to the extent necessary to supplement the volunteer system, it will be well to view the subject clearly and impartially.

THE draft has never been highly popular with English-speaking peoples. In England there was the most bitter objection to conscription. In Canada, compulsory service has not yet been applied, and under the system of volunteering, 400,000 men have been enlisted out of a population of 8,000,000. This remarkable showing has been possible because of the fact that the Canadian soldier is well paid and provision is made for the care of his wife and children.

Whether enough volunteers could be obtained in this country for the war with Germany was one phase of the matter the President had to consider. But this was not all. Modern conditions make war a more complicated proposition than it used to be. Not only must great armies be kept in the field, but a vast population at home must be clothed and fed and industrial conditions interfered with as little as possible.

The farms must not lie idle, or starvation will come to those at home and in the trenches. Hence the idea of the selective draft, which the President and Secretary of War Baker sanctioned. Under this plan, only unmarried men in the early twenties are made the subjects of draft or conscription, and the effort is made to withdraw as few skilled men from the farms, the factories, the railroads, and the mines as practicable. Furthermore, enlistment of the unmarried men means that neither they nor the Government is responsible for care of dependent wives and children.

The draft is built on the theory that every man of military age is alike responsible to the Government, that each has the same duty to bear arms when the need for defense rises. In this there is an element of justice and fairness which is, after all, the strongest argument for it.

Whether the volunteer army is a better fighting force than the conscripted army, that is something which has been, and still is, the subject of endless dispute.

History fully attests the merits of the volunteer when he has been trained and led properly. And one of the strongest objections to reliance on a volunteer system, especially wholly on it, has been that it has resulted in the best blood and sinew of the land rushing to arms and getting killed in battle, leaving the unready and unwilling and the unpatriotic to flourish, and to increase and multiply. The soldier who believes in what he is fighting for, if he is trained as he should be, cannot well be discounted. Cromwell recognized this when he organized the Ironsides. "I chose," said he, "good, honest men, plain, russet-clad yeomen, each of whom had his heart in the cause and knew for what he fought. I organized the old Ironsides on that line, and no enemy ever saw their backs."

The truth is, there are some arguments for the volunteer system and some for the system of universal liability for service under which men are conscripted or drafted. In this case the Government can apply both systems, and there is no reason why a great army cannot be organized in time to cope with most any situation.



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Live Stock

Currying Horses

By John Mason

FREQUENT currying and brushing will insure a healthy condition of the horse. A few minutes spent daily in currying and brushing a horse is time well spent. Aside from giving the animal a clean, glossy appearance, this daily brushing stimulates circulation. The skin is an important excretory organ, and must be kept clean and free to do its work.

It is especially important to give the legs daily care. If it is necessary to wash them in cold weather, they should be thoroughly dried before being exposed to the open air. Mud should not be allowed to collect on the fetlocks, as it causes scratches and sores on the heels and about the feet. Sores, scratches, and unsightly spots are often caused by mud and manure settling in the hair. When the mud dries it causes the skin to crack open.

In the spring the horses should be kept especially clean, as the long hours of work, dust, sweat, and heat all combine to make proper care of the skin a necessity. Sore shoulders and other afflictions, due to lack of care on the part of the owner, have often caused great loss of time and money.

To Prevent Hog Tuberculosis

By James Smith

TO RID the country of tuberculosis of hogs, a disease which is costing millions of dollars annually, is practicable and relatively easy. Extermination should be attained without delay before the disease, which appears to be increasing, has gained too much headway. Official figures of the U. S. Department of Agriculture show that nine per cent of the hogs slaughtered during the fiscal year of 1916 at the establishments under federal meat inspection were affected with tuberculosis in some degree.

In the case of hogs from some localities, especially some of the dairying sections, however, more than 25 per cent, or one out of every four hogs slaughtered, had the disease. In fact, so serious has hog tuberculosis become in some localities that hog buyers for packing houses are avoiding certain regions known to be badly infected. Some packers already are buying hogs subject to post-mortem inspection, with the loss for tubercular hogs falling on the feeder.

Other buyers who do not buy subject to post-mortem inspection protect themselves by offering a lower price for all hogs, in which case the careful breeder suffers equally with the careless one.

The two principal ways of preventing hogs from becoming tubercular are by keeping them away from tubercular cattle, and by cooking or pasteurizing all skim milk and cooking all garbage, if from cities, before it is fed to the hogs.

Hogs should never be allowed to follow dairy cattle or to drink raw milk on dairy farms unless the cattle have been tuberculin-tested and are known to be free from disease. In any event it is safer to cook skim milk or buttermilk,

or to pasteurize it, by holding it at 145 degrees for thirty minutes, or at 176 degrees for one minute. That raw milk from tubercular cows will convey the disease to hogs is fully established by adequate tests. Raw milk of any kind from a creamery is particularly dangerous for hogs, because if there is but one tubercular herd on the creamery route the milk collected from this herd may affect all the skim milk collected at the factory. This explains why tuberculosis is most common in hogs in dairy regions where milk is taken to a central creamery and raw skim milk brought back to the farm from the general stock.

The droppings of tubercular cattle also convey the germs to hogs which are allowed to follow them. For this reason hogs should be kept out of the cow lots. On the other hand, hogs can follow steers with comparatively little danger. Steers are not kept indoors as much as dairy cattle, and commonly are sold before they are old enough for the disease to develop to the point where it spreads germs through the droppings.

Raising Pork in the East

By Earle B. Shaw

A SURPRISINGLY large number of farmers here in the East seldom, if ever, produce any pork for the market. Ever since I can remember it has been a debatable question in the minds of many Maine farmers as to whether or not it was profitable to keep hogs on farms where little grain was produced and much feed must be purchased at the local grain store.

It is a common practice with many people in this section to give away, throw away, or otherwise waste large quantities of separator milk, inferior or wormy apples, and other waste products almost always to be found on an Eastern farm, but I am firmly convinced that much of it could be very well utilized through converting this waste into valuable pork.

I regret to say that many Maine farmers still continue to farm by guess; that is to say, they do not keep books on their farming operations and cannot say with any degree of certainty whether the various farming ventures show profit or loss, but they are always quite willing to make a guess.

Small pigs were high in price and scarce in spring of last year, but as we had a small amount of separator milk going to waste and we always have many wormy sweet apples that must either be fed to stock or left to rot upon the ground, I decided to purchase two small pigs and find out for myself if I could get a new dollar for an old one. The first two months the pigs were fed almost solely upon skimmed milk and sweet apples, after that this feed was supplemented by grain bought in town at the prevailing high prices charged for it last summer and fall. I am convinced that my method of feeding was far from ideal, and the results obtained were not what might be secured under a better feeding system; but I do feel sure that the figures given below will furnish a very satisfactory answer to the question that affords me a title for this article.

EXPENSES	
May 19—Purchased two pigs (weight 45 lb)	\$8.00
Feed purchased:	
50 lb middlings90
350 lb cracked corn	7.00
250 lb corn meal	5.05
Nov. 24—Butchering and delivering pigs	2.00
Total	\$22.95
RECEIPTS	
Nov. 24—366 lb hog @ 12c	\$43.92
This left me a net profit of \$20.97.	

Care of the New-Born

By W. P. Shuler

MANY stockmen in this country would save enough money each year to pay their taxes if they would only devote more attention to live stock at the time of the birth of the animals.

The pregnant females should be dieted and measures taken to provide an adequate amount of exercise to keep them healthy and strong. Breeders are very loath to work their mares when heavy with foal, preferring rather to have them well, fat and sleek, apparently thinking that by this the developing young will be better nourished. One of the fundamental principles regarding the development of the embryo is that, regardless of the state of nutrition of the mother, the nutrition of the developing young is uniform and constant. This is true unless the mother be so poorly cared for and fed that her vitality is greatly impaired.

The circulation of the blood is the channel through which this nourishment must reach the young. The blood is propelled through the vessels over the body by the action of the heart. The vigorous, moderately fleshed animal has a stronger and steadier heart action than the fat, idle one. Exercise is a great factor in the even, steady circulation of the blood. This is especially true of hogs, cattle, and sheep, which at the best have an imperfect, pampered heart action, due to being bred continuously for food production.

Ration Needs Much Alteration

Rations containing high percentage of fat and protein should be cut in half or discarded for a laxative carbohydrate diet, ten days to two weeks before the date of the expected arrival of the offspring.

Someone should always be in attendance at the time of parturition to see that the offspring receives the all-important first nourishment, which is necessary to strengthen the vital process and supply body warmth.

A blanket and rough towel should be at hand to dry the young, and if necessary keep it warm. Sometimes the young becomes entangled in the fetal membranes or after-birth, and is suffocated. These should be removed, and if the connections have not been severed with the body of the young, do this, tying the cord close to the body with a stout string dipped in pure tincture of iodine and finish the operation by painting the stump of the severed cord twice with iodine.

If the little fellows are weak, hold them up to nurse and syringe out the rectum with a solution of glycerin two ounces, soap one ounce, and water eight ounces, warmed to body temperature (100° F.). This will aid the first bowel action so necessary to the subsequent life and health of the young.

If the mother has fever or the udder is caked, artificial feeding must be the order. This does not present a difficult problem for any of the young except the colt. Here a low fat-containing whole milk is most desirable. It must be fresh, clean, and warm, and should be made up as follows:

For each pint, lime water four ounces, sugar one tablespoonful, whole milk twelve ounces. Use half of this for the first feeding, the remainder to be given in two hours. Great care must be taken to have the nurse bottle absolutely clean.

Orphan colts may be hand-fed and reared in this manner. After three days the sugar may be omitted, and regular feeding periods established three times in twenty-four hours. At the end of two weeks they will learn to drink readily from a bucket.

Colts reared by hand should be carefully guarded against cold and indigestion, as they are usually more delicate for the first month than others.

Salt and Charcoal for Hogs

SALT and charcoal should be provided to furnish mineral matter for hogs. They may be fed separately, but it is advisable to add salt to the charcoal, as it makes it more palatable and is especially good for hogs.

Salt should be available at all times. It is best to keep it in an open shed where it can be protected from the weather. Charcoal is best fed from the hopper or self-feeder to prevent needless waste.

A common practice is to burn cobs until the cob is well charred, and then the fire is smothered and the hogs are given access to this. Some people char their cobs in a pit, and when the fire has gained good headway the top of the pit is covered with a piece of sheet metal, and then covered with dirt.

In this way the charcoal may be used as needed. It is best fed with salt to make it more palatable.



Here is a concrete water trough that has proved to be a very satisfactory improvement on this Middle West farm



Dairying

Water Tank on Silo

By B. D. Stockwell

A READER who is considering the construction of a concrete silo wishes to know whether it is practical to build a concrete water-supply tank on top of it, and whether he will need to use extra reinforcement in the silo wall.

No extra reinforcement will be necessary, since the weight of the supply tank causes no additional outward thrust. The silo walls, however, should be at least six inches thick. Such tanks have various advantages, including ability to furnish enough pressure for fire protection because of their height, and there is no expense for a tower. In addition, very little piping is necessary, as the silo is usually near the barn, where most of the water is used.

Such tanks, however, are best adapted to silos not over 16 feet in diameter; a greater span calls for considerable engineering skill and special materials.



Combination tile silo and water tank

A silo tank 16 feet in diameter, in which the depth of the water is five feet, will hold 240 barrels, which compares favorably with the average available water supply. Tile silos are also strong enough to support such tanks safely, but tanks are not advisable for the average stave silo and others of relatively light-wall construction.

Cows fed a ration composed largely of silage produced 17 per cent more milk and 28 per cent more butterfat than other cows fed chiefly on grain, in a feeding test at the Ohio Experiment Station. The silage ration was considerably cheaper.

Sweet-Curd Cheese

By Irving Holcomb

I HAVE been interested in Mr. R. Robinson's excellent articles on cheesemaking, especially the one entitled, "Cheese Taste Nearly Lost." Now, the real reason why the taste for cheese is lost is that so much cheese is of poor quality. It is frequently shipped in ten days from the press. No American Cheddar cheese can be good unless left six weeks on the shelf. Three months would be better.

I was raised and worked on a dairy farm in old cheesemaking Herkimer County, New York. My father was one of the earliest cheesemakers in the country. The kind of cheese we made in those days would melt in the mouth. The method is still known as the sweet-curd process and requires little expense for fixtures. This point makes it a desirable cheese for farmers to make for their own use.

The record production of sweet-curd cheese is held by A. L. Fish of this county, who in one season made 1,000 pounds per cow from a dairy of 30 cows. Here is the process: The milk is heated to 90 degrees, after which enough rennet is added to coagulate it in forty minutes. Keep it covered. When coagulated it is cut with a wooden knife into squares two inches on a side. Cover and allow it to stand fifteen minutes for the whey to rise.

Then it is very carefully worked by

the hands ten minutes, or more, when enough heat is added to bring the temperature to 100 degrees. Hold at this temperature for thirty minutes, continuing to work the curd by hand until it separates into kernels a little larger than rice kernels. The whey is then drawn off and the curd pressed by hand to expel more of the whey. The curd is then worked again till very fine, after which it is salted. Allow to stand in the vat ten minutes and then put into the press.

Cheese from grass milk was kept on the shelf until October, when it was sold for five cents a pound in the early days, and a little later at six cents. Jessie Williams of Oneida County, New York, started the first cheese factory about the year 1857. Then came into vogue the present cheesemaking process, namely the souring of the curd in the whey and the working of the soft, tender curd with a rake instead of by hand. Permitting the curd to mat solidly together during the scalding process and grinding it in a machine all combine to drive out and waste that quality most sought for—the delicate flavor of the cheese. It also wastes 10 per cent of the value of the milk, for it takes 10 per cent more milk for a pound of cheese under the souring process than it did under the sweet-curd process I have described.

More High Cream Prices

By Carlton Fisher

THE announcement of \$16.39 being paid for a high-testing ten-gallon can of cream in Washington State has elicited other cases of high returns, among which are the following:

Harry L. Smith of the Crittenden Creamery in New York writes that on February 27, 1917, when butterfat was 45 cents a pound, one of his customers received \$10.39 for a five-gallon can. This can contained 38 pounds of cream testing 61 per cent. Another patron received \$16.96 for a ten-gallon can of cream containing 37.7 pounds of butterfat.

James Hammond, an Ohio reader, reports that J. O. Hearing of Perry County, Ohio, received \$10.33 for a five-gallon can of cream and \$18.14 for a ten-gallon can, the price at the time being 42 cents.

Mrs. S. D. Wham of Marion County, Illinois, writes that she received \$8.73 for a five-gallon can of cream when the price was 44 cents.

The highest prices reported thus far are \$18.14 for a ten-gallon can of cream and \$10.39 for a five-gallon can.

Cures Self-Milking Cow

A NEW YORK dairyman reports that he succeeded in curing a self-milking cow after all other means had proved of no avail, by using a wire weaner which cost but 25 cents. This weaner proved to be humane and also effective in preventing self-milking, and did not interfere with the cow's feeding.

Twins in Succession

By H. A. Lindenberg

A. H. HARNDEN, a prominent Texan as dairyman, possesses a cow that has a rather unusual record. The animal, a beautiful registered Jersey, was born March 7, 1914. On January 9, 1916, she gave birth to twin calves, both heifers. Again in December she produced twins again, this time a male and female.

Her milk production for the year was equivalent to a pound of butter a day. The picture shows this remarkable cow and the last pair of twins. Four calves in a year is considered exceptional even



This young registered Jersey cow produced twins twice in one year

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Automobiles

Auto Shells Corn

By John W. Vest

THE recent reference in FARM AND FIRESIDE to the use of automobiles for doing farm work leads me to give my own experience with a belt-power attachment. I bought it last fall and put it on my 20-horsepower car.

We ground corn and oats with it, also sawed wood, and it worked fine. The engine had power to waste. Finally our new four-hole corn sheller arrived. We put it together, put on the belt, and lined it up.

I said, "John, do you think it will pull her?" John said, "I do not know; let us try." I said, "All right," and so we started the engine going, slipped the belt on the pulley of the engine, and the sheller speeded up right away. We threw in a scoopful of corn, and to our surprise it was gone. We threw in a hopper full, and in a few minutes we had 50 bushels of corn shelled. This was just for a test; the engine had power to spare.

Since the first of last December we have shelled 40,000 bushels of corn, besides doing some jobs of wood-sawing. We shelled 40 loads of corn, averaging 55 bushels to the load, in eight hours. The radiator was not any warmer when we were through than if we had driven it to town five or ten miles. We have shelled many a load of corn in six minutes.

This is the only real way to shell corn, four or five miles from home. When through shelling corn, throw off the belt, get in the car, and in twenty or thirty minutes you are home again. Let the hired man take the sheller to the next job. In winter leave the side curtains on your car and ride inside where it is warm.

Car Pulls Hayfork

By La Varné McConnaughtey

HAVING read with interest the experiences of other motorists, I will give a few of mine. Our first car was a second-hand machine of 36 horsepower and the four-passenger type. This machine was of a class far above the average, but we did not have very good success with it. I am not of a mechanical turn of mind, and one who is unfamiliar with autos in general should not expect perfect success. So after running this car a couple of years we decided to buy a new machine.

In the spring of 1915 we bought a 30-horsepower four-cylinder car, electrically equipped, including self-starter. "Sixes" and "eights" were coming on the market at about that time. We considered some of the sixes in the thousand-dollar class, but were not very much impressed with the eights, which were then an experiment, except one that sold around \$2,000. So in order to play safe we took the good old four-cylinder type. Engineers had had more actual experience with this kind of engine, and consequently it had reached more nearly the perfection required in a car for everyday use.

During the summer of 1915 we drove this car more than 5,700 miles over all kinds of roads, sometimes slow and sometimes as fast as it would go, which at times moved the speedometer hand to 55. Even with this kind of driving, and sometimes carrying seven and eight people (which is slightly overloading a five-passenger car), we got an average gasoline mileage of 22 miles per gallon, and cylinder oil 800 miles per gallon. We also bought two new casings, shock absorbers, a bumper, license, and spent \$6 for a puncture-sealing compound.

Our total expense, including gasoline, oil, repairs, license, tires, and accessories, was about \$75, which is not bad for a car weighing 2,800 pounds and being driven over the rough roads of southwestern Ohio. I might add that this machine will soon be starting its third year of service, and not until the fall of 1916 was a spark plug cleaned. Since then that plug has been cleaned twice; the other three have never been touched. The valves have been ground once, but the carbon has never been cleaned from the cylinders. This machine still runs well, but an overhauling would probably not hurt it.

In addition to the pleasure derived

from an automobile, there is a great deal of utility. For the past two years we have used the auto to pull the hayfork for unloading hay instead of using a team. The machine is much faster than horses, will pull a large fork-load of hay, and do it at very slight expense. A trailer is another thing that is useful in making light hauls of 10 or 12 miles. Only a little more gasoline is used, and it saves much over that required to make the same trip with a team.

EDITOR'S NOTE: Readers of these columns are invited to send pictures of their cars and accounts of success in using them for business and pleasure. Articles used will be paid for, and all others will be promptly returned. Questions relating to the care, repair, selection and use of motor cars, will be answered through personal letter by the editor of this department. Address Automobile Editor, FARM AND FIRESIDE, Springfield, Ohio.

The Cost of Speed

By Thomas Keene

THE driver who persists in operating this motor car at high speeds may elude constables and police, but he cannot escape from the penalties which natural mechanical laws levy upon his car. Here are ten reasons why it is expensive, dangerous, and inconsiderate of others to speed.

Tires last about twice as long on a car that is driven at 15 miles an hour as upon cars driven at 30 miles an hour. Speeding generates heat, which is an enemy to rubber.

Driving a car around a sharp corner at 25 miles an hour does more damage to the tires than 20 miles of straight road work. Excessive side pressure on tires may pinch the tubes, and it always strains the side walls of the casings.



Taking curves at high speed is a severe strain on the tires

High speeds are likely to cause skidding and breakage of springs and steering gear, any of which are dangerous when speeding.

In proportion to the mileage obtained, high speeds require more gasoline and oil than a moderate rate of traveling.

Driving a car at excessive speed, especially over rough roads, subjects the bearings to enormous strains, causing them to wear much more rapidly than if the same mileage had been covered at moderate speed.

High speed may cause crystallization of rapidly moving metal parts that are subject to strain, and these may break at any time without warning.

A high rate of travel over earth, gravel, or macadam roads results in excessive dust and in injuries to the road.

High speeds interfere with the accuracy of steering, as is shown by the number of reckless drivers who have



Build good roads and reduce the cost of all kinds of travel. The saving is no less real to the car owner than to the man who drives a team

gone over banks and into ditches, especially on curves.

It is a strain on the eyes and the nerves of the driver and also of other passengers in the car.

Finally it is a menace to the pleasure and safety of others who use the road.

The majority of modern motor cars develop their maximum efficiency with lowest expense at speeds ranging from 15 to 25 miles an hour, depending on the make of car and condition of the road. Within this range of speed any accident that may occur is not likely to be serious; it is fast enough not to be "poky" and the car will give good service over a long period of time.

How Many Tube Patches?

"HOW many patches can there be on an inner tube and yet be serviceable?" asks an Ohio motorist. This question is one of several that have been received which imply that the number of repairs determines the life of a tube. That assumption is incorrect.

The serviceable life of an inner tube for an automobile tire is determined by the condition of the rubber, which if live will hold air well, regardless of the number of patches. To judge the quality of an old inner tube, take it in the hand, stretch it, and look for small cracks in the rubber. If cracks are found the tube is getting along to a point where it will soon split, and air will leak out. If no cracks are found, the rubber may be assumed to be non-porous and the tube still serviceable.

An inner tube well taken care of will outwear several casings. Among the precautions which insure long life are: Care in applying tires to rims so that tubes are not pinched or injured by tire irons, keeping tubes in a clean, dry, dark place away from tools and grease, the use of sufficient talc to prevent tubes sticking to casing and never riding on a flat tire with a tube inside. If you wish to run on an old casing that has blown out rather than on the bare rim, first take out the tube.

Good-Roads Dividends

By D. S. Burch

WHEN in 1914 the Missouri State Board of Agriculture issued its "Better Roads" bulletin, some of the claims made for good roads as crop producers no doubt seemed overdrawn. For instance, the statement was made for purposes of illustration that two years after the improvement of roads in the vicinity of Fredericksburg, Virginia, shipments of farm products from that town by rail increased from 49,000 tons, annually, to 71,000 tons, a rise of more than 45 per cent.

During the same time the cost of hauling a ton load a distance of one mile decreased from 20 cents to 12 cents. The total annual saving to the farmers of the county of which Fredericksburg is the county seat has been estimated at \$41,000 annually.

Such a saving of money by means of good roads perhaps seems a trifle fictitious to those familiar only with driving teams. Except when roads are at their worst, a team seems to travel about as well on a dirt road as on an improved one. But the farmer who owns a motor car quickly observes from the position of the throttle and the amount of gasoline used that improved roads require much less power in proportion to the load. In bad weather the difference is even more obvious.

Thus, entirely aside from the pleasure value of good roads and the ability to use them every day in the year, they reduce the cost of all kinds of travel and, as the Missouri bulletin claims, "are just as real a source of profit as the increase in the price of wheat."

Farmers Can Win the War

[CONTINUED FROM PAGE 3]

States from New York to the Rocky Mountains. The second conference was held April 11th by the Secretary with ninety farm-paper publishers and editors.

"The importance to the nation of a generously adequate food supply for the coming year cannot be overemphasized," Secretary Houston told us. "Every effort should be made to produce more crops than are needed for our own requirements. Many millions of people across the seas, as well as our own people, must rely in large part upon the products of our fields and ranges. This situation will continue to exist even though hostilities should end unexpectedly soon, since European production cannot be restored immediately to its normal basis. Recognition of the fact that the world at large, as well as our own consumers, must rely more strongly on American farmers this year than ever before should encourage them to strive to meet these urgent needs."

Secretary Houston then showed us that the greatest and most important service required of our agriculture is to enlarge production of the staple food crops. Because of the shortage of such crops throughout the world there is no risk in the near future of excessive production, such as sometimes has resulted in low prices to producers. This is particularly true of the cereals, and of peas, beans, cowpeas, soy beans, and buckwheat. There is hardly a possibility that the production of these crops can be too great this year, and there is abundant reason to expect generous price returns for all available surplus.

"The most effective step that may be taken to increase the production of these crops," concluded Secretary Houston, "is to enlarge the acreage devoted to them in the regions where they are grown habitually. This expansion of acreage should be to the limit permitted by available seed, labor, and equipment."

This resolution, addressed "To the Farmers of America," was adopted by the farm-paper publishers and editors at the food conference:

"With the entrance of the United States into the world war, farmers of America are laid under the most insistent and inexorable obligation. It is a war of food more than munitions. Nature has turned a forbidding face on the early harvests of the world. A shortage of more than fifty million bushels of winter wheat at home and a deficiency in all crops abroad sound a trumpet call to the farmers to bend every effort to the limit of human intelligence, energy, and ingenuity to wring from the earth its maximum yield in all the coming harvests.

Rewards Alluring and Certain

"Patriotism and profit should stimulate them. The rewards for intelligent farm toil were never so alluring and certain. Every man in his own field must be the judge of methods.

"This appeal coming from publishers and editors of farm journals in session in St. Louis, representing a combined circulation of eleven million subscribers, seeks to arouse producers to the gravity of the situation and to enlist them in the army most necessary to the nation's defense—the army of farm men, women, and children—whose devoted and intelligent effort will sustain our fighting forces and bring succor to starving men, women, and children, and insure inevitably the peace of the world."

The farm-paper publishers and editors endorsed the report and recommendations formulated and adopted by the state commissioners of agriculture and representatives of the agricultural colleges.

Here is a part of the report:

"The American farmer has long shown his ability to produce more food to the man and at lower cost to the unit than any other farmer in the world, but he has never had to do his best. He needs to do his best now. This is not the time in which to experiment with new and untried crops and processes. It is very important that the farmer devote his principal efforts to the production of such crops and the employment of such methods as are well established in his community, and as are likely to yield the maximum return in food and clothing material.

"Within the next six weeks the final measure of crop acreage and food production for this year will have been established. We urge the importance of the immediate mobilization of all available service of the federal and state departments of agriculture and the colleges of agriculture in co-operation with the press, the banks, the commercial organizations, the religious and social societies, that all may heartily join with the farmer in performing the patriotic

duty of providing and conserving food. "East of the one hundredth meridian, the corn area may be increased to advantage, with a view to its uses both for human food and animal production. The production of a normal cotton crop is necessary. This can best be accomplished by more intensive cultivation and increased fertilization rather than by increasing the acreage and thus neglecting the food and forage crops so important to the South.

"In the districts where wheat has been winter-killed, replanting is suggested with oats, corn, or sorghum, as climatic conditions may determine. Where barley and oats are proved and reliable crops, they should be planted to the maximum that can be effectively handled. In portions of the Northern and Eastern States where the season is too short for the great staple crops, the buckwheat acreage may well be increased. An important increase in our food supply may be made by enlarging the area planted to beans and potatoes.

"Sweet potatoes in the South will undoubtedly be needed in their fresh state in larger quantities than usual, and also for storing for winter use, either in their natural state or as canned or desiccated products. Where peanuts succeed, production may well be enlarged because of their value both as food and forage. A reasonable seed reserve for replanting tilled crops should be held.

Boys and Girls Can Help

"We appeal to the youth of the nation to put forth every effort to produce foodstuffs in gardens and fields. There could be no better expression of true patriotic devotion to the country. It has been demonstrated through the boys' and girls' clubs that it is possible for the farm family to supply itself with much of the food required, thereby releasing the commercial product of the country for the needs of the people in the cities and in foreign lands.

"The live-stock holdings of the farmers of the United States are already too low. It would be most unfortunate if these numbers should be diminished further under the pressure of the present demand for food. Indeed, an early increase of the animal products of the country should be made.

"Milk production could be increased by more liberal and intelligent feeding. Pork production could be increased substantially through the more extensive use of fall litters, better care and feeding. The poultry products of the United States could be doubled within a year.

"Contagious diseases of farm animals take a toll of more than a quarter billion dollars annually. More than half of this loss is due to controllable diseases, such as hog cholera, blackleg, and Texas fever.

"One of the principal limiting elements of food production is the labor supply on the farm. Indiscriminate enlistment from the farms with no plan for labor replacement will reduce food production below its present low level. The plan for public defense should include as definite a provision for enlistment for food supply as for service at the front.

"In addition to more than one half of those applying for enlistment and rejected because of unfitness for military service, there are more than two million boys between the ages of fifteen and nineteen years in the cities and towns not now engaged in productive work. These constitute the most important unutilized labor resources available for this emergency.

"At present prices a larger use of corn and rice products as partial substitutes for the more expensive wheat products is suggested. The home storage and preservation of foods, such as eggs, vegetables, fruits, and meats, should be increased."

After attending these food conferences in St. Louis, I am convinced that the food situation which now confronts our country is a great emergency—the greatest perhaps in its history. Emergency measures are needed to meet the unusual conditions. All of the recommendations made in the food conference report and resolution were formulated because everyone present believed they were necessary in order to meet present conditions. They are war measures.

Every State in the Union is striving to help you and your family in carrying out these or other plans for assuring an adequate food and clothing supply. If you need money to buy machinery, seed, fertilizer, or any other thing that will help you to speed up production, write to your governor or state commissioner of agriculture. If they haven't made provision to provide supplies, write to me and I will take up the matter with Secretary Houston at once. It is probable that Congress will make an appropriation to meet just this need.

Truly, upon the farmers of the United States rests the fate of the war. The farmers of America can win the war.

EW

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Garden—Orchard

Sharp Garden Tools

By L. K. Long

WHERE the garden itself is not highly esteemed, the tools will be poor as a matter of course. But even people who think a lot of their gardens are sometimes very careless about the condition of their tools.

The proverb says, "If the iron be blunt, then must he put to it the more strength." Sharp tools greatly economize strength. I find that sharp bright tools that are tight to their handles add to the enjoyment one has in his work. To have a hoe slip readily through the soil, doing a nice clean job, contributes to one's self-respect and makes him proud of the work he is doing. If the hoes, spades, weeders, and other tools are once put in good shape, they can be easily kept sharp by the occasional use of a file; and with an old kitchen knife the rusty places can be scraped clean so that they will soon scour smooth.

By all means, let us furnish the boys with good sharp tools and show them how they can be used to best advantage and kept in order. Nothing so depresses a boy and disgusts him with gardening and farming as to be compelled to use dull and unsuitable tools.

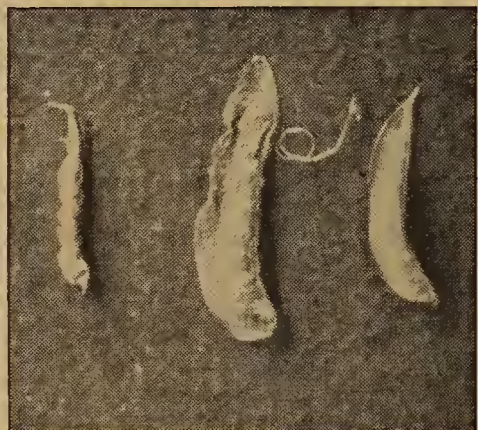
A Corn-Pea Combination

By Mrs. S. McCoy

DID you ever try growing table peas with field corn? If not, try it. I like the Sugar Crowders best. There are two varieties of these delicious peas—the dark brown speckled sort and light clay-colored pea. Owing to the fact that the vines bear abundantly, even though the season be dry, they are a very desirable pea to grow. My other peas may fail on account of droughts, but I am always sure of a good crop of Sugar Crowder peas. I plant one pea in every hill of corn until the desired amount of peas is planted. The corn supports the vine, which grows luxuriantly here in Illinois, bearing pods some of which are six inches long, closely packed with peas.

I begin cooking Sugar Crowders as soon as they are sufficiently matured to "hull out," which is early in the fall. In this locality almost every farmer's wife raises a sufficient amount of Sugar Crowders for their winter's supply of dried peas, besides a few bushels to sell. At the present time they are selling for 12 cents a pound.

It will pay anyone, even though he has only a limited amount of ground, to plant a patch of corn and Sugar Crowder peas this season. I have none to sell.



Photograph of three varieties of cured sugar-pea pods sent to the editor of FARM AND FIRESIDE by growers. These peas are also called sweet-podded peas. Both pods and peas are cooked and eaten

Plant Setting by Machine

By Bessie Holmes

ON OUR farm we have been wonderfully helped by use of the plant-setting machine. The machine herewith pictured transplanted successfully all the plants that were formerly set by hand, such as tomatoes, cabbage, strawberries, tobacco, sweet potato, etc. At the time of transplanting, the plants are watered and can be fertilized by the machine in any quantity desired.

We use two horses and three persons to operate our transplanter. Besides the driver, two persons sit behind the

machine close to the ground to drop the plants just as the time-clicking device requires. An iron roller pulverizes the soil and firms it in front of a device that opens the furrows for the plants. In front of the plant droppers an apron is stretched which carries a sufficient number of plants to set at least two rows.

The work requires careful attention in order to have a constant supply of plants always ready so that no skips will occur. The plant to be set does not need watching, but the one being separated and got ready is the important item. Dependable boys or girls can do the plant-dropping as well as older persons. From three to five acres we find make a good day's work in transplanting, whereas a man setting plants by hand, with the assistance of a boy to drop the plants, with the rows already prepared in advance, will set about 5,000 plants, or one acre of a crop like cabbage, in a day.

We find some of the advantages of machine planting are that the plant roots are more evenly spread in the soil, and the plants make a quicker and stronger growth. No matter how dry the soil, the watering device insures a good start. The grower is also independent of the small army of hand



planters otherwise required for extensive operations. Here in southern Indiana suitable and dependable help can no longer be secured. The rows are set exactly in line, which makes cultivation easier and more effective, and the soil is left in a better condition of tilth than is possible by handwork. Some plant-setting machines have a potato-planting attachment. On the whole, we should feel almost helpless without our transplanter.

My Intensive Garden

By E. M. Anderson

TO THOSE making use of horse cultivation in their garden my plan will seem too crowded. But I find that by keeping the weeds out and the soil thoroughly cultivated, and using plenty of fertilizer, the yield from a small area can be made quite remarkable.

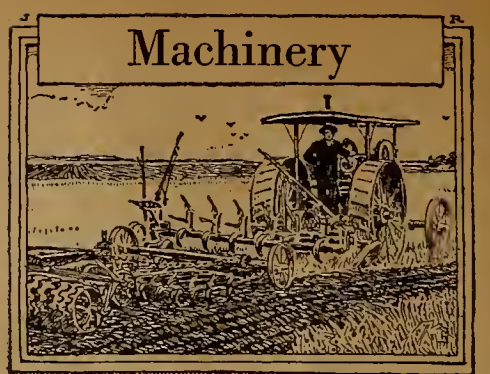
I alternate hills of cucumbers with tomato plants, and both do practically as well as when they are planted by themselves. This is made possible by the fact that early "cukes" will produce a very good harvest before the tomatoes are ready to bear. I also plant cucumbers near the onion section of the garden, so that they can take possession of the onion rows while the onions are ripening, without materially lessening the yield of either crop. I plant my Danvers onions sufficiently thick so that some bunch onions can be thinned out.

Peas and pole beans make for me about double the yield, when poultry wire is used for trellises, over what I can secure when the vines are left to sprawl on the ground, and this plan also saves valuable space. A row of 50 feet of early and late varieties of peas, allowed to vine on a poultry wire trellis, supplied our table for a family of five during the entire pea-growing season.

As an illustration of the production of my beets grown on the intensive plan, I harvested over two dollars' worth of high-quality beets from a row 40 feet long, and this row was only an average one of several. By planting rows of carrots near the rows of early cabbage, the cabbage was out of the way in time to give the carrots plenty of room.

Seven rows of sweet corn were planted rather closer than I should have wished, but the extra care given it resulted in a bumper yield of extra quality, which sold on the streets of our little western New York city for 20 to 30 cents a dozen ears.

Asparagus furnished us an abundance of choice cuttings the second year after setting, and gives promise of a heavy yield for market this spring. On the whole, the value that was realized out of this little plot of garden seems quite extraordinary, for in addition to using everything grown generously for our own table it yielded a marketable surplus at the rate of \$300 an acre.



More Than 34,000 Tractors

By C. O. Reeder

A COUNT of the gasoline and kerosene farm tractors on farms in the United States was undertaken in February, 1917, by the Office of Farm Management of the U. S. Department of Agriculture. Inquiries addressed to 32,000 selected correspondents resulted in answers giving the total number of farm tractors as 34,371. This does not include steam-driven tractors, nor those used for road work, or any that are out of commission or not to be used this season.

The following States each have over 1,000 tractors owned by bona-fide farmers. They are listed according to the number of tractors in each:

Illinois, 3,202; Kansas, 2,287; Texas, 2,235; Iowa, 2,223; North Dakota, 2,137; Indiana, 1,852; Nebraska, 1,773; Minnesota, 1,575; South Dakota, 1,527; California, 1,358; Ohio, 1,305; New York, 1,210; Missouri, 1,141.

Nevada has only 19 tractors, which is the smallest number of any State. Arizona and New Hampshire each have 23. The Department of Agriculture explains, however, that these are the minimum figures, showing tractors known to be in actual operation, but in the count a good many have been probably overlooked, especially in the more sparsely settled Western States.

Wide-Range Truck Machine

By Calvin Fraser

THE large number of separate operations necessary for best results in truck-farming have stimulated the invention of the machine shown in the picture. It will plant corn, beans, peas, cotton, and peanuts, ridge and side-dress asparagus, sow fertilizer, and



This truck farmer's machine performs nine operations at once, and has a wide scope of usefulness

either ridge or level off the land as desired. All of the attachments and combinations are not shown in the picture. But as you see it, it is sowing beans together with applying fertilizer. In addition, it is opening its own furrow, covering the seed, rolling the ground over it, and marking the next row.

The machine is of two-horse draft, handled by one man, and is intended to do as much work in a day as is usually done with five men and five horses or mules, each doing a part of the work separately.

Securing a Patent

"WILL you please tell me how to obtain a patent? Must I hire a lawyer?" This question is asked by an Indiana reader.

A patent is secured by application made to the Commissioner of Patents at Washington, D. C., after a hearing upon the application. The application must contain a complete description of the article with full statements as to its uses, etc. As the procedure for obtaining a patent is rather complicated and very technical, it is almost necessary to have the services of a lawyer. As this field of law has been specialized, it would probably be wise to secure the services of a patent attorney, as the ordinary lawyers do not ordinarily have much to do with patents.

Blasting "Blind" Stumps

By Harry Gough

SO MANY farmers appear to have difficulty in getting out "blind" stumps with dynamite that a description of the method I use may be of interest.

I recently blasted about fifty of such stumps averaging from two to three feet in diameter at the ground level. Most of them were pine. They were standing in a wet meadow and were almost as sound as the day they were cut. Someone had tried to get rid of them by using an adz to cut the tops off. In other words, they were cut off just at the ground level, no part of the wood showing above the ground. That is why they are called blind stumps.

My first operation was to make a hole under each stump with a sharp-pointed steel punch bar. I always aim to get the hole down a little more than half-way under the stump. I then inserted a three-foot length of fuse in the open end of a No. 6 blasting cap and used a regular cap crimper to make the joint water-proof and prevent the fuse from pulling out. Then I punched a hole with the sharp-pointed handle of the cap crimper in one side of the stick of dynamite near the top and inserted the cap in the hole. I then tied the fuse to the cartridge by passing the string twice around the dynamite.

I used a broom handle to push the charges of dynamite into the hole under the stump. If I use more than one stick of dynamite, I always put in last the one to which the cap and fuse have been attached. The hole is then tamped full of moist soil with a broom handle and the fuse is ready to light. The dynamite does the rest.

Uses Electrical Firing

I find that for large stumps it isn't advisable to use cap and fuse for firing because that necessitates loading the charge all in one hole under the stump. It is better to distribute the charges at several places. The main lifting charge should be directly under the center of the stump; the other charges should be just under the edge, if possible directly beneath the principal anchor roots.

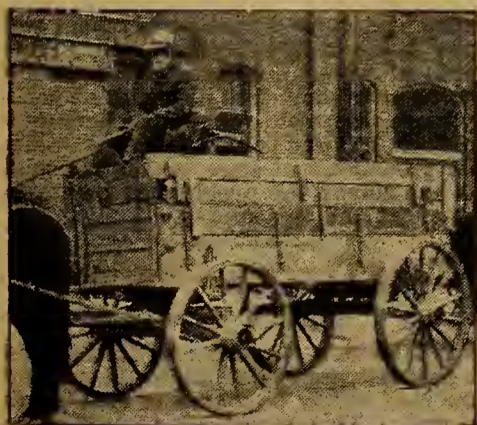
Charges distributed in this way must be fired with electrical blasting caps and a blasting machine, because it is absolutely necessary to have the charges go off at exactly the same instant. This cannot be accomplished with fuse because no two lengths of fuse burn at precisely the same speed, even if they are cut to exactly the same lengths.

In electrical firing the blasting operations should be conducted in the following order:

First, punch the holes in the ground. Then insert the caps in the side of the dynamite, either tying them in or by a half-hitch of the wires around the cartridge. Then load the charges into the holes and tamp them in. Next connect the cap wires to the leading wire, and last connect the other end of the leading wire to the posts of the blasting machine. This latter operation should not be done until it is seen that everyone is at a safe distance from the stump. All that then remains to be done is to raise the handle of the blasting machine and push it down hard. By this method I disposed of 50 stumps in less than a day.

Long Service From Wagon

THE farm wagon in the picture has seen twenty-three years of hard service, including stone-hauling, and has never been to the repair shop. Nor has it received a repair of any description elsewhere.



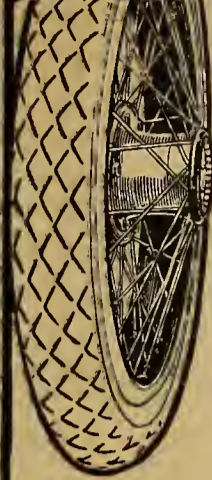
This wagon has been used for twenty-three years without repairs, painting, or resetting of tires

While this is exceptional service, it speaks rather better for the wagon than for the care it has received. No piece of farm equipment, however sturdy, will last indefinitely, and a reasonable amount of upkeep, such as occasional painting and minor repairs, will help any implement considerably in its race against Father Time.

The answer to the Health Question often lies in a change of table drink



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30x3 1/2	9.95	11.10	2.60
31x3 1/2	10.55	11.60	2.75
32x3 1/2	11.50	12.95	2.90
34x3 1/2	12.15	13.35	3.05
31x4	14.75	16.60	3.50
32x4	15.05	16.85	3.60
33x4	15.75	17.20	3.65
34x4	16.10	17.55	3.75
35x4	17.00	18.60	3.85
36x4	17.20	18.65	3.95
34x4 1/2	21.65	23.65	4.55
35x4 1/2	22.70	24.70	4.65
36x4 1/2	23.05	25.15	4.75
37x4 1/2	23.95	26.10	4.95
35x5	24.90	27.25	5.40
36x5	27.10	29.60	5.65
37x5	26.40	28.85	5.80

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Kirstin Stump Puller

This KIRSTIN One Man Stump Puller is in a class by itself. It is as superior as it is different. Just a steady back and forth motion on the lever gives tons of pull on the stump. The secret of its great power is in double leverage. Made of high-grade steel, combining great strength, durability and light weight. Soft steel clutches grip and pull without wear on the cable. Clears over an acre from one anchor. Changes the speed while operating.

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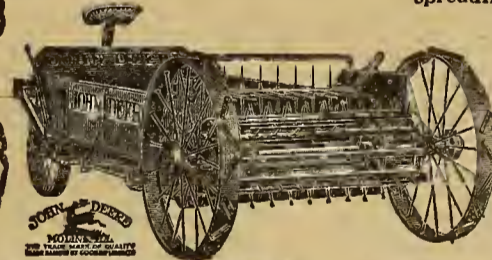
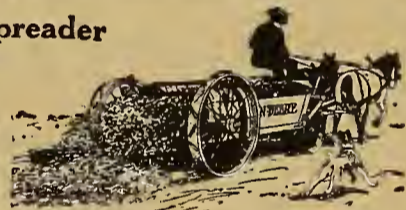
John Deere Spreader

The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

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He handles a line of high-grade implements—and you can see before you buy. In the busy season, when work is pressing, he can furnish repairs promptly for the goods he sells.

If, by chance, he has n't in stock just exactly the style of implement you want, he can give you quick service in getting it to you.

John Deere factory warehouses with immense storage rooms have been established in various sections of the country. Every John Deere dealer is conveniently located to one of these houses.

This, really, gives you two supplies of implements—the stock carried by your home-town dealer and that of the factory warehouse.

JOHN DEERE, MOLINE, ILLINOIS



Crops and Soils

Farm Bureau Pays Its Way

By Carl Elliott

THAT the farm bureau is an investment for a county, and not an expense, has been clearly demonstrated. In some cases a single farm has profited enough in dollars and cents to pay the entire cost of maintaining the bureau for a year.

In Allen County, Kansas, a 10-acre orchard, which the purchaser intended to dig out, was, at the suggestion of the county agent, pruned and sprayed. In a single season it netted the owner \$1,476.

Sweet clover used as a green-manure crop in that county has increased the yield of corn an average of 19 bushels an acre on several farms, and has furnished from three to five times as much pasture an acre as native grass.

By carefully studying comparatively the methods of filling a large number of silos, changes were suggested in the organization and management of crews that have saved many silo owners from 25 to 50 cents a ton on their filling expense.

One mother-daughter canning club in Leavenworth County, Kansas—a farm bureau enterprise—canned almost 10,000 quarts of vegetables, fruits, and meats. Drainage systems have been worked out on a large number of farms in the county, reclaiming otherwise valueless land that is now worth several thousand dollars.

Leavenworth County grows 15,000 acres of oats, and the loss from smut amounts to nearly 300 acres of that area each year. Farmers in that county plow, prepare, sow, and harvest that many acres of oats each year, and get nothing but the straw for their work. The farm bureau has shown how this loss may be prevented, and an unusually large number of the members are now saving the grain which was formerly lost.

Growing Sweet Clover

By John Coleman

SWEET CLOVER is the only tame forage plant that is proving successful on much of the native pasture land. When plowed under, sweet clover returns as much nitrogen to the soil as any other legume which will grow successfully on that land.

The maximum return from sweet clover is received within two years after seeding, while that from alfalfa is not made until the third or fourth year. A neighbor seeded 20 acres in white blossom sweet clover in April, and on June 10th he turned 20 ewes and their lambs upon the crop, where they pastured for the balance of the season. This is not an isolated instance. Hundreds of persons can give similar testimony.

Sweet clover as a pasture crop is past the experimental stage. Thousands of farmers have tried it, and have become enthusiastic growers. Sweet clover is a good example of crops which are not grown because of prejudice. This prejudice arose in most cases from a lack of information regarding the true value of the crop.

Raising Pop Corn

By M. Baird

POP CORN ought to be grown on every farm. If there is too much other work to be looked after, let the children care for it. They will not only find it a pleasant task, but will make some money at the same time. Get them interested in the work of the farm by giving them something to do that will interest them—something they can call their own.

Pop corn can be grown on any well-drained, fertile soil that is suitable for field corn, but this soil must not be too fertile, as pop corn has a strong tendency to run to stalks. Selection of seed should be made the same as for field corn. Good White Rice pop corn grows from five to seven feet in height, and White Pearl from six to eight feet. Both kinds are good sellers on the market.

The average production of these varieties is about 60 bushels of ears to the acre. This can be sold on the local market at very good prices. If grown in the rotation it should take the place of ordinary field corn, or may be grown in place of one of the money crops, such as potatoes. Do not plant it next to field corn, as the pollen will be readily mixed.

It ripens in about one hundred days, when it should be shocked in the field, allowing it to dry before husking. The great difficulty of keeping pop corn from one year to another on account of rats and mice is the reason this paying business has come into the hands of a few.

But this should not be so great an objection to the growing of pop corn, for with the growing demand for it in the towns during the fall and winter a ready market can be found as soon as it is harvested.

Width of Corn Hills

By B. Merideth

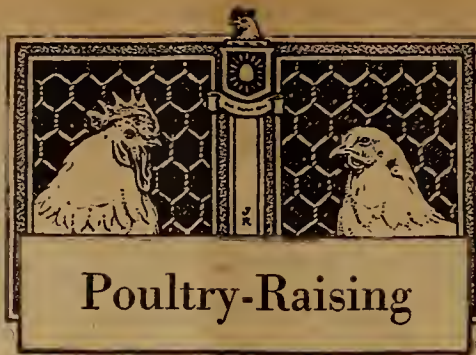
MANY farmers plant their corn too closely, too thick—the hills aren't far enough apart. This is important if the plants have to face a drought.

One ear of fair size will plant a row nearly 80 rods long. But if it does not grow, one tenth of an acre will be vacant.

This will mean not only the loss of one tenth of an acre and the corn that might have been produced from it, but also a loss of all the farmer's work every time he cultivates this vacant space.

Supposing a person's seed corn is good, does he know how far apart he is to plant it? Corn often is planted too close in the row, sometimes too far apart, and perhaps is more often unevenly distributed in the row. Periods of dry weather are likely to come, and corn that is too thick is going to be injured the most. In fields where the corn is too thick a lot of the stalks produce only nubbins, and a lot more fail to produce corn at all. These stalks that do not produce ears are in the way, and use up the moisture and plant food that should go to the development of better stalks. If corn is planted thinly and the season is unfavorable, it will give the plants a better chance to develop, and still produce a large crop.

The conditions of rainfall and climate in the different parts of the States vary so widely that one rate of planting will not do for all sections. In States east of the Missouri River, 20 to 24 inches is close enough where corn is planted a single stalk to a hill. A little farther west, 24 to 30 inches is close enough. In portions farther west it should be planted as far as 30 to 36 inches apart in the row.



Poultry-Raising

Score Again for Sour Milk

By B. F. W. Thorpe

A FEEDING experiment, lasting for a full year, to determine the value of sour milk as a substitute for commercial beef scrap for laying hens, recently concluded at the Missouri State Experiment Station, shows that hens fed all they wanted of good quality sour milk in connection with scratch grain and dry mash returned \$1 profit for each three hens above that returned by hens fed the same grain ration but with beef scrap taking the place of sour milk. Hens fed a good mixture of scratch grain and dry mash without beef scrap or sour milk did not lay enough eggs to quite pay for their feed.

Hens in the experiment consisted of three pens of 25 hens to each pen, of same age, breeding, and general condition. The 25 hens in the "no meat" pen laid an average of 65 eggs each. The

hen will lose anywhere from 10 to 40 days every time she goes broody. The average is from 15 to 20 days.

It is easy to see that if broodiness could be overcome the profit from a given flock would be considerably increased. It is quite possible that non-broodiness is an inherited character, so that if we breed only from non-broody birds we may in time establish a non-broody strain. This problem is one that the agricultural experiment stations of the country are attempting to solve.

In the meantime, why not keep a record of the broody hens by putting on colored leg bands as suggested. Then keep out of the breeding pens all birds which go broody a large number of times. Those hens which do not go broody at all may be mated to a male whose mother did not go broody. This plan can do no harm, and if non-broodiness is an inherited character sifting out the broody trait ought not to be a very long process.

Plan for Chick Pasture

NEVER forget that plenty of fresh green feed is about the most important thing in developing healthy growing young fowls. Not only this, fresh green clover, rape, or alfalfa pasture cuts down the expensive grain bills nearly one half. The chicks are largely automatic creatures in their ranging, and if the tender green pasture is not plentiful within easy reach they will go without rather than range a long distance where there is danger of hawks and other chick enemies.



Chicks housed in these brooder coops get the full benefit of fresh clover pasture. When the clover becomes tough they are shifted to fresh rape pasture.

beef-scrap pen averaged 107 eggs each, and the sour-milk pen 131 eggs each.

The cost of feed per hundredweight used in this feeding experiment was wheat, \$1.66; corn, \$1.60; bran, \$1.20; corn meal, \$1.70; shorts, \$1.40; beef scrap, \$3.25; sour milk, 20 cents. The average selling price of eggs for the year was 20 cents a dozen.

This experiment shows that hens of average laying quality fed a well-adapted ration consisting of scratch grain and dry mash and sour milk can be depended on to return at least a dollar of income per hen above cost of feed, reckoned on a basis of present average prices of feed and eggs. Other similar official experiments prove the same point, even when the experiment included a large number of hens.

Confine the Pigeons

By F. H. Valentine

PIGEONS spread disease when flying at large. They are very promiscuous in their visits, and carry disease germs from infected places on their feet. Not only do they spread poultry diseases, but any live-stock or other germ disease. Many a mysterious outbreak might be traced to this source. Flocks of pigeons are a very picturesque feature of the landscape, but are entirely out of place in our closely settled modern communities. They may carry human disease germs as well as any others.

A Leg Full of Bands

By L. E. Card

IF ANY poultryman will take the trouble to mark with a colored leg band every broody hen that he discovers or places in a broody coop, and will put on an additional band every time any hen becomes broody, he will doubtless be surprised at the end of the season to find some hens wearing five, six, seven, or even more bands of this color indicating broodiness. These bands will be unmistakable evidence that such hens have not been efficient egg producers. A

My regular plan is to prepare plots of tender young pasture, containing a mixture rich in red and white clover and blue grass, where the brooder coops can be placed as soon as the chicks are strong enough to look out for themselves. These pasture plots are so arranged that they can be rotated and be broken up at least once every year, thus keeping the soil free from foulness which otherwise would breed chick diseases and also fail to furnish the fresh pasture that must be provided.

Lower Living Costs

By Mrs. B. H. Slagle

MY NEAREST neighbor became a chicken and egg hungry last year, and made the attempt to produce her own supply.

Her start was made with 10 hens and a supply of hatching eggs purchased sufficient to raise a flock of 65 layers and three male birds, besides selling \$80 worth of young poultry. Her accounts for the year show that her sales of poultry more than paid for raising her present flock, and she is now getting a profitable production of eggs, and is satisfied she has solved the problem of her family's meat and egg supply.

Tom Turkey—Mormon

By H. V. Frank

THE Kansas Experiment Station has demonstrated that 12 to 15 turkey hens may safely be mated to one vigorous male. This is contrary to past practice of most turkey breeders. If that number gives good results it is a wasteful practice to mate one Tom with one to three hens, as is frequently done.

The same station has also shown that in a flock of 25 or 30 turkey hens, which require two Toms, both should not be allowed to run with the flock at once, because of their disposition to fight. One should be confined one day and the other the next. This coincides with approved practice with other fowls, especially when closely confined. EW



Harrowing the land shortly after plowing pulverizes the clods, and helps to conserve the soil moisture by preventing evaporation.

Health Talks

E. Spahr

A MOTHER finds that her children always get "sick spells" in spring and summer, and she wants to begin a preparedness campaign that will keep them well this summer. A Kansas doctor recommends this spring program to the people in his county:

- Get up,
- Clean up,
- Screen up,
- Paint up, and
- These will keep you up.

In other words, clean up your house and grounds, open your windows, see that your children have good water, good food, plenty of fresh air, and are not subjected to disease-breeding agencies like flies and mosquitoes, and they ought not to have "sick spells" this summer.

To Remove Warts

What will remove warts from the face?
O. L. M., Ohio.

RUB them with a piece of bluestone daily, until they get sore and go away.

Relief from Hay Fever

Where can the pollen cure for hay fever be obtained? Have suffered with it for fifteen years.

A. F. W., South Carolina.

POLLENTIN DUNBAR, with full directions for use, can be obtained from the wholesale supply houses in any of the cities. Your physician or druggist can obtain it for you. I have had no experience with it.

Olive Oil for Gall Stones

The doctors say that my father has gall stones. A friend has advised the use of olive oil. How much and how often can it be taken?

L. H. I., West Virginia.

YOUR father could hardly take too much olive oil. To produce effect he should take at least one ounce every morning before breakfast, and possibly the same amount at night. It is supposed to be a food, and it takes quite a quantity to lubricate the whole alimentary canal.

Intestinal Gases

I am in good health except I am bothered with chronic and increasing condition of intestinal gas. I am careful of my diet and do not eat inordinately.

E. M., Vermont.

FOR an intestinal antiseptic, take a tablet of bismuth subgallate, 5 grains; pepsin (pure, 1-3,000), one grain; nux vomica ext., 1/4 grain; zinc sulphocarbolate, 1 grain. Take one tablet after each meal. Keep your bowels open and continue your restricted diet.

How to Reduce Weight

What can I do to get thinner? I weigh 200 pounds, and am still increasing. What exercise and medicine and diet must I take?
W. C. L., Texas.

REDUCE your liquid diet and partake of all succulent food sparingly. Use saccharine in place of sugar. Take one anti-obesity tablet before and after meals. Acidulate all the water you drink with lemon juice or other acid. Take a dose of magnesia sulphate before breakfast, and take all the exercise you can stand.

Cold Feet

My feet have such hot and cold spells. When I go to bed they are warm, but towards morning they get very cold.
S. S., Indiana.

TAKE a 1/40 grain tablet of strychnia three times daily, omitting Sunday. Wash your feet in cold water and rub them well with a coarse towel, and at night wear bed slippers.

Cigarette Habit

Can you recommend anything that will cure me of the cigarette habit? I smoke a great many, and think they make my catarrh worse.

C. S. P., Missouri.

FOR your cigarette habit paint your throat and the roof of your mouth with a nitrate of silver solution of 4 1/2 grains to the ounce of distilled water every time you have an inclination to smoke. If this solution is not strong enough, have the druggist double the amount of silver solution. Paint it over the inside of the mouth with a camel's hair brush, and if it is strong enough you will not want to smoke, because it will taste too badly.



"In Union There is Strength"

A. Lincoln

FROM the beginning of the Firestone business, Lincoln's advice was heeded by its founder and present head, Mr. Firestone. He saw the power in singleness of purpose, and the roots of Firestone success are laid deep in organization.

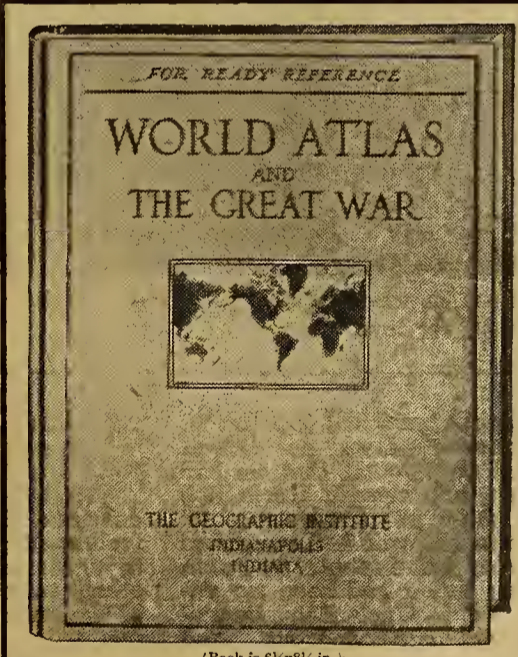
The Firestone factory and sales forces everywhere work together to produce highest quality at lowest possible cost. They want Firestone Tires to be universal in use, to reach all the people. They know that motoring reaches its best possibilities when on every machine in all seasons, the equipment is—

Firestone TIRES AND TUBES

Best from the mileage standpoint, toughness of tread and strength of body. And this toughness is combined with the resiliency demanded for easy riding and car protection.

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The world atlas, illustrated here, gives the first authentic account of the events which led up to the war—a summary of its great battles—sketches of its great men. It gives 94 full-page colored maps of all parts of the world. It describes the Panama Canal in detail. The seven wonders of the world, the history of political parties, and hundreds of interesting things are included in it.

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FARM AND FIRESIDE 2 years } and then but 25c a month until \$1.00 is paid.

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Full directions in each package of Sloan's Liniment tells of its numerous uses. Endorsed by thousands of farmers for sprains, swellings, bruises, etc.

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In which the wheel of fortune turns out new surprises for Leslie Brennan, and brings her at last to the Gate of Heart's Desire

The Blue Envelope

It Proves to Have Been One of Dan Cupid's Magic Missives

By SOPHIE KERR

PART X

I WAS very tired the next morning, for the reaction after all the excitement had set in. I felt beaten and sore all over and as if I never wanted to get out of bed. I even had my breakfast in bed, and with the tray there came a great basket full of flowers—pink roses and mignonette and apple blossoms—the most beautiful thing! There was no card with it, so I rather thought Uncle Bob must have sent it. I lay in bed and feasted on toasted buns and the flowers simultaneously, and felt a little bit like the once-upon-a-time Leslie Brennan who had had so many flowers sent to her and who had breakfasted in bed more often than not. How far away that Leslie Brennan seemed now!

The maid told me that Mr. Kennedy had telephoned and said that I was on no account to go to work that day. So I didn't, for I didn't feel like it. I wanted a day of perfect ease, with no kidnapers to elude, no bareback horse to ride, no blue envelopes to guard, nothing to do but just play around and feel safe.

Besides, Uncle Bob was in town, and that meant that he would be planning some sort of a special good time for me—maybe a matinée, or perhaps he would take Minnie and me to dinner at one of the beautiful big hotels where the orchestra plays "Tales of Hoffman" and "Butterfly" and the things to eat match the music.

Sure enough, after I had at last made up my mind to rise and had dressed in perfect leisure, enjoying every minute of it, another telephone message came, this time from Uncle Bob, and he asked me to go to luncheon with him. I gave my poor little tired blue suit a good brushing and sewed up the ripped loop of my hat where the fateful blue envelope had been hidden. I hunted up a pair of white gloves, and I made myself a darling nosegay from my basket of flowers and pinned it festively on the front of my jacket. I looked very nice, if I do say it myself. Uncle Bob said it too, when he saw me.

"Suppose we walk up the Avenue," he suggested. "I should like the world to see what a beautiful young lady is willing to walk with an old man like me." As Minnie would say, "that was going some" for Uncle Bob, but I really think he felt fonder of me than he ever had before, probably because he had thought I might never come back after my disappearance.

So we walked up the Avenue, and when we passed the biggest, proudest jewelry shop in town he said, carelessly, that we might go in and look around a bit. Of course I knew what that meant, but I followed him in as demurely as possible.

We looked at all the conventional things—bowknots and circles and crescents and bars—just like everybody has, and then we looked at the odd things—the stones that are full of color and light, the enamels, and the wonderfully worked settings that might date from the time of Benvenuto Cellini. Finally I saw something that I had to exclaim over, and Uncle Bob asked the salesman to take it out and show it to us. It was an oval moonstone, full of silvery blue light, and set in a frost-like tracery of platinum, with tiny diamonds and sapphires worked cunningly into it. It swung on a thin chain with fairy knots of diamonds and sapphires, so small that you could hardly see them, but exquisite beyond anything I can say. It was the most beautiful thing I ever saw in my life—it didn't look as though mortals had made it, but rather as if fairies and sprites had worked at it by moonlight, and shaped it with their little hands, laughing all the while.

Uncle Bob slipped the little price tag off it and clasped it round my neck. "That is for a brave girl," he said, and then he gave the man a check and we came out into the sunlight again, both of us too near to tears to say much, and I with the loveliest thing in the world for my very own.

I took hold of Uncle Bob's arm and squeezed it. "I can't say thank you, Uncle Bob," I said, "but you know I'm thinking it."

We didn't talk very much during luncheon, but afterward, when the waiter had brought bonbons and black coffee, I tried to tell Uncle Bob a little of what these months at work had meant to me. Of course I couldn't pretend that it had all been pleasant, but the main thing was that I felt that I had, partially at least, realized the things that my dear father had wanted me to realize:

"And when I get all my money, Uncle Bob," I wound up, "I'm not going to quit work, but I'm going to go right on, and every time I see a girl who needs a vacation very much and can't afford it, or who ought to go to the doctor, or who needs just fun, like music and theaters and good times, I'm going to send her the money with directions how to spend it. It'll be the nicest thing in the world to do with money, I think. I'm so glad I'm going to be rich."

Uncle Bob had listened to my words very tolerantly, just as older people always listen to the wild, quixotic schemes of younger ones. But when I said with so much emphasis that I was so glad I was going to be rich, something—something quite different came into his face. It made me feel very strange, and then, in a sudden flash of telepathy, or intuition—call it what you like—I exclaimed: "What is it, Uncle Bob? I am rich, aren't I—or I will be? Didn't Father leave me a great deal of money?" And then, after a second's pause in which he did not try to answer, I went on, "Oh, what is it? I haven't been mistaken all these years, have I?"

So that was how the truth finally came out. He never would have told me then if I had not divined it,

as though he was ashamed of being found out in so much kindness.

And to think how many times I had thought him stingy with me and unwilling to let me spend the money which was rightfully mine! How many times I had teased him to give me a larger allowance, and how many bills I had run up, when Mrs. Alex wasn't with me, for him to pay! I tried to ask him to forgive me for all my thoughtlessness, and he said that I wasn't to blame when I didn't know any better.

HE WENT on to tell me, too, that I would be provided for if he should die, but not very lavishly, for he had others to think of besides me. I knew that one of Uncle Bob's sisters had married a worthless sort of man and had a half-dozen children, and that Uncle Bob supported the whole family, and I had rather looked down on them for accepting so much—I who was unknowingly accepting so much more, for I had not even the claim of kinship upon him. What a mean little pig I had been!

As we went out into the Avenue again, Uncle Bob put his hand on my arm.

"You know, Leslie," he said, hesitatingly, "your father was my friend and he left you in my care. You mustn't feel under any obligation to me—any more than you would have felt to your father. To me—to me—well, it's just the same as if you were my own daughter. I want you to feel that way, always."

I did feel it, too. And I answered him as well as I could and with all my heart, but I found that I was embarrassing him awfully, so I soon stopped. But I made a little vow to be a real daughter to Uncle Bob.

"Please tell me, Uncle Bob, if you don't mind," I asked, after we had got a little farther away from our emotions, "why you told me that you'd not let me have my money until I was twenty-five if I married Ranny Heeth? If there wasn't any money, why didn't you tell me just that and settle it once and for all?"

Uncle Bob looked at me with a twinkle in his eyes.

"I didn't want to break up your romance and your belief in your fortune all at once, Leslie," he said. "I knew if he thought you couldn't get at your money for seven years that Heeth wouldn't want to marry you, but if he persisted I'd let you know the whole truth sooner than see you tied up to that young cub. I wouldn't have told you now—about the money—if

you hadn't guessed it yourself."

"I'm glad I know," I said, "but it's a kind of a— a jolt," I added to myself.

Yes, it was a jolt. Even with Uncle Bob being so dear and kind and good and generous, I couldn't help feeling chagrined and hurt inside. All my nice purry thoughts about being a benefactress and helping others so graciously looked pretty foolish in the light of the truth. Of course, I was no worse off for knowing, but it isn't pleasant to find out that you're not much more than a pauper when you've been used to thinking yourself as sort of a princess, and nothing can make it truly pleasant, no, not even an Uncle Bob.

There was just one thing that seemed necessary and desirable and peaceful, and that was to get back to my desk and my typewriter and to my cross, untidy Mr. Kennedy. There, at least, was something that wouldn't change while I was looking at it, as everything else seemed to do. I started off to Washington on a simple enough errand, and I wound up by running away from kidnapers and sending telegrams to the chief of police. I thought I was an heiress who could masquerade as a working girl for a little while, and, behold, I'd been living on the bounty of one to whom I'm not even kin. So the only thing left was my work—that couldn't magic itself into something else quite different from what it seemed.

Ah, but couldn't it!

The next morning I went back to it, very gladly. Mrs. O'Malley and old George met me at the door—they had been watching for me. A joyful welcome they gave me, both of them trying to tell me at once what they would have done to the kidnapers if they had been there, and both of them as solicitous and kind as though I belonged to them. I almost felt as though I did—they were such dears.

Finally I got back into my little office. It seemed as though I'd been away a year. I hung up my hat and coat and sat down at my [CONTINUED ON PAGE 22]

E-W



By Permission of The Vitagraph Film Co.

Then I knew, and I said, surprised, and yet not surprised at all: "Why, I've been loving you too, Ewan, all the time!"

though sooner or later I would have had to know it. It was as I had vaguely guessed—I was not rich at all. When my father died they found that he had made very bad investments, and though Uncle Bob had saved what he could, there was not much. All these years it had been Uncle Bob who had supported me; it was Uncle Bob's money I had spent. The plan that I should earn my own living had been my father's, true, but he had left it to Uncle Bob's discretion whether or not it should be carried out. And Uncle Bob, because he feared I might be angry and hurt and do something unwise when I found out that I was not an heiress, but a little beggar living on his bounty, had carried it out. All this he told me over the luncheon table, very haltingly and shamefacedly,

What Has Gone Before

READ THIS, THEN READ THE STORY: Leslie Brennan is told by her guardian, "Uncle Bob," that her father wished her to earn her own living for two years unless engaged at eighteen. At the same time she learns that her fiancé only wants to marry her for her money. She breaks her engagement, learns stenography, and secures a position in New York as secretary for an eccentric young inventor of explosives. She wins his confidence, and when a telegram calls him to Toronto just as he is about to take his precious sarnite formula to the government officials at Washington, he entrusts it in a blue envelope to Leslie. She hides it in a bow on her hat. She is kidnapped, and gives up to her captors another blue envelope containing a nonsense verse which she says is the formula in cipher. She escapes, and comes back to New York.



Independent of Stoves

By Lillian Trott

HEAVY earthenware crocks used as receptacles in fireless cookers hold heat many times longer than metal ones. Did you ever rice or cream your mashed potatoes on the dot, only to see them cool before the tardy diners arrived? Set them in a fireless cooker and they will serve as hot as when out of the pot.

The Economy of Rest

By Helen Wilson

"REST for one-half hour each morning," said my neighbor when I asked her how she did her housework so easily. This woman lives on a farm, does all of her own housework, including the laundering, helps care for the garden, raises chickens, and cares for two children, one five and the other seven years old, yet she never seems tired or nervous and her house is always neat.

"After breakfast I wash the dishes and put the house in order," she continued, "then I care for my children, bring from the garden what vegetables I will need, then do my special work for the day—cleaning, baking, or ironing, as it may be. At ten o'clock I go to my room, darken it, loosen my clothing, and lie down for a half hour. If I am very tired I sometimes go to sleep, but even if I do not sleep I rest. I try to forget all about my work and just let go and rest. The children understand that I am not to be disturbed, and are willing to play without Mama for half an hour.

"When I get up I feel like new; so I start the dinner and then clean myself up a little. After dinner I finish up my work, but I always have an hour off in the afternoon too, and generally two, or even three.

"I try to get as much as possible done before my forenoon rest period. I work as hard and fast as I know how up to that time, but try to plan my work to make as few steps as possible. In that way I get the biggest part of my work done by ten o'clock."

"But can you do that on wash days too?" I asked.

"Yes," she replied, "if I hurry and the washing is not too big I am all through by that time. If I am not through I just let the clothes soak while I rest, then finish when I get up. I've found out that there are few things that can't stand to be left for a half hour, and it certainly helps me, for if I didn't rest in the morning I could never stand my work."

A May-Day Fair

By Emily Rose Burt

THE quaint old customs of May Day in England furnished the main plan for a very beautiful and effective fair which our church gave last spring.

The posters tacked up in public places showed pretty maids in old-time frocks footing it about the May pole, and proved a tremendous ad. The fair was held in a hall, but could be even more easily arranged for out of doors.

The walls were covered with green cambric to which real fruit tree branches and all kinds of greens had been fastened to give a bower-like effect. In a circle around the hall the booths were set up, each one representative of a May pole. From a post in the center crêpe-paper streamers in the May-pole colors radiated outward and downward till they met a circular framework supported by uprights. A circular counter was built just within the outside posts. All the woodwork was wound with crêpe paper, each booth emphasizing some one color in this, though the canopy streamers were uniform.

The attendants wore quaint old Eng-

lish costumes, consisting of full-flowered petticoats with panniers of a plain color, and short black velvet jackets over white blouses. They wore their hair in two braids, or else loose with a flower wreath crowning it.

The candy booth made a hit by selling home-made confections in cunning pink paper. May baskets made from small boxes covered with frills and fringes of crêpe and tissue paper.

There were three money-making attractions.

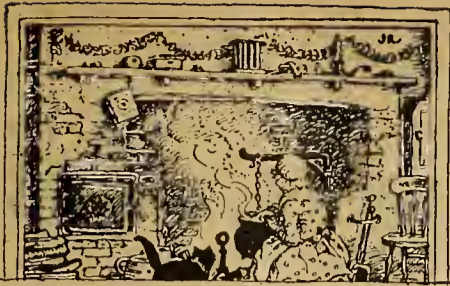
The one which appealed to the children was a "Jack-o-the-green" who sold grabs. He was simply a boy who walked in a framework of leaves. A square frame of laths to which waving green branches were nailed was made, and the boy slipped the framework over his shoulders. It reached to his waist and gave the effect of green leaves propelled by a boy's legs clad in green.

The grabs were all small articles, hung to the sides of the framework inside.

A pretty little milkmaid walked beside Jack-o-the-green and took the children's five and ten cent pieces, giving in return one of Jack's grabs.

Robin Hood and his "merrie men" conducted a shooting gallery in a side room. Dressed in green suits, with scarlet quills in their jaunty caps, they handed out bows and arrows for target practice at a small fee for a trial with three arrows. Anyone who was lucky enough to hit the bull's-eye was allowed another round.

Maid Marion as Queen of the May, on an improvised throne, acted as hostess at a long tea table where not only tea but hot coffee and chocolate and ice cream were served by handy little pages in



Cookery

Home-Made Crackers

By Ruth M. Boyle

FEW women attempt to make crackers these days, because it is hard to approach the lightness and fine flavor of the commercial wafer. The home-made cracker, however, while somewhat difficult to make, is very palatable. The following recipe was given me by a cooking authority:

Sift two cupfuls of white flour, three teaspoonfuls of baking powder, and one-half teaspoonful of salt well together. Add one cupful of milk and four tablespoonfuls of melted butter. Mix in one egg white, beaten stiffly. Now add enough more flour to make stiff enough to roll, then knead and pound for a long time. Roll out very thin, cut in squares, and bake in a moderate oven.

Bran crackers, which many people like because of their healthful qualities, may be made by adding one-fourth cupful of sugar to the recipe for white crackers, and using half bran instead of all white flour. Proceed as for the white crackers.

VELVET EGGS—Is your husband's breakfast ever spoiled because his soft-boiled eggs were forgotten and left in the kettle too long? This can be so easily avoided if you will provide a dish or kettle that holds just a quart, have your water boiling thoroughly, so that the steam pours from the spout of the teakettle, put two eggs in the quart vessel, pour the boiling water over them and set on the table. Allow to stand from three to five minutes before serving, and they will be just like velvet. The good part about this method is that they may stay in the dish as long over three minutes as you want, and they will not become hard if you do not cover the dish. I always serve them in something pretty so they may go on the table in the water. Each person has a separate dish, as it is hard to regulate the proper amount of water after two or three eggs. M. D. H., Virginia.

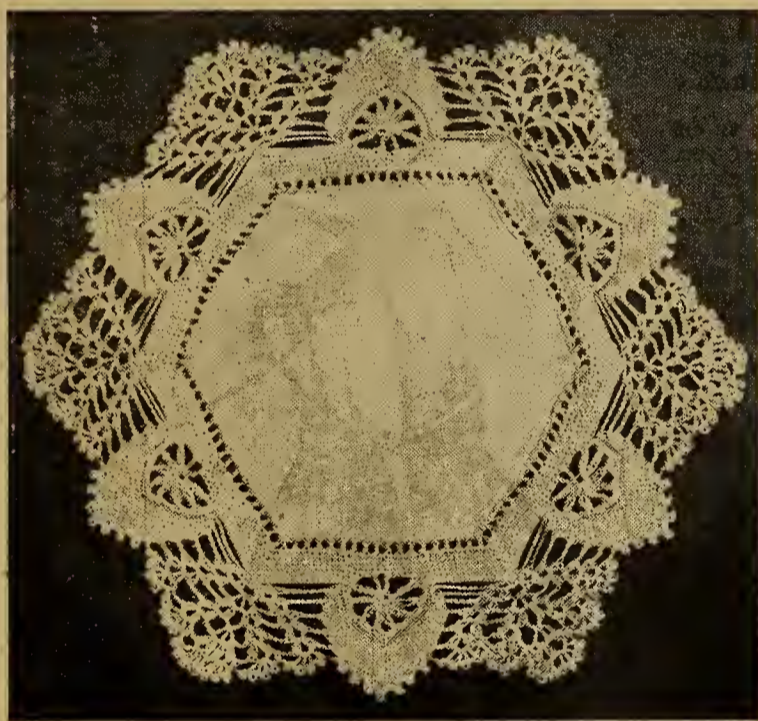
DELICATE PARTY CAKE—One-half cupful of butter, one and one-half cupfuls of sugar, whites of four

eggs, one-half cupful of raisins, one-half cupful of nut meats, two cupfuls of sifted flour, three-fourths cupful of hot water, two teaspoonfuls of baking powder, one tablespoonful of lemon juice. Cream together the butter and sugar, sift together the flour and baking powder, put the hot water into the butter, and then gradually add the flour and baking powder. Lastly beat in the beaten whites of the eggs. Bake in two layers in a moderate oven. Put together with a filling made by running the raisins and nuts through a meat grinder, adding the lemon and a little confectioner's sugar and thoroughly blending. Frost top with a white icing and decorate with candied or maraschino cherries. L. M. T., New York.

VEAL AND VEGETABLES EN CASSE-ROLE—Cut up one and one-half cupfuls of veal, slice one large onion or two medium-sized ones, cut up carrots to make two cupfuls and the same quantity of potatoes, put all in pan with one cupful of boiling water and cook in hot oven for thirty minutes. Then cool oven, and bake one and one-half hours. Remove to top of stove, thicken to make one cupful of gravy, and season with salt, pepper, and chopped celery. Serve in dish in which it was cooked. S. R., New Jersey.

WHEN BAKING SWEET POTATOES coat them first with lard before putting in the oven and they will be unusually appetizing and moist as well as much easier to peel. Colored cooks in the South cook them in this way. C. B., Vermont.

Pineapple Doily



THE hexagon form of this doily in pineapple motif makes the design unusually attractive. Complete directions for making it will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

Lincoln green, superintended by ladies-in-waiting to the queen.

Friar Tuck was in evidence as a kind of host throughout the evening, welcoming everyone, and adding greatly to the spirit of the occasion.

Toward the middle of the evening a little program was given, made up of some of the old English ballads sung by a quartet, folk dances by some of the younger girls, and, last of all, a grand pageant with tableaux made up of all the costumed attendants, and as many other characters as were needed for the effect.

NOTE: A list of program material for a May-Day entertainment will gladly be sent on receipt of a stamped self-addressed envelope. Address May-Day Editor, FARM AND FIRESIDE, Springfield, Ohio.

Holds the Strainer Cloth

By Mrs. W. A. Downing



THIS simple device will hold a strainer cloth over kettles, jars, pails, and the like. It consists of two upright slats or thin boards with two horizontal boards connecting, one at a few inches from each end of the uprights. A small nail sticking up through each corner holds the strainer in place.

nail sticking up through each corner holds the strainer in place.

KNOX SPARKLING GELATINE

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You are insured a clear, transparent jelly made from the best material when you use Knox Sparkling Gelatine.

I know both yourself and family will be pleased if you try the recipe for Maple Rice Pudding which is printed below.

Mrs. Charles B. Knox, President.

Maple Rice Pudding

Soak 1/2 envelope of KNOX SPARKLING GELATINE in 1 cup of milk ten minutes and dissolve in 2 cups of hot boiled rice cooked dry. Add 1 cup of granulated sugar or brown sugar, maple sugar or maple syrup and 1/2 teaspoonful of salt, 1 cup chopped nut meats, if desired, 1 teaspoonful vanilla and when cool fold in 1 cup cream, beaten until stiff. Turn into mold which has been dipped in cold water. When firm, remove from mold and serve.

Recipe Book Free

Our book "Dainty Desserts for Dainty People" will be sent for your grocer's name. If you wish a pint sample enclose 4c in stamps.

CHARLES B. KNOX GELATINE CO., Inc. 416 Knox Ave., Johnstown, N. Y.

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

Home Weaving Looms \$8.50 Only
Big money in weaving rugs, carpets, etc., from rag and waste material. Be sure to send for free book. It tells all about weaving and our wonderful \$8.50 and other looms.
Union Loom Works, 290 Factory St., Boonville, N. Y.

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Flies will not stay in a room where it is grown. Very mysterious, but tests show such to be the case. Blooms in a short time (60 days from planting). Flowers both summer and winter. Package of seed by mail with catalogue, 10 Cents.

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AGENTS

We are paying men and women from \$25 to \$50 a week—paid Cooper \$314 in one month. Bridge \$88 in 6 days to take orders for

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It's easy. We furnish everything. Forty styles. Beautiful new fabrics. Wholesale prices. Big commissions. You only take orders.

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Sample Cost Free
Write for new proposition. Complete outfit—all free. Hurry.

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Delivered TO YOU FREE

Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles, shown in full color in the big new Free Catalog. We pay all the freight charges from Chicago to your town.

30 Days Free Trial allowed on the bicycle you select, actual riding test in your own town for a full month. Do not buy until you get our great new trial offer and low Factory-Direct-To-Rider terms and prices.

TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices. No one else can offer such values and such terms.

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Kalamazoo Michigan
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Straight from Fifth Avenue

Summer Bargain Clothes Miss Gould
Has Found and Which You Can Buy Through
Farm and Fireside



No. 10—Sport Blouse,
\$1.00

No. 10—If you want to have the newest blouse in your summer outfit, you'll choose this one. I selected it for you because it combines the best features of a smock and a middy, and because it's the most popular sport blouse in New York. It comes in all white or white with rose or Copenhagen collar and cuffs. It is prettily smocked, has smart pockets, and the material is heach cloth. Sizes 34 to 44 bust. Price, \$1.00.

I AM going to help you buy your clothes, just think of it! I have been spending many weeks here in New York searching the shops on and near Fifth Avenue. I have been looking for the most popular clothes of the year, and for bargains too, and I've been looking especially for you.

Illustrated right here on this page are the clothes I have chosen for you. Don't you just love them, every one of them? And just think, I will buy them for you, save you all the trouble of shopping and bring you dresses, blouses, skirts straight from Fifth Avenue, New York.

How to Order

SEND your order to the Fashion Editor, Ready-to-Wear Department, FARM AND FIRESIDE, Springfield, Ohio.

Be sure to state size and color. Write your name and address plainly. Remit by bank draft, post-office money order, express money order, or check. If you send currency, be sure the letter is registered. We cannot be responsible for money lost in the mails.

No garments sent C. O. D. or on approval. Your money back if you do not like the garments. Return them direct to the firm who makes the shipment to you—not to FARM AND FIRESIDE—by insured parcel post or prepaid express. We cannot be responsible for return packages lost in transit unless sent as directed.



No. 11—Frill Waist,
\$1.00



No. 12—Voile Dress,
\$3.00

No. 12—I know you want a dainty cool dress for hot weather—a dress you can wear to church, to the Sunday-school festival, or any social entertainment. To fill this need, I have chosen the dress of cotton voile which, by the way, is very fashionable this season. It has the popular fichu collar, net-trimmed, and a silk girdle. The dress comes in all white or in plaids—lavender and white, rose and white, green and white, gold and white, or black and white. Sizes 14 to 18 years and 34 to 44 bust. Price, \$3.00.

No. 13—An embroidered waist will fit into any outfit, for it fits so many needs. It's simple enough for general use; yet, it's fancy enough to lend a bit of the dressed-up air. This one is embroidered organdie in the dainty fleur-de-lis design. The collar is hemstitched and the cuffs effectively tucked. Sizes 34 to 44 bust. Price, \$1.00.

No. 14—This is the season of separate skirts—sport skirts. No matter what the fabric or kind of skirt, Fashion decrees it must be in sport style. I know you will like this one for its simplicity and its very good-looking pockets. It can be had in cotton gabardine or Bedford cord in all white. Sizes 25 to 30 waist, 36 to 43 inch length. Price, \$1.00.



No. 13—Embroidered
Waist, \$1.00
No. 14—Separate Skirt,
\$1.00



No. 15—Taffeta Dress,
\$9.95



No. 16—Sport Dress,
\$2.95

No. 11—The voile waist is a great favorite this season, and when lace and embroidery trim it, it is just the most fashionable blouse imaginable. To this dainty model is added a frill which is of the embroidery, while the collar is trimmed with Valenciennes and Venise lace. The waist is all white. Sizes 34 to 44 bust. Price, \$1.00.

No. 15—There must always be a best dress in every outfit. Fashion decrees it must be taffeta with Georgette sleeves and a touch of gold embroidery. The dress comes in blue taffeta. Sizes 14 to 18 years; 34 to 44 bust. Price, \$9.95.

No. 16—Here is the important costume of the season, the one every girl and woman wants—the sport costume, and though it goes by that name its uses are many. Picnics, boat trips to nearby places, auto rides, visiting, and even everyday occasions figure among the times when it may be worn and worn appropriately. This sport dress is of washable repp in rose and white, green and white, Copenhagen and white, and tan and white. Sizes 14 to 18 years; 34 to 44 bust. Price, \$2.95.

The Blue Envelope

[CONTINUED FROM PAGE 20]

desk and opened it. There were letters to look over, papers, some bills—things that I'd bundled up and thrust into the desk drawer untouched on the day I left. I took them out and began to go over them. Presently the door behind me opened. It was Mr. Kennedy.

"I thought I sent word to you not to come back until you felt like work again," he grumbled.

"But I do feel like work," I protested. "I'm all right. I'm not even the least bit tired now."

He stood around for a while, fiddled with some things on the file cases, and opened and shut a book that was lying on my desk.

"Did you like the flowers?" he burst out desperately.

"The flowers?" I asked in astonishment. "Oh, did you send them? Why—I—I loved them. They were beautiful. Somehow I never—never thought of you sending them. I do beg your pardon." I went stammering on, making it worse every second.

Suddenly he shut the book with a snap.

"Yes, I sent them," he said. "I'm an awful ass about saying things and I—I thought maybe the flowers would tell you a little—a little—" he paused.

"A little what?" I asked, as much confused as he.

"Hang it!" he fairly shouted. "I'm in love with you—don't you see it? I fell in love with you the very first second when you walked in here and answered me back so stiffly and starchy. And I've been in love with you ever since, makin' an ass of myself every time I opened my mouth to say anything to you, I dare say. I always was an awful idiot about girls. Never could bear 'em. Except you." He stopped, then went on more slowly. "I don't suppose you could care anything about me—I'm such a raw sort—but if you could, Leslie—I'd wait—I'd try to be more like other chaps—" He stopped again.

HE LOOKED so eager and so wistful, and funny too. But I didn't want to laugh. I wasn't sure what I did want to do, until he put his hands on mine. Then I knew, and I said, surprised, and yet not surprised at all, "Why, I've been loving you too, Ewan, all the time!"

It seemed as though we shall never get through telling each other things. I wanted to know how he had felt when he found I had disappeared, and whether it was the very first second he saw me that he fell in love with me, and if he has ever cared about any other girl, and whether he thinks his mother and sister will like me, and a million more important things. And Ewan wants to know how soon I will marry him, and whether I ever cared about anyone else (I told him no, for I didn't really love Ranny Heath), and he has to tell me about the fit of rage and despair that fell on him when he found that I had been kidnapped, and how he made up his mind to tell me he loved me the first instant he got alone with me, if he ever got me back, and how his mother and sister will be crazy about me, and so on and so forth.

And we're going to have the Blue Envelope framed and hung on our library wall. It seems a pity it is blue. It ought to be rose color!

[THE END]

Our Thoughts of God

By G. W. Tuttle

WHAT we now are has depended, and what we will yet become will depend, very largely upon our thoughts of God and our understanding of God. Some think of God as a great king upon a throne—a far-away God who keeps the sun and the moon and the stars and the planets in their courses; a great judge who shall solemnly sit in judgment upon us, judging us according to what we have done, whether it be good or bad.

What a difference between thoughts like these and the thought of God as the great Father whose arms of love are ever round about his own, who companions with his children, who is warm and loving and tender, whose every thought to usward is a thought of love, who turns to good each seeming ill, who whispers gently in our ears when we are tempted, "Look unto me," whose love is too great to allow us to settle down in selfish ease. Nay, He smiles, and says, "Come up higher." Our Father loves us too well to withhold the hard and the strenuous that must needs come to mold, and to change, and to make us over into His likeness.

It is only as we think of God as a father that we realize the truth of the poet's words:

Closer He is than breathing,
Nearer than hands or feet.

E W



Children's Corner

Margaret's Country

By Mary Melvin

PART I.

ANXIOUSLY Margaret scanned the long high shelves which alone marred the whiteness of the clothes-room of the Belle Wait Orphanage for Girls. Standing tiptoe on her rather uncertain little worn-out shoes, she reached up after the bundles of freshly washed clothes and began throwing them down upon the spotlessly clean floor.

She stooped and nervously unpinned the white cloths which were wrapped around the bundles. Piece by piece she looked over the garments, and after she had examined each bundle she put it up again with a little sigh. At last all the packages of neatly stowed-away clothes had been searched and Margaret had not yet found the twenty-three nightgowns which belonged to Dormitory Three.

"No use," she said aloud with a sob, dropping upon the mountain of clothes upon the floor. "I've looked everywhere in this room. They ain't even with the sheets and things. I'll just have to tell Mrs. Keely."

With these words Margaret began to cry a little. Suddenly she stood up with determination and began throwing the bundles back upon their high shelves, forgetting in her game the misery of being found "negligent in her duty." This was what Miss Cook, the linen matron, had said to her: "Margaret, you have been negligent in your duty, and you will have to tell Mrs. Keely about it."

FOUR years ago Margaret Glenn, then nine years of age, had been brought to the Belle Wait Orphanage. She even yet remembered well that first day when she had been seated in the superintendent's office, and she recalled with what terror the dignity and strangeness of the whole situation filled her. At home she had received the overflowing affection of an Irish mother's heart, but Mrs. Keely was a very busy person with about three hundred and fifty children under her charge. She could not take time to learn that the little orphan's heart was almost breaking for some sign of a loving welcome.

Slowly Margaret had grown to the responsible age of thirteen, learning to accept the changed conditions of her life with the fatalism of the orphan. All thirteen-year-old girls were given some work to do at the Belle Wait, something that would help in the "system" of the place. Margaret was put to work for Miss Cook in the clothes-room. For three months the little girl had at-

tended to her duties faithfully and accurately. This was her first mistake.

Halfway down the corridor on her way to Mrs. Keely's office she came face to face with Alice McGee.

"Why, Alice, what you doing here?" she asked. "I thought you was with a lady."

"So I was, but it was in the country, and it was awful. An' it got reported on somehow, and somebody came to investigate and examine how bad treated I was and brought me back." These technical terms used by the trained charity worker who had rescued her from an unfit temporary home were long cherished by Alice to use with effect on all possible occasions.

"In the country? Gracious! Ain't you glad to be back?"

"Yes, indeed; I don't know how they found out I was bad treated."

By this time Margaret had forgotten the clothes-room entirely, and she followed Alice down to the playroom to hear her rehearse over and over the tales of her experience in the country.

"I'VE been sent away like that too," I said Sarah Hampton, and thereupon she began to relate her experience in the country. The frogs always called all night long in the country and wouldn't let anybody sleep, so she told them; and the country was full of "big woodses" lots worse than the one that the old wolf lived in who ate up Red Riding Hood's grandmother. At night the moon and the stars were always shining in on you and bothering you, she informed them, and in the day you could see the end of the world all around in every direction.

This last dreadful picture seemed more terrible, because more incomprehensible, than even the tales of the "wild animals" Alice had discovered in the country. The girls of the Belle Wait Orphanage thought that to be sent to the country was the most terrible lot that could possibly befall a human being. Applicants for children from the asylum were generally small farmers, and consequently the children who brought back an account of ill treatment were mostly from these farming homes.

The dinner gong rang, and the children quickly formed in line and marched into the refectory. Margaret suddenly remembered with a pang, as the babble ceased to allow grace to be said, that she had not yet told Mrs. Keely of her mistake. She could not eat anything, although in honor of the founder's birthday they had noodle soup and ice cream. She must tell Mrs. Keely.

[TO BE CONTINUED]

Johnnie Told

"Sister's age is just three times mine," replied Johnnie to Charlie Slowpop, who elicited some family history from "her" young brother. "I was 40 months old when we moved to this town. Father is now 1 1/2 times as old as he was then, and I am two years more than half as old as Mother was when we came here. When I am as old as Father was when we came to town, the combined ages of Father, Mother, and I will amount to just 100 years."

Can you tell from Johnnie's confidential talk just how old he was at the time he gave the facts?

Looking Your Best

The Right Way to Take Care of Your Hair

By MARGARET DRUMMOND



SOMEONE a long time ago wrote that a woman's crowning glory is her hair. He might have added with truth that unless she kept her hair well brushed and clean it was quite likely to be her crowning mistake, for nothing makes or mars the well-groomed woman more than the condition of her hair.

In order to keep your scalp in healthy condition and your hair vigorous and lustrous, cleanliness is the first essential. The skin of the scalp is much the same as that on the rest of the body and requires just as intelligent care. The girl who lives in the city where there is much smoke and dust will require to shampoo her hair more frequently than the girl who lives in the country; again the oily scalp requires more frequent shampooing than the dry, so you see that under certain circumstances washing twice a week might be necessary, and again with the aid of sun baths and brushing it may be kept fresh and sweet for a month. Much of the harm that is attributed to the shampoo depends not so much on the frequency as on the method.

The best effects of a shampoo cannot be obtained on a cloudy, damp, or rainy day. The sun has a good deal to do with the condition of the hair, and this is one reason why it should never be washed at night.

Shave a small cake of white soap into a pint of boiling water and allow it to stand until it forms a jelly. After wetting the hair thoroughly with warm water, rub the soap jelly well into the scalp, being careful not to scratch the scalp with the finger nails. Add a little water and make a thick lather. If your hair is very oily, a few drops of ammonia or a teaspoonful of washing soda may be added to the first basin of water. The rinsing must be careful and thorough. Use several waters until the last is perfectly clear.

Dry thoroughly with warm towels (not Turkish) and when possible, dry in the sun until every particle of moisture is gone. The sun will give the hair a shine that it obtains in no other way. During the entire process massage the scalp with the finger tips so that when completed the whole head is in a glow. If sun is not available, fan the hair, shaking well when drying. In washing white hair a little—very little—bluing added to the final rinsing water will keep the tresses a clear silvery white.

Massage conscientiously applied every day is responsible for many a beautiful head of hair. This keeps the scalp loose and gives the roots a chance to breathe.

Place the hands at the back of the head with the thumbs just below the crown and the fingers among the hair on the forehead. Move the fingers around in a little circle slowly and with a firm pressure for from ten to twenty times. Then move the hands lower down and repeat the process. Do this every night—it will only take three minutes or so, and the hair will soon bear witness to the success of your efforts.

The brush and comb you use are of immense importance in keeping your hair in condition. The brush should be of the best quality possible; a comb should be chosen with rounded points and not too small teeth, so that all scratching is avoided. Never jerk the hair or pull it in combing; if tangled, begin at the ends, holding the hair firmly above, and work upward until all is clear. Jerking and pulling may destroy and will certainly hurt the little ball of tissue at the root of the hair from which it derives its nourishment. The hair should be brushed every night with long steady strokes for five or ten minutes, brushing from every angle. Take just enough of the tresses to be handled comfortably at a time, and do not stop until the whole head has been gone over.

Becoming Dress

O. H., ARKANSAS—You were successful in your effort to be one of my first correspondents. I hope you will continue on the list. Regarding your inquiries: With light hair, blue eyes, and fair complexion you can wear almost any color. It is a pretty good rule, however, to match the color of the eyes in the suit, which would mean blue in your

case—a deep blue, which will show up the color of your hair and eyes. With white dresses you ought to wear wide sashes of blue, green, or pink. Why don't you write to the Fashion Editor of FARM AND FIRESIDE, and she will give you exact information as to lines, etc.

Without having a picture and not knowing the shape of your head and face, it is difficult to advise just how to wear the hair or the style of hat which will be becoming. High heels on slippers are not comfortable at any time, nor are they smart. The Cuban or military heel is better for the foot, as it is well balanced and gives good support.

Youthful Hair Arrangement

C. M. B., ILLINOIS—Dress your hair simply and softly around the head, so as to frame the face and not bring any features into prominence. Your mirror will direct you in this. The present styles are exceedingly simple. Take care of your long, thick hair; it is very precious these days. Consult a dentist about your teeth. They can no doubt be straightened back, though the process takes several months. Keep your teeth in perfect condition and your lips smooth, and the projecting teeth will not be so noticeable.

For Oily Skin

MRS. M. D., INDIANA—Read the article on "What to Do to Improve Your Complexion" in the April 7th issue of FARM AND FIRESIDE, and learn how to clean your skin every day. You probably do not rinse with cold water after each washing. A little pure face powder dusted on after washing will remove the "shine," but you must make sure the skin is thoroughly clean first.

To Prevent Freckles

MRS. E. S., OHIO—Care of the complexion all the year round, and especial care to keep the sun from starting freckles, is the only cure. Some skins are more sensitive than others. You know they say that it is a "fair skin that freckles light on," so don't worry about it, but when the warm weather comes protect your skin from the strong sun. A good cream is what you need.

Occasional Gray Hairs

MRS. D., OREGON—Gray hair that appears and then disappears does not mean that all your hair is turning gray. It is dead hair, and it comes out with brushing. If you look carefully you will find that the new hairs have already appeared to take the place of the old.

To Fill Out Thin Neck

W. M., NORTH DAKOTA—Massaging every night with a good toilet cream will not only improve the color of your skin but will fill up the hollow places and make your neck full and round. Don't wear high collars.

For Enlarged Pores

A. R., IDAHO—Gentle massage with a good face cream will do wonders for your enlarged pores. If they are very large, sponge with a little witch hazel occasionally. Be careful to keep your skin thoroughly clean, and if you use face powder be sure you use a pure one.

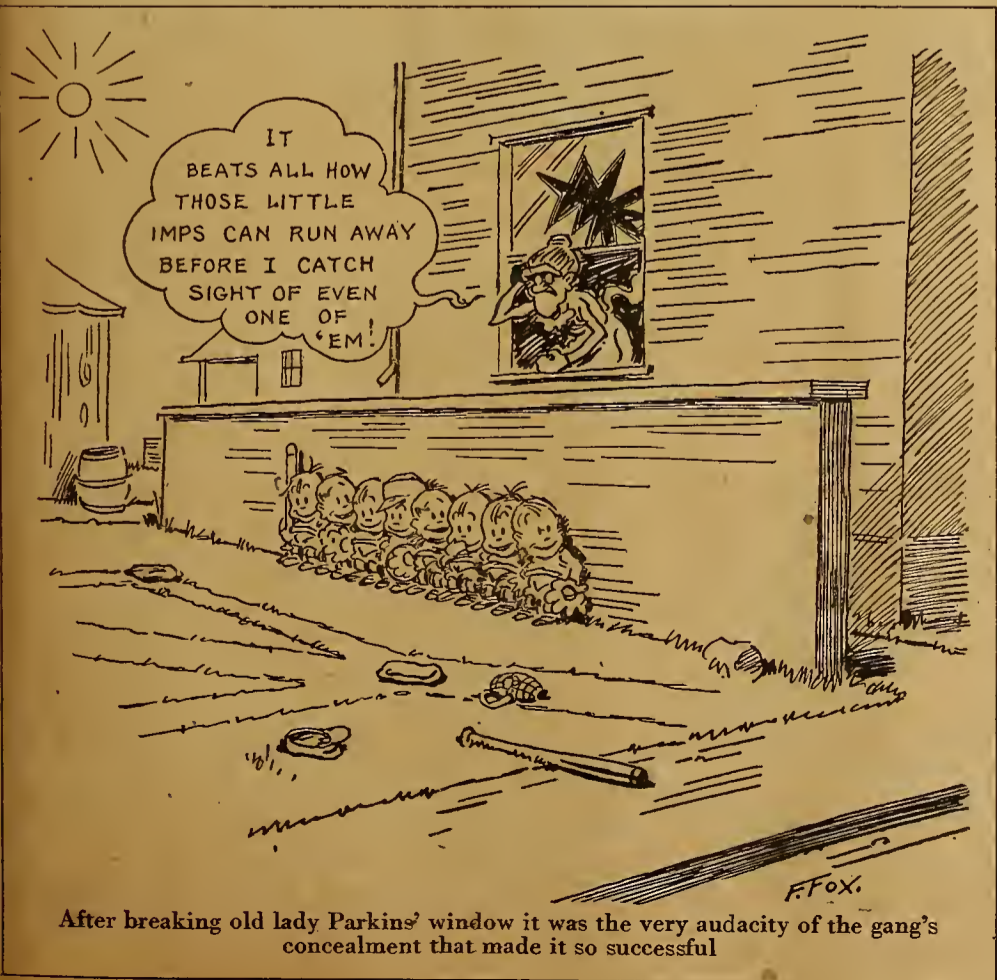
To Cure Liver Spots

M. S., OHIO—Please write to Dr. Spahr, care of FARM AND FIRESIDE, and he will advise you in regard to the liver spots. Good care of the general health will do more for you in this regard than anything else.

For Muddy Complexion

F. E. H., ARKANSAS—The "muddy" condition of your skin is due to improper diet. Eat less meat and more vegetables, milk, and eggs.

NOTE: Miss Drummond will gladly answer questions in these columns, or by personal letter, if a stamped, self-addressed envelope is enclosed.



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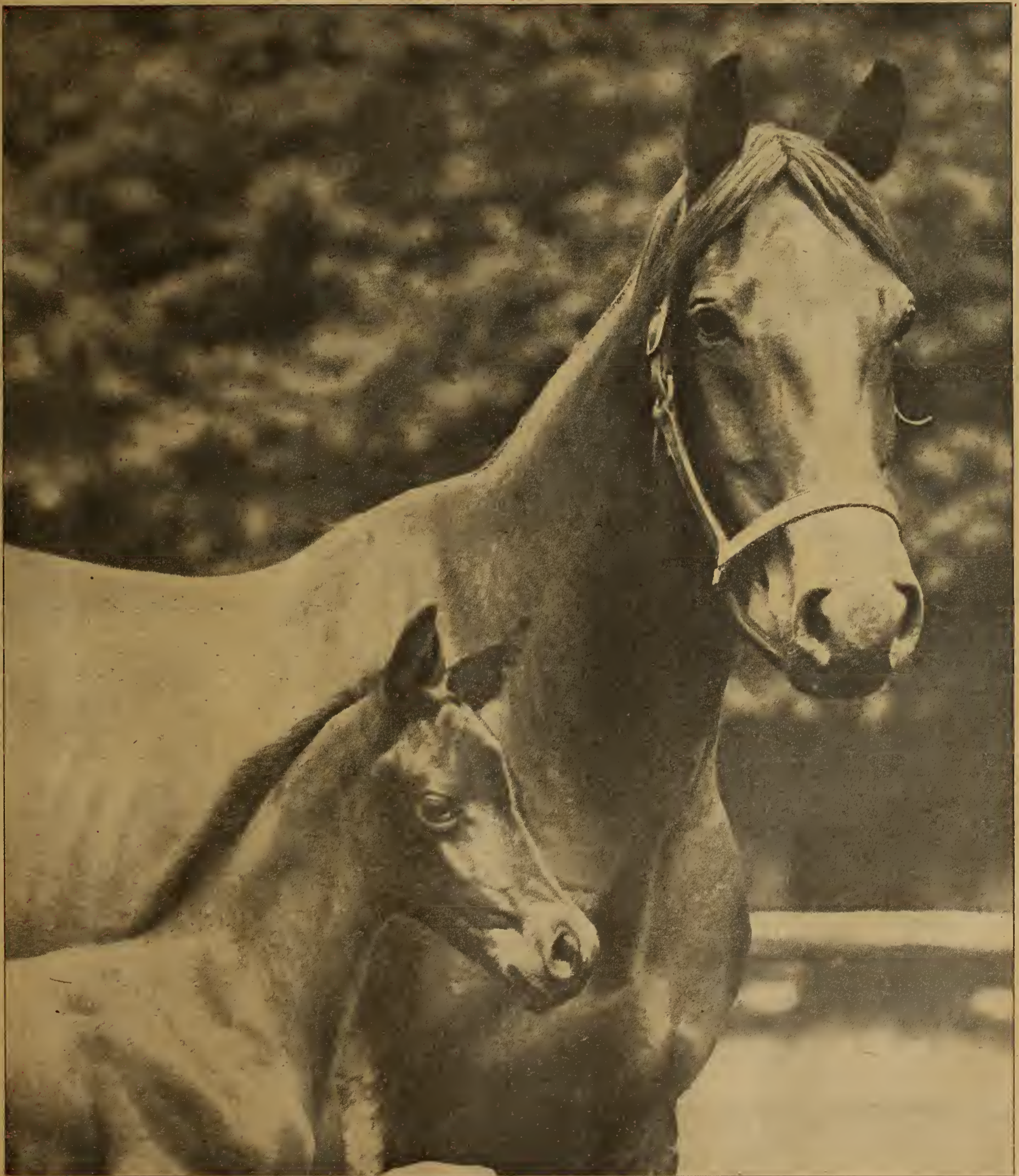
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Eastern Edition



PHOTOGRAPH BY CLARENCE A. PURCHASE

A Promising New Recruit



It Proved Itself The Greatest Car That's Built

Men ask why we race the Super-Six. Why we win so many records in hill-climbs and endurance. They say they don't want racers, and don't care for super-power.

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HUDSON MOTOR CAR COMPANY, DETROIT, MICHIGAN

FARM and FIRESIDE

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No. 16

Sweet Potato Storage

Tennessee Growers Prevent Waste by Using Heat and Ventilation

By HARRY B. POTTER

"MY MONEY crop for the last ten years has been sweet potatoes," was the answer W. R. Hawks of Weakley County, Tennessee, gave me when I asked him how he liked farming. And I knew from the twinkle in his eyes that he was satisfied with results. Then he took me over his place. He told how farms near-by had, in three years' time, come to have more than a thousand acres in sweet potatoes a year, and how the farmers depend upon the local Sweet Potato Association to market their crop.

Mr. Hawks is secretary and sales manager of the association. He has earned this position of responsibility and trust by years of patient work, followed by results that showed he knew what he was about. Ten years ago he found himself without much means. Legal difficulties took from him all that he had, except \$500 and two mules. He found a place on a farm in Weakley County where his family might live and where he might work. He began to raise sweet potatoes. It was not long until the place upon which he had built a storage house became his to control. "It has not been easy work by any means," said Mr. Hawks. "We have had to put in long hours and suffer from hard work, but it has paid us. Our neighbors saw me driving to town quite frequently with my wagon bed filled with potatoes. They knew that I had nothing when I started, and that I had been buying land since that time, and they were not slow in putting two and two together. They began to raise potatoes. In 1914 they began in earnest. Then there were but 40 acres in sweet potatoes in the community; now there are 1,000 acres."

Storage Houses Insure Success

EVERY grower has a storage house, for sweet potatoes require good storage. The first house, built in 1904 on a farm adjoining Mr. Hawks's, is still standing, and is being used. It holds 250 bushels. It was large enough in 1904, but conditions have changed. The last house built holds more than 15,000 bushels. "Our storage houses are responsible for much of our success," continued Mr. Hawks. "Sweet potatoes must be handled like eggs and kept at the right temperature if they are to be put upon the market in good condition. I have had a great deal of experience in bedding and growing the slips and setting out, but the main thing is to dig the potatoes properly and have them ready for market in good condition."

"But let me begin at the beginning of our work and tell the reasons for our marketing success in the last three years," said Mr. Hawks. "I assume that you are not so much interested in the growing of the crop as you are in the methods that have made it possible for us to get money out of them after they are out of the ground."

"Our methods of growing potatoes are not much different from those of others. Our soil is just average. Rich soil will not grow sweet potatoes very well. In fact, much of the State is not adapted to the growing of the potato because the soil is too fertile. Our clay soils are just right, and we use the best methods we can learn of to produce as many of the best potatoes as any land will produce. We grow the Florida Yam and the Jersey sorts. Markets around here like these kinds."

"But how about the Nancy Hall? I hear the Nashville market men talking of the Nancy Hall," I remarked.

"Yes," replied Mr. Hawks, "we can supply the Nancy Hall too. They come from the same bin as the Florida Yam. If there is any difference I do not know what it is."

"And the storage houses on your farms keep them until you are ready to sell?" I inquired.

"Yes, we have no trouble at all. One member of our marketing association who did not desire to sell until he could get the high market price sold for 35 cents a bushel more than those who sold early."

"Our houses are not all alike. Some men build one way and some another. There are 75 storage houses in this neighborhood, each built after the owner's own idea, but all have closed roofs. The walls are double, made of ceiling lumber and filled with sawdust. Every feature of the building is intended to help keep the potatoes from frost. We provide plenty of ventilation and we use a fire at the right time."

"When we commenced to house potatoes we thought we had to have them in small bins or one or two bushel crates, but as time went on we found we could put 200 or 300 bushels together and do no harm, provided we fired properly and did not put in too many before firing. I know men who have put in 300 bushels of potatoes and have had as fine potatoes as I ever looked at. We usually have a hallway come down the house. If the house is 18 feet wide the hallway will be about six feet wide, which leaves six feet on each side for storage space."

"As the potatoes come in from the fields we put them on the 'shelves.' We do not fill one bin and then start on another. We aim to keep an equal number of potatoes in each bin all of the time. This more nearly equalizes the heat on the potatoes. We lay down a few cut potatoes in the house, and when we see signs of decay in the potatoes on the ground we start the fires, even if we have to stop all the digging in the field to do it."

"We use coal stoves. Some are using charcoal ovens. The women of the neighborhood were in the habit of using charcoal ovens in the house for ironing, and we thought of them for our storage houses. We keep the temperature from 75 to 90 degrees. Sometimes we fire until bedtime, and then open up the next morning and go on with the digging, but usually we dig four or five days before we begin the fires. If the weather is open and dry we can dig five days before we see any signs of rot, and of course if we see no signs of decay we go on digging."

"We fire the potatoes eight to twelve days, owing to the size of the potatoes, their condition when taken from the patch. When the little sprouts begin to peek around the end of the potato we throw the door wide open and cool the house as quickly as we can. It takes eight to ten days to cool the house."

I was beginning to wonder if it was all as easy and as true as Mr. Hawks thought it was.

"This large jumbo," said Mr. Hawks as he held out a potato of immense size, "went through the winter perfectly. We have no fear of the spring either. Under this system of storage potatoes don't rot. It is different in that respect from the old methods."

"You remember when a person picked out the best ones he had in the fall and, in talking to his neighbor, would say that he had so many bushels. These he piled in the garden and threw some grass over them until Christmas. Perhaps they kept that long. Then he threw them into the wagon and hauled them home, and if they ever did get dry they were scabby and not fit to eat. We have no apprehension but what our potatoes will keep indefinitely—I will say two or three years, or over. I have some at my house that are two years old."

He drew my attention to the storage house again, and I noticed the potatoes in the bins were uniform in size, so asked him about his system of grading.

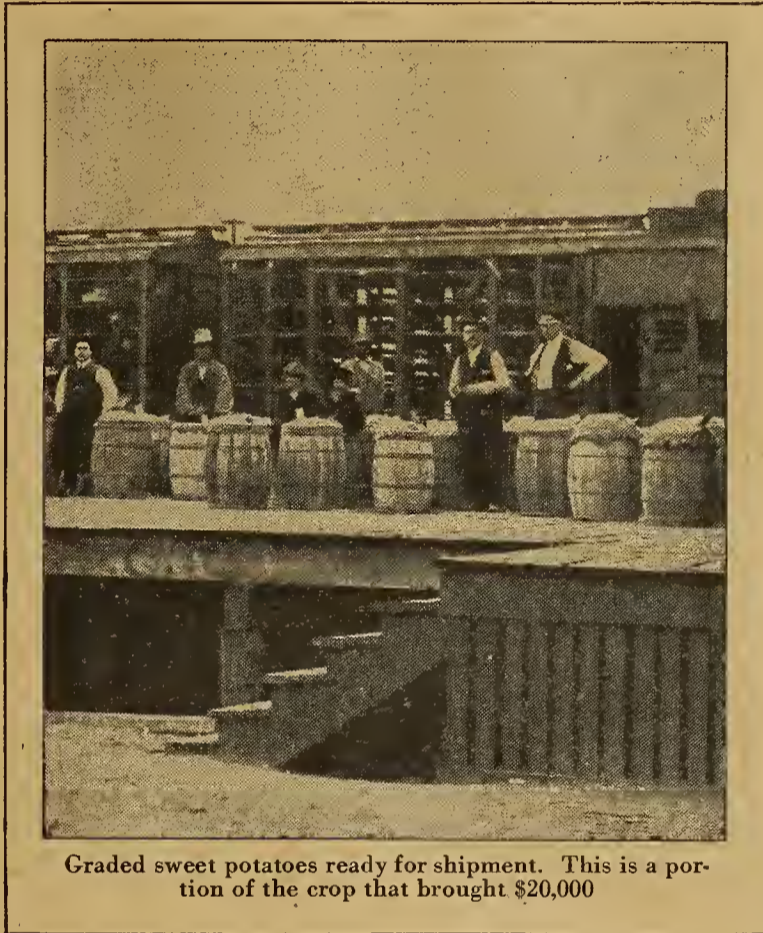
Market Demands Uniform Product

"OH, YES; now we grade. At first we did not pay much attention to the grading of the potatoes, but the market demands a uniform product now. Our first year we were able to sell our potatoes in bulk in cars at \$1 a bushel. Now we have to have potatoes in a shipment uniform, and they must be put up in smaller containers, such as crates, barrels, or baskets."

"In the field we make two market grades. We class them as we dig them. The seed is put in one pile and the eating potatoes in another. This season we are making three grades: the seeds, the jumbos, and the number ones. We have found that the seed-potato business is a thing of the past—there is very little money in seed potatoes now."

"Persons who grow potatoes, all have their own seed, and, even if they did not, a few men in a community could supply all the seed that might be needed for all the others. We class the potatoes and put the good ones in the house. The small seed potatoes we put where we can feed them to the hogs. With a little corn they make excellent hog feed."

At this point Mr. Hawks became very earnest, as if to convince me, but I was not doubting him. I did not doubt a man who can manage a shipping association in so successful a way. I knew it had been successful, but did not know to what extent. I stepped into the bank, and the cashier, an officer of the shipping association, told me that in 1914 from five carloads shipped the returns were \$2,500, in 1915 from 55 cars handled the receipts were \$20,000, and "with the 1916 crop," said the cashier, "we look for greater things."



Graded sweet potatoes ready for shipment. This is a portion of the crop that brought \$20,000



The association also handles poultry for its members, thus enabling shipments to be made in car lots

Cash and Carry

This Plan Gives You Groceries for Less Money

By RUTH M. BOYLE

THE telephone in the grocery store where I was waiting for a package rang, and the clerk nearest to it took down the receiver.

"Send a can of corn to Mrs. Henry on Silver Street? Right away. Yes, ma'am."

"That's the third time to-day she has telephoned in an order amounting to less than 50 cents, and she always wants it right away. Happens every day. She never seems to have any system about ordering her groceries," said the clerk as he handed me my change.

As I went out of the door with my package under my arm, I noticed a well-dressed, prosperous-looking country woman directing a clerk in the disposition of a huge basket of groceries which he was storing away in her automobile. She had system in her buying. From the quantity of the groceries, I judge that she was buying for a week or more ahead. She had paid cash for her purchases, and she was taking them home herself.

"You and I are paying for the three separate deliveries of that other woman's can of corn and package of raisins and 50 cents' worth of sugar," I said to myself. "She demands the service that we get along without, or are too considerate to demand. No doubt she charges everything, and we who pay cash have to bear part of the burden of interest on that deferred payment. If she is as careless in paying her accounts as she is in planning her day's needs, we may have to make up the loss the grocer sustains when she moves away without settling her grocery bill."

It was shortly after this little incident had opened my eyes to one of the reasons for the high cost of living, that I heard of the "Cash and Carry" plan as a grocer in Fond du Lac, Wisconsin, is working it out.

Late in September, 1916, he sent out a circular containing the following message: "Beginning Tuesday, October 3, 1916, the following discounts will be in effect:

"First—On all bills of 10 cents or more, paid in cash at the time of the purchase and taken away by the purchaser, discount of 10 per cent.

"Second—On all bills of \$1 or more, paid for at the time of purchase, but delivered by us, discount of 5 per cent.

"Third—On cash paid on account in advance, 5 per cent will be added and credited to your account on the date of purchase.

"At the end of the month your account will be credited with the additional 5 per cent of all charge slips not bearing our delivery stamp."

You will notice that he offers no bait; nothing is "free." He doesn't claim that he will sell anything to you below cost. He simply says that high-class delivery service and a heavy credit trade are expensive factors in the grocery business, and if you are willing to pay cash and carry home your purchase you are entitled to the 10 per cent reduction in the expense of handling that article.

Meeting Changed Conditions

"IT IS optional with our customers whether or not they want to take advantage of the proposition," the grocer explains. "With us it is simply a matter of meeting changed conditions with new methods. Our rural customers have always complained that they were not fairly treated, because they had to help keep up an expensive delivery system for the main benefit of the city people, and that they had to help pay the losses on dead-beat accounts. This plan gives our country customers a chance to buy flour and sugar at almost wholesale market prices, and the city people who want delivery service and charge accounts must pay the extra 10 per cent involved."

The plan is quite different from the trading-stamp plan, or one of the numerous premium schemes, whereby the housewife may get a "beautiful" set of dishes for \$100 worth of trade. The trading-stamp system usually gives the cash purchaser 2½ per cent on the dollar—25 cents reduction on a \$10 purchase. The saving is so slight that many women will not even trouble themselves to save the stamps.

"We find that the intelligent class of people are especially interested in the new plan," the grocer told me.

One of the provisions he makes, which is especially interesting and of which many very intelligent customers take advantage, is that on cash paid on accounts in advance, 5 per cent will be added and credited to the account on the date of purchase.

Farmers who find it convenient to pay by check at the end of every month are making deposits in advance to the amount of their grocery bill so that they will not lose the benefit of the cash payment.

"It has just made this difference with us," says one of the grocer's best customers. "When we had an account we used always to be a month behind on our purchases, always paying for what we bought last month. When we paid cash, the cash coming in and that going out on groceries ran an even race. Since we have started the system of paying in advance for the groceries we expect to use during the month, we are a month ahead, and we are putting 10 per cent of our grocery bill in the bank. It was a little hard to get started, but it gives us a very comfortable feeling now."

Two other stores in Fond du Lac, Wisconsin, and also stores in Portage, in Waupun, and in La Crosse, all Wisconsin towns, have adopted the plan. Other

grocers all over the country are seeking some methods by which they can reduce the high cost of foodstuffs for their customers, and at the same time keep aboveboard themselves. A company which runs a chain of stores in the Middle West has started the practice of charging for delivery, and they announce that they sell goods for less than grocers who have a free delivery.

Others are cutting down their delivery service and their prices together, though they often gain the reputation of being ungracious by doing so. A grocery and meat market in a small Middle Western town has only three deliveries a day, and people must either accommodate themselves to these deliveries or carry their purchases themselves. In this town there is a very good market three times a week. Many women will buy supplies for

two days in the market, then take the heavy market basket to the grocery, buy two cans of tomatoes or make some other small purchase, and ask the grocer to have the basket delivered with the tomatoes at her house. Realizing the injustice that this has worked in the case of his rural customers and also the town housekeepers who carried home their own market baskets, the grocer has refused to deliver anything not bought in his store, and that only at certain times. As a result, although his business amounts to nearly a third of a million dollars a year, he has practically eliminated the delivery of very small orders, and the saving is very evident in his prices.

A system which is in operation quite generally over the country is the marketeteria plan. In this way not only the delivery and credit service charges are eliminated, but also the services of the clerk. The housewife comes in the store, picks up a basket near the door, and directed by placards, posted conspicuously along the line, she chooses her own goods. When she has finished making her purchases, she carries her basket to the cashier's desk, where the parcels are wrapped and paid for.

This plan is limited by the fact that only small articles, packages and canned goods, can be easily adapted to the marketeteria system.



The country woman who takes her groceries home in her own car is saving 10 per cent

Larger purchases, such as potatoes and flour, and things which must be weighed, like rice, corn meal, etc., must be ordered in the regular way. Since the country woman is likely to buy in larger amounts than her city friends, the plan does not please her as well. Then, too, the personal element which counts for so much in buying is lacking under the marketeteria system. Most shoppers like to become personally acquainted with a manager or a clerk upon whose advice they can safely rely.

From the consumer's point of view, however, the Cash and Carry system is the most satisfactory. It gives the housekeeper a chance to make a definite saving by planning her marketing so that she can get the benefit of the discount, without making her feel that the grocer is giving her a bonus of any kind.

Handling Boy Help

By R. E. ROGERS

THE one crop that I raise more of than of any other is onions from the seed. This of course means considerable hand work, although there are some pretty good machines for weeding in the rows.

I find that it does not pay to pay just enough to get the job done, but to pay enough to get it done well. It costs a little more, but it's worth a lot more. I can get boys up to thirteen years of age for from 80 cents to \$1 a day. This seems like pretty good pay for a youngster who could not earn anything much at other work.

Lately I have found that for a good many kinds of work the "job" method suits the "kids" and me better than the other way. I take a couple of rows through the field myself, and then estimate—which I can do pretty closely after weeding experience of my own—as to the time it will take the boys to do the work. Then I say to them that here is a block of 10, 20, or more rows. I will give \$4 to you when you've cleaned them all up satisfactorily. They look the work over and usually take it, because I always figure that they will be able to make close to \$1 a day if they keep busy.

The advantage of doing the job work is that I have time to look after a good many other things while the boys are doing the weeding. They don't have to be looked after, and they know it. This gives them a certain amount of pride and independence about their work. They know also that if the work is not well done when they ask for their pay that they will have to make it right.

When working by the day I find that a few minutes during the morning and afternoon taken off for a run or play will pay both in work done and in more interest that the boys take in the work. If they run down to the well for a drink for ten minutes, they come back with all the hitches out of their backs, and go to the work with a hustle.

The paying off of the boys is worth while studying, too, I think. Some boys like to have their pay every night. Others like to have it saved up and have a large "wad" come to them in a bunch. Find the ones that like either way and deal with them as they like. Some boys look forward to a check. They like the idea of going up to the cashier's window with an endorsed check which will get their money for them. Then a good many boys have accounts at the bank. The check saves them bothering with money or running the risk of losing it.

In whatever deals you have with boys they must have a square deal. You will not always get that kind of a deal with them, because there are some crooks among them. You will lose by these sometimes, but yet they expect you to use them right, or even a little more than right. If the boys are rained out an hour before quitting time, don't "dock" them

for the time. It won't amount to much for you and will give you a "stand-in" with them that's worth a lot. On the other hand, if you allow one to come a half-hour late in the morning and say nothing it will only be a short time until the whole bunch will come an hour late.

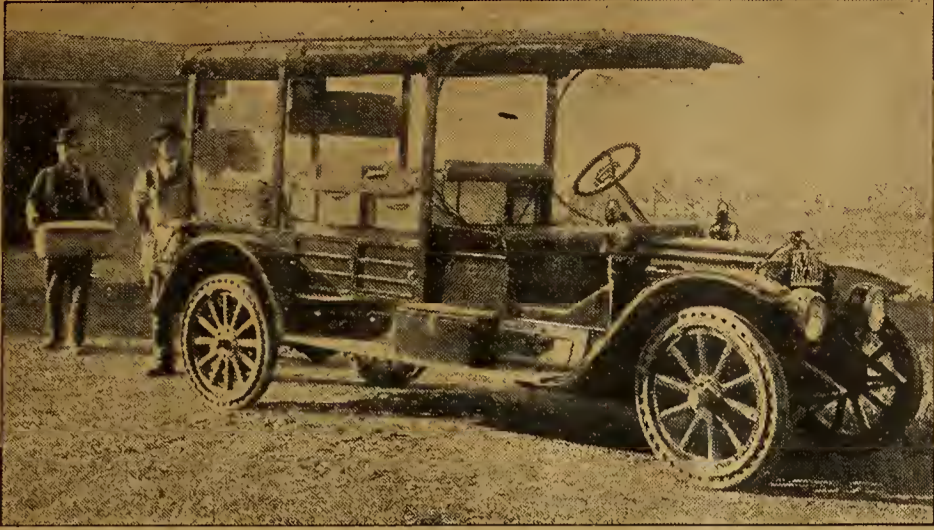
It pays to furnish files to keep the knives they use in good shape. Also have a couple of jugs around so they won't have to run too much after water. Probably the jugs will be broken pretty quickly, but another one is worth a lot more in extra work than it costs. I let them work in the shade while it lasts. I always consider any suggestions they make about the work.

Show them all the short cuts that will save them time, such as weeding two or three rows at a time. It will be money in both pockets, because the more a kid makes the harder and better he will work, no matter whether on job work or on day work.

E.W.



Always give your boy help a square deal. It pays to meet them more than half way



For all-weather hauling of perishable products, a light top and side curtains are advisable. Capacity of this truck is 1,500 pounds



Here is a truck that under good care has made regular trips of more than 100 miles daily, hauling feed and produce

Marketing by Motor

Saving of Perishable Crops Pays Running Expenses

By JULIAN A. DIMOCK

OUR motor delivery outfit became a necessity before we had been using it a week. It changed the whole character of the place. From a back-woods, stay-at-home crowd we began to feel up to date and like live wires.

The town was now only fifteen minutes away, the railroad but forty, and in making the trip we had not used up a day's work for a horse or made a big hole in the hours between sunrise and sunset for ourselves.

This was worth money on the place because besides the saving of time the mental attitude has a definite value. One's feeling toward his work is the thing that makes money when combined with horse sense and seasoned with a dash of hustle and persistence. The "truck," as we call it, was originally made by putting a truck body on an automobile chassis. It had the neat conventional, light-delivery sort of top with drop curtains, and in its new paint the outfit was decidedly attractive when delivered to us. But it was not long before we put away that pretty little body and replaced it with one we made ourselves at a cost of \$10, which was more adapted to our needs. This was a mere open platform surrounded by removable stakes. It extended sideways as far as the running boards, and overhung the rear axle a couple of feet.

If our load was heavy, we could distribute the weight as we thought best, for there was plenty of room forward. Two barrels could even be set at each side of the driver's seat if necessary. We carried as many as nine barrels of apples (1,350 pounds) at a load, while 20 crates of potatoes (1,320 pounds) became the regular amount. This, with the driver, meant 1,500 pounds, which is nearly 100 per cent over the stated allowance of the manufacturer.

If our load was bulky we could stack it all over the platform, add temporary outriggers, and lash boxes or barrels to the stakes. I have handled 43 barrels at once on the truck, and if the road had not been so narrow that I dared not put an outrigger on the left hand side I could easily have run up to 50 barrels.

Truck Advertises Our Farm

WE BOUGHT it the middle of August, and on August 29th made our first business trip. By September 29th we had delivered produce to the value of \$320.50. Of this \$74.93 worth was of perishable stuff—early apples, berries, and vegetables—which could not have been sold within reach of our team.

By the end of the season the account ran this way: Deliveries of standard crops, \$608.52; deliveries of perishable stuff, \$149.93. Total, \$758.45. To make these deliveries the truck had traveled 1,413 miles.

Much of the perishable fruit would have been a dead loss without the truck. If we count all of this perishable stuff as credit, we can charge a delivery cost of 10 cents a mile and yet have all our hauling, done by the truck, for nothing.

But this is not the whole of the story. Beyond this direct saving of waste products we established a market for years to come. Such speedy service commended itself to new customers who, from interest in the service, began to take notice of the quality of the goods.

The advertising value of the truck alone was worth the cost. The near-by villagers, who had sleepily ignored our work, suddenly awoke to the fact that things were doing on the Hilltop. When we passed

E-W

them twice a day with twenty bushels of potatoes at a load, every day for a week, they began to understand why we were seemingly too busy to come to town and sit around the store stove.

Moreover, it seemed impossible for anyone to understand that we had so much work on hand that we could not do errands for all of our neighbors every time that we went to the railroad. Even errands for our own household often had to wait, for it is mighty hard to get in two trips a day when it means 80 or 100 miles of road work besides loading and unloading a couple of cargoes of produce.

Occasionally we crowded in three trips, but that meant a change of drivers. I would take the early and late trips, for I had no chores to do, and night running was as pleasant as day travel to me. Then, sometimes, I would take the "missus" along, and we would carry our supper with us and take our time coming home. We would stop at some attractive spot and watch the sunset, having all the fun of a picnic chinked into a workaday trip.

When our apple barrels were apparently lost by the railroad and a month overdue, the truck earned its way with plenty to spare. We scoured the country for second-hand barrels to hold the crop until the new ones arrived, and when the car finally did reach us we used the truck to bring the barrels over the 12 miles at a rate that made horses seem like relics of the dark ages. The big barrel rack held 100, but it took the horses a long day to make the round trip. With the truck I brought over 43 barrels, unloaded them, and was back at the car in ninety minutes. In the rush of those days I even hauled loads of barrels at night, but it was not pleasant to hit a curve in the dark with a swaying mass high up over your head. More than once my heart jumped into my mouth, until I learned just which curves were unsafe for a top-heavy load.

We overloaded the truck, we ran it in all kinds of weather, and at all hours of the day and night. Our neighbors think we ran a good thing to death, for not one of them but uses his car simply for pleasure and all wear and tear must be charged up against a good time. But we had bought the truck for business, and knowingly ran it with a load that approached the safety limit, for we figured that a broken axle would cost less than a few extra trips. We had no repair bills above \$5 for any trouble caused by running the car, and only one above \$2. Our costs will come later.

In the meantime the balance sheet for the year's running shows a comfortable leeway before we are put in the hole. The truck has come to stay on the Hilltop. And it is liable to wake up any morning and find a twin brother to help it out in the rush seasons.

Not many years ago, automobiles were looked upon as an expense and as a temptation to enjoy one's self to the neglect of farm work. But these are purely personal problems and have no bearing on the usefulness of a car when used as any farm team would be used.

The fact remains that a light motor truck is as reliable as a team, and does the work more quickly, as well as being able to work longer hours. And if incidentally there is more pleasure in driving one than clucking at a team of horses, who is more entitled to that recreation than the man who raises the crops?

On a Homestead

By FRANK E. WIEMAN

IT WAS in March eight years ago that we decided to rent our home in Idaho Falls and take up a homestead. My husband owned half interest in a barber shop, and we had a comfortable home, a nice team of driving horses, a carriage, and a spring wagon.

We decided to make our venture on the "desert." Ten miles due west of Idaho Falls we selected our ranch, and we had the first choice, as we were the first to venture west of the irrigation ditches. We hired men to drill a 285-foot well, and had to haul water seven miles for the engine. The well was finished in August, with a never-failing supply of ice-cold water, and then began our experiences. We built a three-room shack, and before winter had a comfortable stable for our horse, cow, and calf. The cow was a good one, and the calf grew to be a fine cow. We still have her. We bought other cows as we could.

My husband had never plowed a furrow. We had many a laugh over that first garden spot. I drove the team, he held the plow handles. Now he drives five horses and uses a double-disk plow. We planned to keep enough cows and chickens to furnish us with milk, butter, and eggs, and also pay our grocery bills. I learned to make good butter.

We finally got a start with hogs. Last winter we butchered four; this winter we shall butcher seven hogs and two calves, all raised on our place, and fed on home-grown grain. We raise rape, sugar beets, and stock carrots for feed for the hogs.

Last year we raised about a thousand bushels of wheat. We raise Turkey Red for winter wheat and macaroni wheat for spring planting. Our poorest winter wheat yield was about 15 bushels an acre, our best, about 35 bushels an acre.

This is what we have accomplished in eight years. We have 320 acres of splendid land, 175 acres under cultivation, six horses, three splendid cows, four heifer calves. We keep about 75 hens. During 1916 we sold nearly \$100 worth of eggs at market prices, besides all we used at home. I sold fresh eggs all winter. From our three cows we have had all the milk and butter for home use, and sold nearly \$200 worth during 1916. We have more and better machinery, a new granary, and a buggy shed.



The load on this sturdy trailer is 200 feet of barn siding weighing 3,020 pounds. The automobile pulling it has a 35-horsepower motor. A spring hitch prevents strain when starting and stopping

\$1195 F. o. b.
Racine

Mitchell Junior
a 40-h. p. Six
120-inch Wheelbase

\$1460 F. o. b.
Racine
SIXES
7-Passenger
48 Horsepower
127-inch Wheelbase

Why Other Cars Omit These Mitchell Extras

The Mitchell offers you
31 extra features—
24 per cent added luxury—
100 per cent over-strength.

When you see these
extras—each a wanted
feature—you will ask
why others don't include
them. This is to tell you
the reason.

Cost \$4,000,000

The Mitchell extras, on
this year's output, will
cost us \$4,000,000. To
add them to the ordinary
car would bring the price
too high.

In the Mitchell plant,
we save them in factory
cost. John W. Bate, the
great efficiency expert,
has worked for years to
do that.

This entire 45-acre
plant was built and
equipped by him. And
every detail is designed
to build this one type
economically.

He has cut our fac-
tory cost in two. No
other plant
could build
a car like the
Mitchell at
a n y w h e r e
near our cost.
And that sav-
ing goes into
these extras.

**A Lifetime Car
100% Over-Strength**

The 31 extra features
—like a power tire pump
—will seem a great at-
traction. The added lux-
ury—24 per cent—makes
the Mitchell the beauty
car of its class.

But our greatest extra is the
double strength in each impor-
tant part. In the past three
years we have doubled our
margins of safety.

Over 440 parts are built of
toughened steel. All safety
parts are vastly oversize. We
use a wealth of Chrome-Vana-
dium steel. We use Bate can-
tilever springs, which never
yet have broken.

We have proved that Mitch-
ells can run 200,000 miles.
Few owners will live to wear
a Mitchell out.

Our \$1195 Six

Now there are two sizes—
Mitchell and Mitchell Junior.
But even the smaller has a
120-inch wheelbase. Both
sizes offer you values far be-
yond similar cars.

See these new models. See all
the extras they embody. You
will want such a car as the

Mitchell when
you buy a car
to keep.

If you don't
know the near-
est dealer, ask
us for his name.

MITCHELL MOTORS
COMPANY, Inc.
Racine, Wis., U. S. A.

TWO SIZES

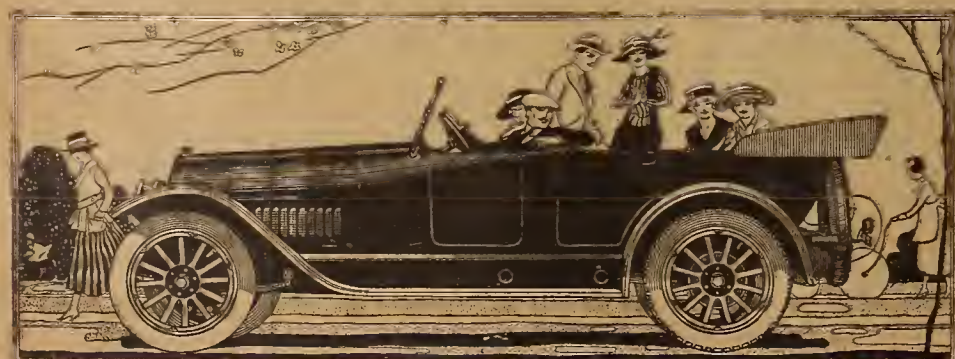
Mitchell —a roomy, 7-passenger
Six, with 127-inch wheel-
base and a highly-developed 48-horsepower
motor.

Price \$1460, f. o. b. Racine

Mitchell Junior —a 5-passen-
ger Six on
similar lines, with 120-inch wheelbase and a
40-horsepower motor—14-inch smaller bore.

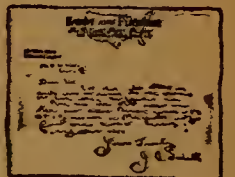
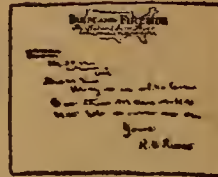
Price \$1195, f. o. b. Racine

Also six styles of enclosed and convertible
bodies. Also new Club Roadster.



The Editor's Letter

Closer Buying to Cut Down Expenses



I WANT to tell
you about a
veteran reader
of FARM AND
FIRESIDE who is
planning to build
a house. He is
seventy-two years old, his wife is sixty,
and, unlike many young folks who are
satisfied with any cosy nest that has
roses climbing over the porch, this old
couple has given close attention to some
practical points in building.

They want a design that will look
well in a grove of trees, but it must not
have a bungalow roof, which they dis-
like. And they want a bathroom near
the two bedrooms—between them if pos-
sible.

"But I don't seem to be smart enough
to draw the plans," the old gentleman
says. "Can you furnish plans or tell
me where I can get them? I have
some house plans that I like pretty
well, but the bedrooms are too small.
We want them to be about 12x12 feet.
My wife is also particular about plenty
of light in the kitchen, and there must
be a good place for a built-in cupboard."

But the most interesting part of his
letter is toward the end, where he tells
about his farm work. "Whom shall I
write to about federal farm loans," he
asks, "and how can a farmer get help to
carry on his farm with the cheapest
rate of interest? I suppose I could find
out at my county seat, but so many are
interested in their own behalf, and they
study how to get all they can out of the
old farmers or, as I was going to say,
the 'ignorant' farmers."

I asked the Federal Farm Loan Board
at Washington to send this man litera-
ture telling about their system for loan-
ing money, and also saw that he received
plans for the kind of house he had in
mind. And now let me tell you about
an odd chain of incidents. A few days
after answering the letter about this
couple's house, I happened to be chat-
ting with a young man who owns an
auto-filling station. Gasoline was sell-
ing in most places locally for 24 cents,
but this dealer has been making a spe-
cial price of 23½ cents a gallon to all
who buy in five-gallon lots or more.

"Profit is only about a cent a gallon,"
he said, "and counting shrinkage, rent,
insurance, and investment, the business
pays just a fair living." He is never-
theless finding it pays to sell gasoline
on the split-cent basis because of the
greater volume of business attracted.
"Talk about people with cars having
lots of money!" he exclaimed. "You'd
be surprised how close business is. Ev-
erybody seems to be buying close."

AND the same evening when visiting
the owner of a small farm the sub-
ject of spending money again refused to
stay down. We were talking about com-
pulsory military training. "I'd enlist
to-day," this man said, "if the Govern-
ment would take care of my family.
But how can a woman with four chil-
dren live these days on a soldier's pay
of \$16 a month? She can't do it. Liv-
ing is too high." So here we have the
frank opinions of three classes of men
whose personal interests are varied and
yet whose thoughts are so much alike.

People are "interested in their own
behalf," says the old gentleman of sev-
enty-two.

"Everybody seems to be buying
close," says the gasoline dealer.

"Living is too high," says the family
man on the small farm.

Thus as a means of building a home,
of providing for one, and of securing a
little pleasure in life with a motor car,
close buying is a matter about which
nearly everyone seems to be thinking
earnestly. Close buying is probably the
most practical solution to the high cost
of living. And while waiting for the
administration to give us promised re-
lief against extortions levied on neces-
sities, let us see what we can do through
our own efforts to offset war prices.

First, a good article can generally be
bought for least money when it is made
chiefly by machinery and sold in large
quantities. Magazines, matches, dress
patterns, glass, cement, and building
materials are familiar examples.

If you were to build a seven-room house
and wanted every detail exactly accord-
ing to your own ideas with special sizes
of windows and doors and new designs

in hardware, I
presume it would
cost you at least
\$6,000. With four
men working on
it, they might fin-
ish the job in
eight months. But if you are willing
to use doors and windows of standard
sizes and hardware selected from stock
patterns, you could build the same size
house for about \$3,000, half of the other
price, and be all settled in three or four
months. It would be just as good a
house to live in, just as comfortable, and
a more profitable one to sell.

As extreme examples showing the
economy of standard products, try to
buy a wagon with 2½-inch tires, or a
binder with a 7-foot 7-inch cut, or iron
piping 1 5/16 inches in diameter.

THUS you can usually buy closest
when you can find what you want
among standard goods made in large
quantities preferably by machinery.

Now we come to the second general
help, which is this: An article that has
been on the market a long time and sells
at a fixed advertised price is nearly al-
ways a wise and safe purchase. The
fact that it enjoys public favor is about
as good a guarantee of value as you can
ask for. Good-will has helped to adver-
tise it; the original cost of the patent or
special equipment to make it has long
ago been distributed over thousands of
purchases. I have in mind a breakfast-
food company that sells a larger pack-
age to-day for ten cents than it did five
years ago for fifteen. The same is true
of several makes of automobiles, vacu-
um sweepers, and especially so of elec-
trical equipment. Phonograph records
have improved in quality and the trend
of prices is downward instead of up-
ward.

Furthermore, we sometimes consider
ourselves close buyers when we are
really persistent spenders of small
amounts that soon reach considerable
sums. Buying books, furniture, and
household articles on the installment
plan is a popular practice. But please
dismiss any thought—if you have such
a thought—that this little talk is an
effort to change anyone's habits or
transform business methods. I am con-
scious of the fact that we usually buy
on the installment plan only when it
isn't convenient to pay cash. But we'll
never have much surplus cash if we
keep buying on the basis of a dollar
down and a dollar per. In cold facts,
cash or short-term buying is much more
economical than the plan of install-
ments, where risks are great and col-
lection costs are high.

Another type of persistent spending
is represented by the barber shop, where
dimes and quarters dribble away.
Safety razors, an invention of this gen-
eration, have given thousands relief
from the delays and expense of barber-
shop service. The average man who
shaves himself saves the cost of his
razor and all shaving materials at least
three times every year.

Thus in purchasing a well-known
product of guaranteed quality—whether
it be breakfast food or razors—you
know by its wide-spread use that the
public has found it a money saver, for
no business can endure for long unless
the article offered for sale benefits
the purchaser as well as the man who
makes it.

Finally, let us remember in these
times of war prices that it seldom pays
to buy anything simply because it is
cheap.

An article may have a certain in-
trinsic value, but if you have no defi-
nite need for it, past experience will
tell you how frequently it proves to be
useless junk on your hands.

So, altogether, close buying is simply
finding the channels through which re-
liable goods are sold most cheaply. And
while investigators are trying to find
and stop the leaks of business, let us
select our purchases from those streams
of commerce which seem to have the
fewest leaks as shown by a large volume
of trade, the greatest experience in
management, and the best guarantee of
satisfaction.

The Editor

Trading the Farm

An Old Homestead is Nearly Sacrificed by Unequal Exchange

By PAUL H. EATON

LET me tell you about a recent experience in trading a good farm for city property. Possibly the story may prove a blessing to some other person who is contemplating a similar exchange of a farm for city property "that will yield a fabulous income with no work, no care, and nothing to do but collect the rents."

Such propositions when painted in glowing terms by glib-tongued real-estate sharks frequently appeal to a person advancing in years and whose life has been mostly spent in building up a good farm and rearing and educating his children. When these children are grown and settled on farms of their own, the old folks are not to be blamed for wanting to settle down and take it easy upon the income from their accumulations.

Besides my farming and dairy interests, I own a small property in a city of more than 50,000 inhabitants, and consequently can qualify as being somewhat acquainted with property values in both places. This is one reason why Mr. and Mrs. Brown, an elderly couple, in just the situation outlined, came to me for advice and assistance. They felt they were both getting old and that it was time to stop farming and rest up a bit. Consequently they listed the old homestead for sale at \$30,000, which was a very reasonable figure, and waited for a buyer.

Very little property was changing hands, so no buyer was to be found. The real-estate man then began to talk up a trade for city property and got in touch with a person in the state metropolis, who said he had an apartment house that would be a fine bargain except that the owner didn't really want to trade because his property was making such big profits. However, the real-estate man, ostensibly very anxious to help the old folks out, but in reality anxious about his own commission, finally prevailed upon the owner of the apartment house to agree to a trade.

His first arrangement was for the city man to go out and look the farm over, and the Browns were told to look for them on Sunday. From the local agent's talk and the letters and telegrams of the city agent it looked like a fine trade, so the Browns were very anxious to please the city man. Sunday came, but no city man arrived. The next morning the local agent received a telegram stating that unless the Browns would come to the city and see the apartment house and property by the middle of the week the deal would be all off, as the owner didn't really want to sell anyhow. However, if they came and liked the apartment house, he would take the agent's word for the value of the farm and make the trade.

This made the proposition look better than ever to the Browns, and with a little urging from the local agent the three of them took the next train for the city. It was at this juncture that my services were called into the case. I knew they were anxious to sell, and had spoken of trading, but knew nothing further. So imagine my surprise upon receiving a telegram late Tuesday evening from the eldest son telling me what train the Browns were on and asking me to meet them as they came through my town and go on to the city where the apartment house was located.

The train passed through my town about five o'clock in the morning,

and notwithstanding it was a bitterly cold morning I drove in several miles to the depot, and found them on the train. I tried to learn something of the proposition, but it seemed the real-estate man had given plenty of glowing descriptions and approximate values but few facts. The most I could learn of the location of the property was that it was a little less than a dozen blocks in some direction from the post-office, and consequently considered close in.

I began to get suspicious, but with the ever-present real-estate man I held

of mortgage the property carried. But I have no doubt a part of it was padded for effect. At any rate, my judgment told me the mortgagee would shortly have a worthless property on his hands.

As soon as I discovered the nature of the property offered for trade, I urged an early return to the hotel. As the Browns were relying upon me to accept or reject the trade, I told the real-estate men we would do business on only one condition, which was that they clear their property of mortgage and give us \$30,000 in cash for the farm.

They rather resented my intrusion, and remarked that they didn't know I had the say-so of the trade.

However, we left the city by the next train out and the Browns stopped over a day or so with me on their way home. While here they took occasion to put in an order for a milking machine and a few other labor-saving appliances, and left for home happy and contented to stay on the old farm, and also considerably wiser for their experience.

The apartment-house and city-property proposition is well enough to talk about in glowing terms of real-estate and investment men. But for the aged farmer seeking a retiring place and an income investment they are mighty poor ventures unless he understands property values and one hundred and one other little things about apartments. In my experience the man who makes the most real money out of the apartment-house proposition is the man who builds them and makes his profit by sell-

ing to the other fellow. The 12 and 15 per cent profit on the investment which they figure on paper when talking up a trade is likely to vanish into thin air, as in the case I have just related. Some apartment-house owners make their profits by trading them to farmers, then selling the farm for cash and building another apartment house and trading it to another. They have no use for the land, and use it only as a means of getting more apartment houses to trade.

A farmer may be able to occupy one of his own apartments without paying rent, but more often it is apt to prove a dead weight or a loss. So I say, as I said to the Browns, better stick to the old farm and get a few labor-saving appliances and hire a little more help unless you can sell out for cash. The farm is the best place to live after all, and most of those who do sell out and leave, soon wish they were back again.

Too Sensitive

SO PEOPLE are continually hurting your feelings—snubbing you, treading on your toes, so to speak. Are you so great a somebody that people always have you in mind?

You have a few slams and knocks coming to you, of course. We all have. But probably this particular knock was not intended for you at all. Don't you know that we get just about what we are looking for?

If I were you I should look for something better than sore fingers and hurt feelings all through life. Give the other fellow the benefit of the doubt. If you suspect he tried to hurt your feelings, go at once and do him a kindness, and smile, though it be through tears.

Sensitiveness is such a subtle form of selfishness that we do not recognize it as such. Think it over. Are you selfish?



Copyright by Brown Bros.
The property was near the post-office, but nearer still to the brewery district

my peace. I really believe he chose the coldest day of the winter purposely so little could be told of the actual surroundings, and they could cinch the deal. When it came to seeing the property it made my blood boil to think of those old people traveling a portion of a day and one whole night to see it.

Was Undesirable District

I found it was an old apartment house fairly well built when new and quite large, but located in the midst of a brewery district. A few questions simply put to one of the tenants when out of earshot of the two real-estate agents brought the information that while they were all permanent tenants at the time, every one of them was a bartender, and would either be out of a job or move out of the city with the closing of the liquor business the first of June, when the prohibition law was to take effect.

The location was such that no one of other business would care to live in the apartments, so the property would shortly be almost a dead weight on the owner's hands. They endeavored to show something of its value by the size



They installed some labor-saving conveniences in the old homestead and are now contented, also considerably wiser



Those Sanitary Shoe-Soles of Neolin

When you're milking cows or bedding down the horses, a sanitary shoe-sole seems the reasonable thing.

In the creamery, when your milk slops, a sanitary shoe-sole by all means!

In the chicken house, a cleanly, non-porous shoe-sole: that's what's wanted there.

And so for the farmer—Neolin Soles.

Neolin Soles—sanitary soles. Non-porous soles that do not sop moisture nor sog impurities.

Why shouldn't housewives welcome Neolin Soles indoors, too—so much cleaner and wholesomer than leather with its heavy reek of stored impurities?

A better than leather shoe-sole—Neolin. It is a better wearing, dry-foot sole. It is springy and foot-easy, and is kind to feet through long, hard work.

In grown-ups' and children's sizes.

Beware imitations, so mark that mark; stamp it on your memory: Neolin—

the trade symbol for a never changing quality product of
The Goodyear Tire & Rubber Co.
Akron, Ohio



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Trade Mark Reg. U. S. Pat. Off.
Better than Leather

FARM and FIRESIDE

THE NATIONAL FARM PAPER

Harry M. Ziegler, *Managing Editor*

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May 19, 1917

That Men May Be Free

NOW that we are at war with Germany, every American citizen—every man, woman, and child—should do everything possible to win the war. Our nation, our ideals, and our freedom are at stake. This thing called Prussian kultur—which has overrun Belgium and a part of France, which has murdered old men and children, raped women and girls, devastated the country, and destroyed the towns—must be killed and wiped out forever now.

It is hard for many of us who live far from our seacoasts to realize that we are at war. But we are at war now just as much as if the German fleet had shelled New York, Boston, San Francisco, or any other seacoast town. Just because the British fleet keeps the German fleet from leaving its harbor doesn't alter the situation.

This is the big thing we have to face: If Germany is successful in this war it will be only the matter of a short time until she will attempt to retrieve her losses in the United States or the States of South America. If we don't defeat Germany now with the help of the allied nations we shall have the grim task of defeating her alone later.

We all abhor war because it is a terrible thing. We dislike to think of Americans being killed on the battlefields of Europe, but we can't expect the allied soldiers to fight our battles on land and the allied fleets to keep the German fleet from attacking our shores.

As President Wilson has so aptly said: "I hope the needs of the nation, and of the world, in this hour of supreme crisis, may stimulate those to whom it comes, and remind all who need a reminder, of the solemn duty of a time such as the world has never seen before. The supreme test of the nation has come. We must all speak, act, and serve together."

Buy a War Bond

EVERY one of us should and can buy a war bond. The bonds are issued in small as well as large denominations, so that there will be bonds to fit everyone's pocketbook. The demoralizing effect on our enemies will be of inestimable value if they know that every American farmer regardless of his financial condition is investing in our war bonds.

Here is the reason for this: The German people have been told by the Imperial German Government that the American people are a wishy-washy, comfort-loving, pleasure-seeking, and dollar-chasing people who haven't the backbone to fight for their rights, and that they are in the war for the money they can make out of it. Oversubscription of the war bonds, with a large part coming from the farmers of America, will be the best answer to these lies.

Aside from helping our nation to

carry on the war to a successful end by buying a war bond, the bonds make an attractive and conservative investment. While they pay a small rate of interest, they are non-taxable, and are easily convertible into cash at any time. Your local banker will be glad to tell you how and where you can buy a bond.

It will bring the greatest praise and commendation to the farmers of America if we not only grow enough food-stuffs to feed the world, but in addition help further to win the war by buying the war bonds of our nation.

Better Fire Protection

BETTER fire protection is one of the greatest needs of the average home. In one county, in a midwest State, eleven country residences were destroyed by fire in one week.

In most of these instances some insurance was carried, but always the owner was a heavy loser.

Every farmstead should have some means of fighting fire. Best of all is a water system with good pressure and ample hose to reach the highest point on any building. All farmers cannot be so fortunately fixed. None, though, are so poor that they cannot make some preparation, and few are so rich that they can

The Farm Scales

WHEN the common practice was to "dollar off" practically all farm animals, there may have been no urgent demand for the farm scales. In those days the old-fashioned steelyards may have sufficed. To-day it is no longer so. With hogs selling at more than 15 cents a pound, with corn worth more than \$1 a bushel, and with concentrated feeds selling at record prices, it's high time that the mere guess should go.

To farm without owning or having access to a pair of reliable scales is, in a way, pursuing a "heads I win, tails you lose" policy. It is not enough that we know that we get correct weights when we buy or sell. What is more important is that we know what the live stock is doing with the feed that goes to them from day to day, how many pounds the hogs or cattle or sheep are putting on.

There is a big advantage, too, in being able to market stock, "home weights." The saving in shrinkage will soon pay for a pair of scales.

In this day, when everything is looking so much like a dollar, we need to know what we are doing. Neighborhood measuring rules are not enough. We need the scales to tell the true story.



A first-line soldier

Rollin Kirby in New York "World"

afford to take chances. One thing, at least, every farm should have, and have handy: a long, stout, light ladder. Yet, how many farms are without this first aid in fire fighting!

A ladder, buckets, and a supply of water or a chemical fire extinguisher have saved many a house or barn. For want of these things thousands of dollars' worth of property has been destroyed and lives have been lost.

There is danger from fire every month in the year. In summer we have the added danger from lightning.

In this day of much preparedness, let not fire preparedness be neglected.

One Tractor Demonstration

TRACTOR manufacturers have decided to hold one large demonstration this year. They will announce the place and date later. The place will be a point centrally located. The high cost of materials, the uncertainty of transportation facilities, and war conditions have all had a strong influence in reducing the number of official tractor demonstrations to one.

This demonstration will include improved styles of plows and other tractor-drawn implements, and promises to be the most complete assemblage of labor-saving tillage machinery ever shown under working conditions.

Our Letter Box

Food or Famine?

DEAR EDITOR: In this great time, when every citizen must do his part, the President has made his chief appeal to the men who live on the land. He is right in doing so, for the safety of our country just now is in the hands of our farmers.

The two great weapons in this war are arms and starvation. The war against German arms will be won or lost in France—the war against starvation will be won or lost in America. The Kaiser cannot whip the French and English armies and the English navy while England has food. But it is still possible that the German submarines may be able to keep food enough from reaching England to starve her into submission.

If the submarines win, the first item in the Kaiser's terms of peace will be the English fleet. With the English fleet in his possession the Kaiser will be master of the world.

What will happen to us then? Every man who stops to think knows the answer. We shall have money, food, labor, land—everything that is desirable in the world except the power to protect what we have.

Even if the armies of our allies should crush the German military power this summer, before the shortage of food can reach the point of want, the world would still need vast quantities of American food. But if they do not,

only one course can make us safe, and that is to grow food enough on our farms for ourselves and our allies, and to put ships enough on the sea to carry the food, in spite of the submarines, to the men who are fighting our fight.

If the war lasts beyond this summer, it will be the American farmer who will win or lose the war, who will overcome militarism and autocracy, or allow them to spread and control the world, ourselves included.

This is no fanciful picture, but sober fact. Many a man will make light of it until he comes to think it over.

The clear duty of the nation is to guarantee the farmers a fair price for their crops when grown, and a reasonable supply of labor at harvest. The clear duty of the farmer is to raise food enough to win this war for democracy against Kaiserism.

No such responsibility has ever rested on any class of men since the world began as rests to-day on the farmers of America.

GIFFORD PINCHOT, Pennsylvania.

From the Mexican Border

DEAR EDITOR: I am now a private in the United States Army, and in spite of my foreign birth I want the United States to have an army and a navy strong enough to strike a hard blow on whomsoever tries to attack or invade our territory. This country should have an army of at least 500,000 men, with a million in reserve.

I am a native of Holland, and I came to this country five years ago. I wanted to join the army, but because of my foreign birth I was unable to do so. Then in November, 1916, I applied at Rochester, New York, was accepted, and was sent to the Columbus barracks for training. After nineteen days I was sent to Fort Sam Houston with 224 other recruits, and we were stationed on the Mexican border.

After this experience I look forward to the time when every young man in America, as in Holland, will have some military training. I do not believe in war; I think war a terrible thing, which ought to be averted if possible. But I do not believe in peace without honor. Though neutral, Holland has more than 1,600,000 men on her border ready to fight for their liberty and their country. Let us stand back of our President.

WILLIAM FARO, Texas.

Favors Volunteer System

DEAR EDITOR: I am very much opposed to universal military training. I believe we should attempt to bring about the disarmament and abolition of compulsory training, instead of adopting them.

Not every girl is fitted for housewifery, for motherhood, or for business life; inclination and ability must be consulted in choosing a vocation for our daughters. Similarly with our sons. There are many boys who from mere babyhood show a decided preference toward some particular vocation—boys whom Nature seems to have marked and especially endowed to become artisans, inventors, orators, musicians, poets, painters, lawyers, farmers, actors, medical men. These have no natural inclination to warfare, and it would be utterly unfair and positively injurious to the individual and the nation to force them into military training.

I am therefore in favor of volunteer enlistments only, since by the volunteer system only those of military temperament will be taken. I believe in a well-paid, well-treated professional army.

I am in favor of conscription only in actual wartime, when an important war, on which the life of the nation depends, as in our Civil War, is being fought, and the volunteer enlistments are insufficient. Even in such cases I would consider compulsory training and service not as a good and desirable thing, but as the lesser of two evils—to be preferred to the dissolution of the nation. I consider army training particularly dangerous to the moral welfare, the mental growth, and the material contentment of the farm boy.

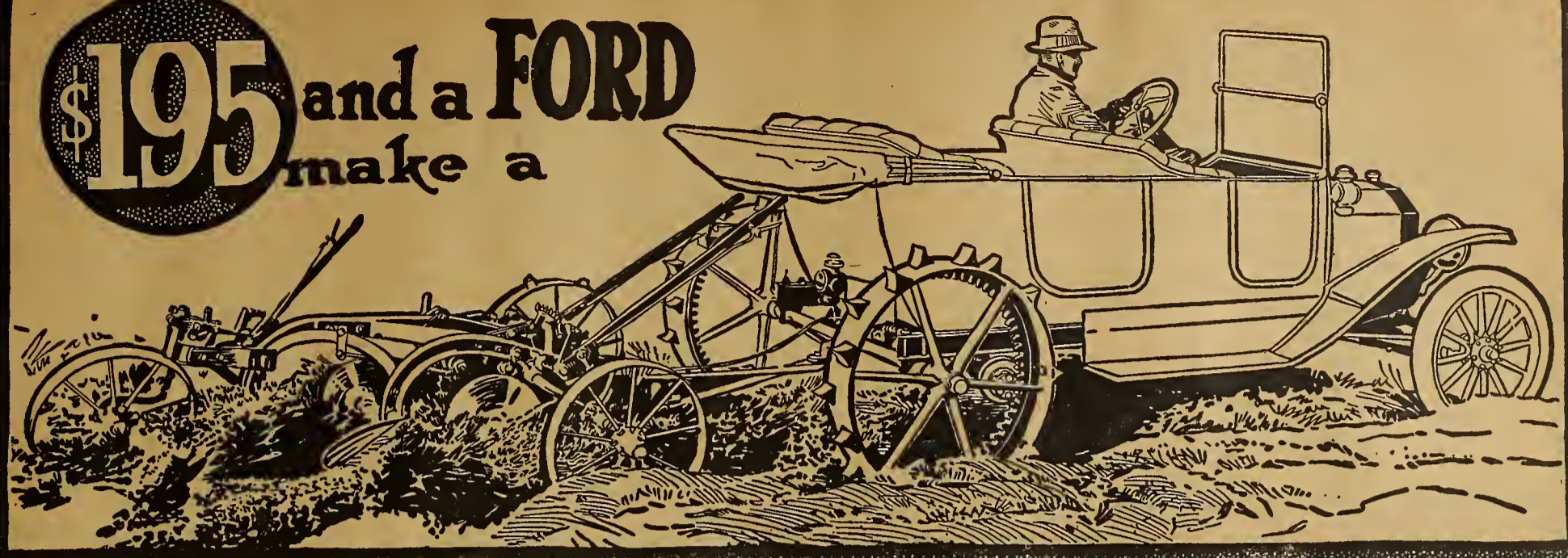
LYDIA M. O'NEIL, New Mexico.

A Civil War Veteran's View

DEAR EDITOR: I served as a soldier from 1861-65, and although I spent much of my younger days in the woods and could handle a rifle with the best, yet I realized that it took six months or more solid training to make me much of a soldier. And I also realized that had the North been trained as soldiers there would have been no war. It is the nations like China that get kicked and robbed by every nation that wants something from them.

Yes, I am unalterably in favor of universal military training for our young men. It will be a godsend in more ways than one. We must protect our country, and every man should do his part. D. L. HAWKINS, California.

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The Staude Mak-a-Tractor is guaranteed to do the work of four horses and do it on high gear. It has demonstrated its ability to plow seven acres a day while horses are plowing but four. It will do every other type of farm work for you with equal saving in time and money.

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In all your farm work, in all kinds of weather, the Staude relieves you of much worry and expense, cuts your cost in half and increases your working capacity. Increased capacity means increased production, which is the equivalent to having more acreage.

Put this Money in Your Pocket

Cost for feeding and stabling three horses—cost of labor—two days out of every five—cost of man to run plow—your boy can run Staude Mak-a-Tractor.

Value of crops raised on 20 acres released to you by each Staude Mak-a-Tractor.

Two hours out of every four you now take driving to town and back.

Staude with Fifth-Wheel Attachment will do your hauling for you.

Demand These Features

Special Staude Tractor Radiator—without it you will burn your Ford motor up the first day you use it for a tractor. Without it your water would steam in 20 minutes.

Special Patented Force Feed Oiling System—without it scored cylinders, burned-out bearings are certain. Staude down-thrust drive with tractor axle back of driving pinion—without it you waste power and put a heavy, excessive load on your Ford.

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Staude Will Save It for You

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You need your tractor now. Our enormous production facilities, big dealer organization, well-organized effort, enable us to put Staude Mak-a-Tractor into your hands immediately. Send your order in today.

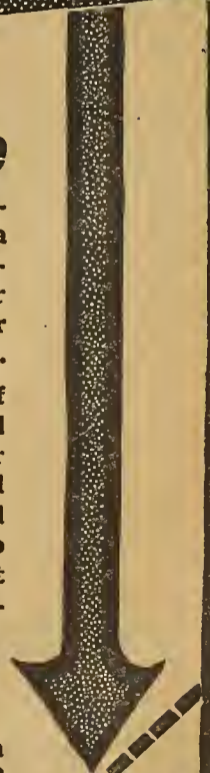
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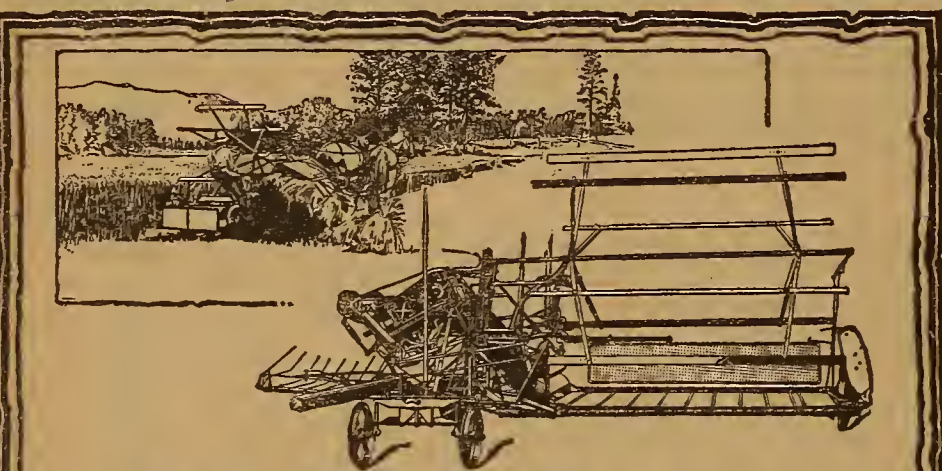
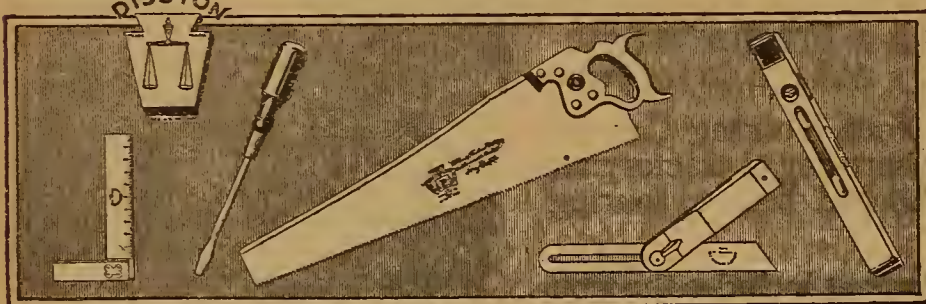
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THIS year, American farmers have need of first-class equipment in harvesting machines, twine, and binder repairs. Buy none but well-known, long-tried machines and buy early. The early buyer alone can be sure of securing the necessary repairs and new machines to take care of his grain harvest.

Buy good twine, and buy it now. This is no time to be thinking about saving a cent or two on twine, but to think of the dollars that good twine will save in the field. Our advice to every farmer is to buy at once the full amount he is going to need, and not alone to buy it, but to go to the dealer, get it, and take it home.

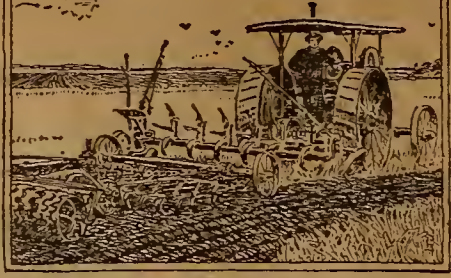
Champion, Deering, McCormick, Milwaukee, Osborne, and Plano binders now cost less in the amount of farm produce required to buy them than ever before. But prices of all manufactured goods are likely to go higher without much warning, while there is no chance at all for them to go lower this season. The safe thing to do, therefore, is to buy now, at present prices, for immediate delivery.

Your local dealer has done his share to insure the harvesting of your grain. See him as soon as you can and arrange for the repairs, twine, or new machines you are going to need this year.

International Harvester Company of America

CHICAGO (Incorporated) U S A
Champion Deering McCormick Milwaukee Osborne Plano

Machinery



Engine Experience

By H. C. McCormick

IHAVE used a five-horsepower gaso-line engine for four years. The first year I had a little trouble, as I had never owned an engine, but since then it has given no difficulty whatever. Of course, wires will sometimes break, and if you depend on batteries they will give out, and various other little things will happen. But after a man has run an engine for a year or two he is able to locate the trouble very quickly.

When I undertake to start my engine now, it usually goes promptly at the first turn of the fly wheel. I have often had it start at one turn, with the thermometer below zero and with the engine out of doors, as it always is. I have a small house that I set over it as a protection, but we generally remove it when running the engine. The house is so small that it makes rather close quarters for starting the engine or putting in water or gasoline.

If I were building a new engine house I should make it large enough to permit all necessary work to be done inside without crowding. Our engine is as profitable as anything we have on the farm for the amount invested; we could hardly get along without it. We use it chiefly to cut wood, grind feed, and run a small ensilage cutter. We can grind grist while we would be getting ready to go to the mill, and we have all the grain when we get through.

The mistake most people make in purchasing an engine is getting one too small. When I bought mine there were very few as large as five horsepower in our neighborhood here in New York, and I thought it was big enough. But now I am sorry I did not get a ten-horsepower engine instead of five horsepower. The ordinary farm should have one ten or twelve horsepower engine for the heavy work, and also a small one of about two horsepower for the light work. One is as essential as the other because the light one cannot possibly handle the heavy work, and the big engine would be wasteful if used for churning, washing, or any other light work.

If I were to buy a new farm engine and could afford it, I should certainly buy a farm tractor, but of course that is a question each man must decide for himself, and it will depend largely on the condition of his farm and the size of his pocketbook. He should have at least 100 acres of land, not too rough.

To Break Wire Easily

By Ben H. Hart

A WIRE! A wire! There are so many times when we need a piece of wire and can't find one or, as is more frequently the case, the wire is too long. Here is a little plan that will break a wire very easily. Even a tough No. 9 wire cannot resist this method.

Hold the wire you wish to break firmly in one hand. Grasp the loose end you wish to break off in the other hand, bringing the wire into a kink where you

wish it broken. Pull the kink as tight as you can, work the wire a time or two and it will break. If you already know how to do it, you will be glad I am telling others anyhow.

Breaking Boulders

By C. B. McGee

IHAD a field that contained a number of limestone boulders of various sizes. They were too hard to break with a sledge and too heavy to haul from the field.

They occupied a considerable amount of rich ground that was a total loss. I had learned how to use dynamite, and read an article telling how hard boulders could be broken by a method called mud-capping.

I made a test of the large boulder shown in the first picture. I should say that it weighed at least a ton. I placed three sticks of 50 per cent straight dynamite on top of the boulder near the center, and primed with a fuse and cap. Then I covered the charge with eight inches of tough mud.



Before blasting—

The force of the explosion broke the boulder into the fragments shown in the second picture. Most of these pieces



—and after

could be handled easily, and a few large ones I broke with a sledge. In a similar way I mud-capped all the boulders and removed them from the field, which is now clear.

A FRAMELESS foot-lift sulky plow is one of the newest things in plowdom. It is cheaper and lighter than most other sulky plows.

A Seeder and Weeder

By Carlton Fisher

THE interesting implement shown in the picture below is a sulky seeder and weeder designed for accurate broadcasting and for soil preparation. The seeding box just below the driver's seat will sow grass seed, alfalfa, clover, timothy, or other small seeds at the rate of from two to twenty-two quarts per acre. Or, if desired, a grain seeder box may be used for sowing the ordinary small grains.

A small two-wheeled truck similar to a harrow cart supports the driver's weight and guides the machine. This implement is 12 feet wide and is an improvement over the slower and less accurate method of hand broadcasting and harrowing. It is also made in a one-horse size, three feet wide.



The weeder teeth may be set by means of a lever in front of the driver to cover the seed either shallow or deep



Automobiles

Examine Lighting System

By B. H. Wike

NOW and then you will come across some car owner who has suddenly found his lights to fail. By fail I mean that his lights were out of order and he was unable to fix them. It is a serious undertaking to attempt travel on any road at night without lights.

My own experience one evening on finding after sundown, while 20 miles from home, that I would have a time of it taught me the lesson of ever afterwards making sure the lighting system was dependable before attempting any drives. In this case I took it for granted that everything was all right, but when I tried to light my lamps (a carbide system) I found a lamp hose missing.

I could not tell whether it was in place that morning when I left home, because I had failed to look. Moreover, I had but little carbide in the generating tank, and there was a leak in the tubing between the lamps and tank. It was a case of getting along with the aid of what light two dirty and smoky oil side lamps would give. That 20-mile drive took at least three times longer than usual.

Several times the car was out of the road. I barely missed striking a cow which was serenely crossing my path. The number of rigs I almost ran into was not remembered.

Of course I could not help it, but I was already resolved to be prepared next time, and this resolution has never been broken. The nervous strain under which I drove and the uneasiness of those who rode with me made it distinctly unpleasant and an experience I do not care to repeat.

No matter whether the lighting system be electric or gas, look it over before taking the car out for a trip that will extend into the night. You will find it pays. Night driving is a pleasure when fine lights illumine the way.

Clean Valves

By J. D. McIntire

CORRECT valve performance is one of the most important items to take into consideration when correcting engine trouble of any kind. The carburetor cannot be adjusted, nor can the ignition system be fully tested unless the valves are working right. Sometimes a car will run well for a distance of perhaps 50 miles, or until the engine is thoroughly hot, and then begin to lose power. This may happen in any car having poppet valves. In such cases, test for valve trouble in the following manner:

Watch your engine after you have climbed a long hill. See if it runs jerkily in high gear at a speed of from five to seven miles an hour. If it does, increase the speed to 20 miles an hour and the trouble will probably disappear, since a car will run fairly well at that speed even with a bad valve. Now slow down again to seven miles an hour, and if the engine again jerks you may be sure the exhaust valve seats are dirty or the valve stems are sticking in the

guide. The intake valves rarely give any trouble and need not be cleaned and ground to a seat as often as the exhaust.

The burned gases leaving the engine completely surround the exhaust valve, and leave solid deposits on the stem to such an extent that it will not work up and down in its guide. I have seen valve stems carboned in so tight that it was necessary to drive them out with a hammer and punch. This is an extreme case, however, and could have been prevented with a little care and attention.

The remedy is simple. About once a week after you have run your car into your garage, remove the spark plugs or open the priming cocks and pour into each cylinder about half a cupful of kerosene, enough to wet thoroughly the walls of the combustion chamber. Then crank the engine with the ignition switch off. This will spread the oil all over the combustion chamber and over the exhaust valves and stems. Allow the engine to stand overnight. When starting it in the morning you will notice with the white smoke little particles of carbon come out of the exhaust. By this time the kerosene has not only removed some of the carbon from the cylinders but has cleaned the exhaust valve stems as well.

One car owner who followed this method stated that he had never had his valves ground in a period of six years, and the car seemed to have the usual amount of power. Extreme records of that kind are frequently secured at the expense of some other part of the mechanism, and even with the best of care the occasional scraping out of carbon and the inspection of the inside of the motor are desirable. But with the method of preventing sticky valves so simple, no one need submit to the annoyance of having them.

Useful Accessories

By W. V. Relma

THE motometer shown in the sketch is a little instrument attached to the radiator cap which will indicate the temperature of the contents of the radiator. This is a very good thing to prevent running the car without water or oil; that is, a high temperature will indicate that something is wrong with the cooling system and the driver should investigate at once.

Another convenience is a door pocket, which can be purchased already made for applying to any standard make of car. Door pockets are handy for holding goggles, road maps, and knick-knacks. Tire tape is a familiar article to all who have used a bicycle. It is useless for mending auto tires, but is exceedingly handy for binding electric wires, gas-line tubing, or for any small emergency repairs that are apt to arise. A somewhat unfamiliar device to most car owners is a small attachment for spark plugs which is said to increase the efficiency. It is a spark gap or spark intensifier. Tire-saving jacks are not as generally used as they should be. One of these is used to raise each of the four wheels of the car when it is allowed to remain idle for any length of time, thus saving the tires by removing the weight. A single stroke of the handle when it is properly adjusted will raise the car sufficiently.

Owners of old cars will be interested in the ready-finished top and rear-curtain outfits, which can be purchased from several different makers to replace old torn or faded tops. They run in price from \$6 up.

A simple tire-testing arrangement such as the one illustrated will be a great help if the driver does his own tire-repairing. If the tubes are tested in a bucket or some similar makeshift, punctures or leaks are frequently overlooked that would be found in a good test tank.

The New Hupmobile

Rare-Beauty, High-Duty

- Bright finish, long grain, French seam upholstery
- Improved cushions and lace type back springs in seats
- Leather-covered molding finish along edge of upholstery
- Neverleak top, black outside, tan inside—waterproof
- Tonneau gipsy quarter curtains, integral with top

- Hupmobile-Bishop door-curtain carriers, folding with curtains—exclusive feature
- Large door pockets, weighted flaps
- New body color—Hupmobile blue
- New variable dimming device graduates brilliance of head lights
- Tail lamp independent of other lamps
- New soft operating clutch

Already supreme in performance, the new Hupmobile claims supremacy in beauty. The high-duty car is now the rare-beauty car as well.

Beauty Crowns Other Virtues

Now we crown performance and quality with year-ahead beauty. The new Hupmobile bears the style distinction its inner virtues deserve. We do not look for its equal in beauty this year.

It is, in fact, the most beautiful Hupmobile we have ever built. It carries a finer finish. It is more luxurious. It is still more complete.

Preferred for Performance

For two years proof has been plentiful. It is daily given anew. By dealers in demonstration. By owners in everyday use. By records like those made in the 20,000-mile Capital-to-Capital Tour.

Many times performance has brought the Hupmobile preference over cars that cost more, or have more cylinders.

The new Hupmobile is the same splendid performer. In sand, in mud, on the hills, it will add new chapters to Hupmobile history. Over and over again it will demonstrate the value of Hupmobile quality.

Quality Higher Than Need Be

For quality is still first with us. That quality which begets long life and superior performance.

We know our motor is better than need be. So much better indeed, that other manufacturers call it fit for a \$3,000 car.

We could use a less costly clutch. The same with the transmission, the rear axle.

Judge By What It is and Does

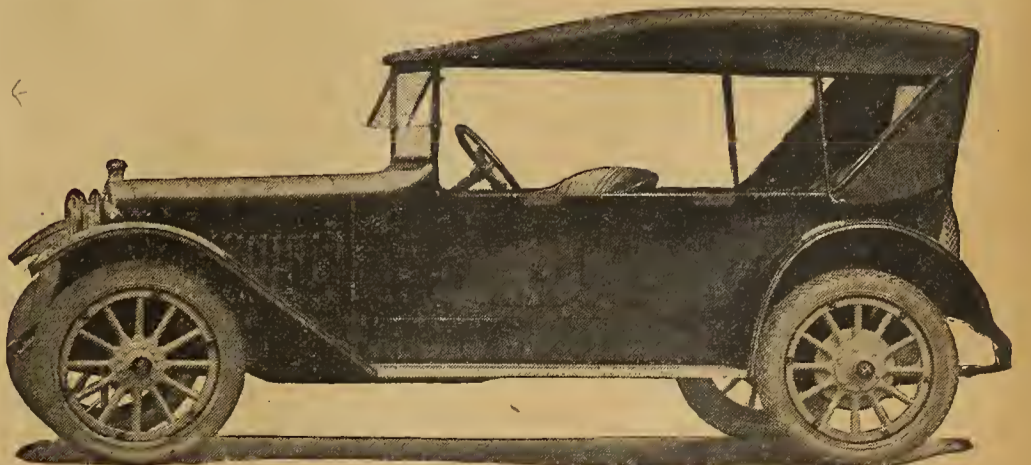
Never before has a car of Hupmobile type shown such refinement of detail. Never before has a four-cylinder car had such a wondrous performance-record.

We expect you to judge the new Hupmobile solely on its merits. If you will do that—if you will check its beauty, its quality, its performance against the same features of other cars—we know what your decision will be.

Ask us to send you the report of the United America Tour—an engrossing story of how the Hupmobile, in visiting every state in the Union, crowded four years of travel into four short months, and mapped a new route from Washington to every state capital and back to Washington. Get the pictures of every capitol building in the country.

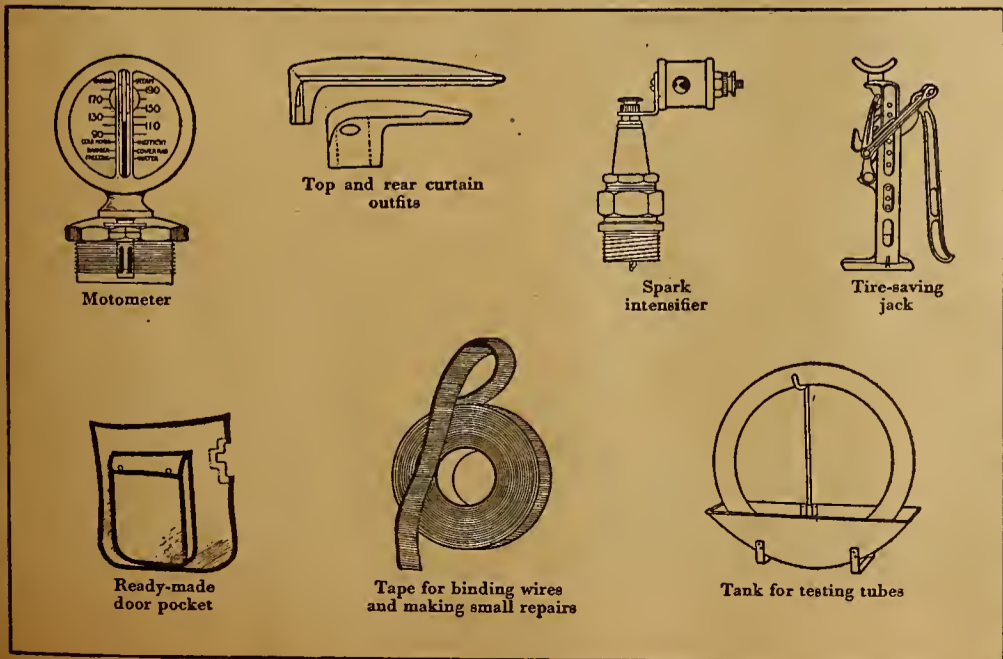
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Victrola IV, \$15
Other styles \$25 to \$400



Garden—Orchard

Corn Popper Ammunition

By I. M. Angell

MANY a corn popper is unloaded for want of ammunition. A square rod of suitable soil, I find, will keep our popper popping for a year. Also, the solid block of popcorn gives much better results than the same quantity of seed strung out in a single row or two. In the solid block the pollinizing takes place more successfully and the ears are better filled out in consequence.

The main requirements for popcorn are fertile, well-prepared soil and culture suitable for a good crop of sweet corn, together with sound, well-ripened seed of one of the desirable varieties, like White Rice, Silver Lace, White Pearl, Eight Rowed, Queen's Golden or, if dwarf variety is preferred, Tom Thumb or Baby Golden. The popcorn should not be planted until it will germinate and start growing without any delay. Popcorn requires better soil and care than the large field-corn varieties. It is best to have the soil well prepared and to give culture that will keep the land in good tilth, and thus preserve the moisture as completely as possible to keep the popcorn thrifty throughout the growing season. A little extra care will often double the crop. Another essential is thorough ripening, which adds both to the popping quality and its flavor.

We find the popping quality best when the popcorn is not much over a year old, but have had thoroughly good popping results from corn two years old when it was stored where no moisture could reach it.

How I Started with Beans

By Jerome S. Davis

I HAVE been greatly interested in the articles which have recently appeared in FARM AND FIRESIDE on the subject of bean culture. I am a beginner in commercial bean culture. Here is my experience with this money crop, which proved quite encouraging to me even though, in the first place, my land is not very suitable for beans, being a heavy loam and rather wet.

I bought a peck of large white kidney beans and planted them (five beans to the hill—about 1,600 hills) on a quarter of an acre of land. The rows were 35 inches apart both ways, which allowed of cultivation in two directions. I took extra good care of them, cultivating them more than was generally thought necessary, and I hoed them twice. When they were pulled in the fall there was scarcely a weed to be found.

I told my neighbors who saw them growing that I was going to get \$30 from this quarter of an acre, and they said I was "bean crazy." On the night of September 16th the vines were badly frozen when they seemed not more than two thirds ripe. I pulled them soon after freezing, and piled them around stakes driven in the ground (about 100 hills to each stake) with roots to center and tops out. This formed cocks about three feet in diameter and three or four feet high. About the first week in Oc-

tober I took them into the barn and had lots of fun threshing them with a three-horsepower gasoline engine and a little bean thresher. Some FARM AND FIRESIDE readers may wonder how a beginner in this business happened to have a bean thresher. Last August, when I began to feel certain that I was going to have a crop of beans, I bought a little second-hand bean huller and put it in first-class condition before the beans were ready to shell.

After recleaning the beans in a fanning mill, I found the frozen ones were dried down to about the size of sunflower seed and were quite dark, so I had to pick these all out by hand. After getting them all in No. 1 condition, I had about 3 3/4 bushels which I sold to a near-by city groceryman for \$7 a bushel, realizing \$25.50 for my crop, which was at the rate of \$102 an acre. I weighed the shrunken beans and found that if they had all been ripe I would have received \$31, or at the rate of \$124 an acre.

This year I am trying the White Wonder bean on a much larger scale. It is claimed for these beans that they are two or three weeks earlier than the White Kidney bean, which, if true, will enable them all to ripen before endangered by frost, which comes early here in Chemung County, New York.

My Coal-Oil Cure-All

By S. E. Bandy

COAL OIL is a commodity found in every farm home, yet its many uses and benefits are known only to a few people. I have saved many a fine watermelon patch from destruction by the striped beetle by mixing coal oil and wood ashes—one part coal oil, by measure, to twenty parts ashes—and putting it on the hills around the roots of the melons. It must not touch the vines, and one large spoonful to a hill is sufficient. The bugs will depart immediately. It should be repeated after each rain.

A handful of coal oil and salt mixed and dropped into each mole run will cause them to change their location. A peck of lime thoroughly mixed with a gill of coal oil and spread lightly around the early cabbage plants will prevent the cutworms from destroying them. When it is hoed in later, it seems to act as a fertilizer.

With coal oil I cure scaly leg in chickens by applying it directly with a feather. I also find that a mixture of coal oil and lime used generously around over the chicken house will prevent mites.

Heating Small Orchards

By C. Rapp

THE practicability of heating small orchards has often been questioned. It is comparatively much harder to heat a small orchard than a large one, and more pots are necessary to maintain the required temperature. For this reason the expense of both installation and operation are much greater an acre than in the large orchard.

On the other hand, the small orchardist need employ no labor. Likewise, he uses oil in small quantities only, and has no expense for storage.

The cost of installing a heating system for a 10-acre orchard under Midwestern conditions has been estimated at from \$225 to \$495, varying with local conditions. This includes heaters, tank wagon, torches, thermometers, and a storage tank. The cost of labor and fuel should not exceed \$10 to \$20 an acre annually. In regions where frosts are frequent this small cost is good insurance, for, if well cared for, any orchard will produce a fruit crop worth from \$100 to \$400 an acre.

Will You Harvest Honey?

By S. Thorne

WHY not plan to have a few colonies of bees harvest some sweetening for you to take the place of expensive sugar? Many a man devoting much of his time to orchard and garden work might just as well have a few hundred pounds of honey to reduce his sugar bill.

On an average every person consumes about 80 pounds of sugar or its equivalent annually. In one State, Oklahoma, there were about 1,250,000 pounds of honey harvested in 1916. This is estimated to be less than one pound in five hundred of the honey which was not gathered. The same estimate states that the bees saved 625 tons of honey, and over 300,000 tons were left unharvested on account of lack of bees. Again I say, why not link up the bees with your garden and orchard work?

Birds Roost in Branches

By T. B. Baldwin

THE season, climate, culture, and soil all being favorable, a single tomato plant, intensively grown, will sometimes furnish all the tomatoes a small family can use. This tomato vine of the Pink Beauty variety is one of the twelve grown the past season by Mr. H. S. Ellis of Hunt County, Texas. The vine began bearing fruit early in June, six inches from the ground, in clusters of from two to five fruits. The fruiting continued until late in October. When



One of twelve Texas-grown tomato plants which averaged over a bushel of fruits to the plant

the picture was taken the plant measured 14 feet high and then carried a load of over one-half bushel of tomatoes. The fruits were of fine quality, with few seeds. Many specimens weighed from 9 to 12 ounces each.

Tanglefoot for Insects

By Amos L. Gridley

WHERE one has only a limited number of fruit trees, one of the best easy means of reducing crawling insect pests is to use tanglefoot bands around the trunks of the trees. These bands will stop practically all of the caterpillars that undertake to climb the trees to do damage or to propagate their species. Of course this is only one means of prevention and must not be depended on to control insect pests generally.

How Outwit the Mole?

By Mrs. O. W. Potter

THE apparently insignificant little animal, the mole, is outwitting us all in our (Florida) community by continuing to ruin our newly planted gardens and lawns year after year. We have tried to get all the help possible from government and state experiment station bulletins dealing with moles, but we are still in trouble. Traps and poisoned bait recommended by different authorities afford only partial relief. A great majority of the moles continue to go scot-free.

EDITOR'S NOTE: Have any FARM AND FIRESIDE readers really solved the mole-extermination problem? If so, will they not help a long-suffering people?

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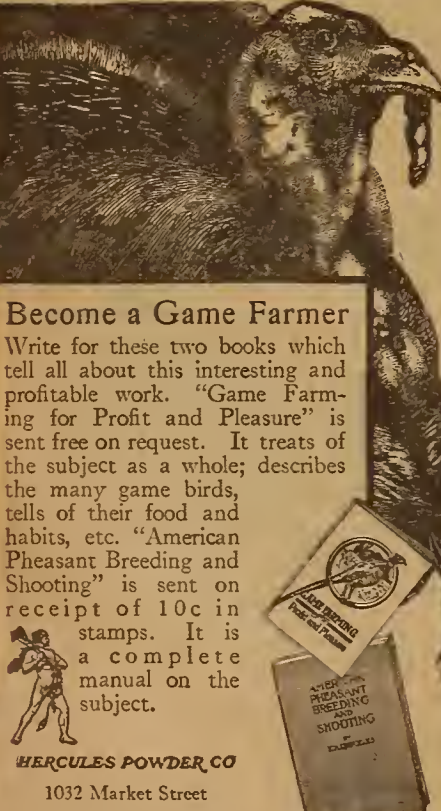
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Become a Game Farmer

Write for these two books which tell all about this interesting and profitable work. "Game Farming for Profit and Pleasure" is sent free on request. It treats of the subject as a whole; describes the many game birds, tells of their food and habits, etc. "American Pheasant Breeding and Shooting" is sent on receipt of 10c in stamps. It is a complete manual on the subject.

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1032 Market Street
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Heaters burning oil, distillate, coal, etc., are used to prevent frost damage to fruit and truck crops. From 50 to 150 fires an acre are needed

Good-Health Talks

By David E. Spahr

OCCASIONALLY it will be found that the beginning of a sense of digestive discomfort may be traced to the lack of sufficient fluid at meals. There is an old tradition that water taken at meals dilutes the gastric juice, retards digestion, and overloads the stomach. Hawkes's experiments and observations in recent years, however, contradict this tradition, and show very clearly that when an abundance of water is taken at meals there is a remarkable increase both in the quantity of the gastric juice, in its hydrochloric-acid content, and perhaps also in its fermentative power. Animals can fast with less loss of weight and strength if allowed plenty of water. The forty-day fasters of a score of years ago always drank freely of water. A dry diet is likely to be moved on less rapidly by the stomach and intestines, and delay in this action is apt to produce discomfort.

Pain Near the Heart

I have a pain about my heart and a numb feeling in my body, due to indigestion.
Mrs. R. E. D., Georgia.

TAKE a teaspoonful of effervescing phosphate of soda in a glass of water before meals, and a couple of teaspoonfuls of peptenzyme after meals.

Moles and Freckles

Please give me a remedy for moles on the face; also a harmless remedy for freckles.
L. E., Illinois.

DO NOT apply medicines to moles. Let them alone or consult a surgeon. For freckles use the following: Bismuthi subnit., two drams; ung. simpl., two ounces. Mix and apply to the skin at night; remove in the morning with a little cold cream previous to washing.

Impacted Cerumen

I have been troubled with earache since last fall. At that time I had two discharges of matter and wax from my ear. They ring all the time. I went to my doctor, and he looked into my throat and said it was all clear and the nose in good shape, and the dentist says I have good teeth. What is the matter?
K. L., Kansas.

WHY did they not look into your ears? I imagine you have impacted cerumen. Get an ear syringe and wash your ears out gently with hot water with a half-teaspoonful of soda to the pint.

Superfluous Hair

Can you tell me a safe way in which to remove superfluous hair?
M. B. C., Pennsylvania.

PROBABLY the surest way to remove hair is by the electric needle, but it is very tedious and expensive. There is, however, a depilatory powder that seems to do the work splendidly, which can be ordered for you through this department.

Dropsy

Can you tell me of a cure for dropsy?
T. J. E., California.

DROPSY is only a symptom of disease of the heart, liver, or kidneys, and it would be necessary to know which organ is causing the trouble in order to prescribe intelligently. A teaspoonful of compound jallap powder taken from one to three times daily in a glass of water after meals will carry off much of the effusion through the bowels, if enough is used to open them up freely.

Catarrhal Headache

C. J., INDIANA, has found a remedy for catarrhal pains in the forehead. It is to fill a basin with water as hot as can comfortably be borne, and dip the forehead into it gradually several times. It seems simple and harmless.

Chloasma—Liver Spots

I am a farmer's wife, thirty-eight years old, and enjoy good health, except that my face is covered with brown spots. On the advice of a lady I drank pennyroyal tea and they almost disappeared. But I could not get any more pennyroyal, so they soon returned.
Mrs. M. O. G., Nebraska.

THE discoloration is usually due to some visceral trouble—torpid liver, digestive disturbances, or uterine disease. The treatment is to discover the exciting cause and remove that. If the pennyroyal did the work before, why not give it another trial? You can get the oil at any drug store and you can make as much of the tea as you wish.

CHANDLER SIX
\$1395

Chandler Power IS Power

CHANDLER power is not power on paper. It is power on the hills and mountain-sides; it is power in the mud and sand.

Four years of skilful and conscientious manufacturing effort have developed and refined the Chandler motor to a point approximating perfection. Chandler owners long ago named it the Marvelous Motor, and now, more than ever before, it is the Wonder Six, powerful, flexible and enduring.

On high gear and without apparent labor it pulls the hard steep grades and winding hill roads where other motors shift to second.

In crowded traffic it responds to every demand.

On open roads it answers every call for speed.

The Chandler motor is a fact-motor. What any Chandler will do every Chandler can do.

The Chandler Company has never built a special demonstrating car.

The Chandler Company has never furnished to any Chandler dealer a special gear ratio.

Every Chandler is a demonstrator.

Chandler motor features include:

Solid Cast Aluminum Crank Case Extending from Frame to Frame

Silent Chain Drive for Motor Shafts

High Tension Magneto Ignition

No Inflation In Chandler Price

If we asked one hundred or two hundred dollars more, the Chandler would still be under-priced.

Where many makers have added as much as three hundred dollars to their selling price within the year just past, the Chandler price is only one hundred dollars higher than the sensational low price established more than two years ago. There is no inflation in the Chandler price.

Seven-Passenger Touring Car, \$1395
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Unbeatable Exterminator of Rats, Mice & Bugs
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Stop Fattening Rats, Mice & Bugs!
On your food or on Catch Penny ready-to-use substitutes—whose bulk is inert flour and grease
Why Trap Rats & Mice, One By One, while Those Uncatched rapidly increase!!!
END THEM ALL TO-NIGHT WITH a 25c box of ROUGH ON RATS
The Recognized Standard For Half a Century
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These Curtains Are Essential To Complete Car-Enjoyment

Collins-System Curtains—the original always ready automobile curtains—are regular equipment on the cars of quality in every price-class.

Always at hand when needed; out of the way when not in use. You can beat a summer shower with them and have the curtains out of the way again a minute after the sun comes out.

COLLINS-SYSTEM CURTAINS
A point to judge the Car by

You can have Collins-System Curtains on any car you buy, if you insist on them. You'll be glad, many a time, that you did insist. But be sure to look for the label shown below—it is your guaranty against imitations.

JACKSON TOP COMPANY, Jackson, Michigan

Collins Always Ready Curtains
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No. 1,100,000, July 1, 1914. No. 1,100,001, Dec. 7, 1914. No. 1,117,000, Feb. 6, 1915
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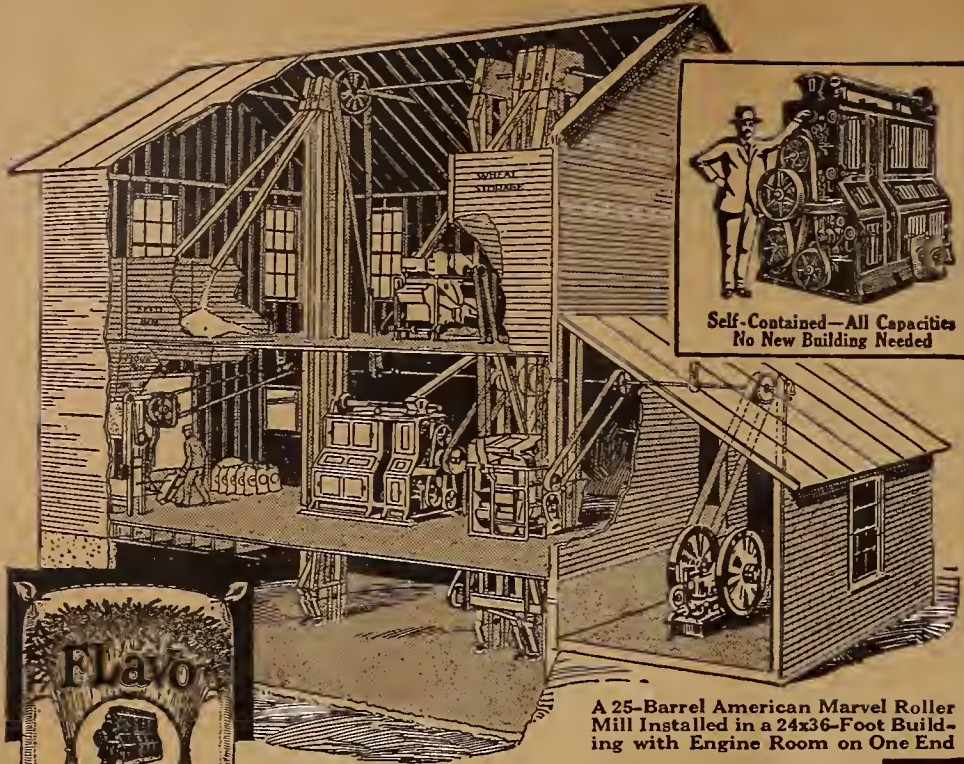
"6130" Gray Serge Special at \$16.50 is a splendid example of the fact that Clothcraft Clothes—ready-to-wear—yield the utmost in fit, looks and wear that can be given men and young men at moderate prices.

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Self-Contained—All Capacities
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Every Bag Certified and Guaranteed

A 25-Barrel American Marvel Roller Mill Installed in a 24x36-Foot Building with Engine Room on One End

You Can Own This American Marvel Mill And Make \$150 to \$1000 Per Month Making FLavo Flour

You can do this by owning and operating one of these wonderful, self-contained roller flour mills, and supply most of the flour used in your community, your profits according to the size mill.

The American Marvel is the latest and greatest improvement in roller flour mills, and is revolutionizing milling. Owing to its short, quick, patented process of milling, it gives you a stronger, sweeter, purer and whiter flour at less cost, so gives you greater profits. One man without previous milling experience, with the aid of our book—"Selling Plans"—which tells all about how to operate a milling business, can run it. Men all over the country, who were inexperienced in flour milling, are now, with this mill, getting independent. Here is the opportunity of a lifetime to get into this permanent and dignified business—a business in every community which is second in importance only to banking.

AMERICAN SELF-CONTAINED MARVEL MILL

When you purchase an American Marvel Mill you become a member of the Community Marvel Millers Association and can sell your flour under our nationally advertised brand, "FLavo," as shown above, a brand already known and demanded in your community. Your mill products are inspected free every 30 days by our Service Department to keep you up to quality. We start you off right, see to it your mill continues to operate perfectly

This Can Be Your Brand

Read What Other Owners Say

Williams Mill Co., of Williams, California, owner, made \$3,804 net in 6 months. Many like this. Sprague & Ward, St. Johns, Mich., say: "Makes the best flour at a minimum cost." Frank H. Wood, Venice Center, N. Y., says: "Our American Marvel puts us on 'Easy Street' all right." Stevenson Bros., North Fairfield, Ohio, say: "Our American Marvel Mill supports 2 families and made \$2,550 net in 6 months." Bell Grain Company, Crowell, Texas, are making \$554.00 each month with a 50-barrel American Marvel. Elliott & Myers, of Superior, Neb., say: "Most profitable business we ever entered."

Hundreds of Other Testimonials

Owners in every part of this country will let us send you figures, confidentially, telling of their big profits. Then you can write them. Over 1,000 successful owners during 7 years. Write us today.

and your flour is always up to our standard, and practically make

Your Success Assured

with the best and most economically operated roller mill, with our "Confidential Selling Plans," with our free Service Department, and with our nationally advertised brand of flour, "FLavo," which can be your own brand in your community.

Cash or On Time

This is one of the most permanent and real money-making business opportunities. You can start right now for the new harvest in this profitable business with our 15-barrel mill, the house, machinery and power erected and ready to start, if you have as much as \$2,000 to invest. Sizes of mills, 15, 25, 40, 50, 60, 75 and 100 barrels per day. Power required from 6 h. p. up. Terms, cash or on easy terms. The mill will soon pay for itself.

30 Days' Trial

Our mill is backed by the strongest guarantee ever made on a flour mill, and every sale is absolutely on 30 days' free trial—you to be the sole judge whether you keep the mill. Write for "The Story of a Wonderful Flour Mill," experiences of owners, and our proposition about the opportunity of making FLavo FLOUR with the American Marvel Mill in your community. Get our proposition—then decide.

Write Today Sure!

To Prospective Owners or Inquirers

Be sure to write us today

Good, live men wanted, young or old, who think they can succeed in any business.

Easy Payments

allowed out of profits, where we are satisfied conditions are right. You will get this book and proposition at once—FREE.

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Please send me your special proposition and free book—

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illustrated, letters from other owners, and explain your Special Service Dept., free plans, etc.

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Address

Use this for convenience or a postal or letter. Write today.



Live Stock

The Family Pork

By Mrs. L. E. Armour

A STRANGER may inquire the way to your house, but if you have a stationary pig pen he may be able to find it of his own accord. Portable pens are no more trouble to make and are much more pleasant to live near.

One side of our garden adjoins the barn lot, and as we have many surplus vegetables that would go to waste otherwise we keep a hog in the pen to consume the waste, converting it into pork at a much lower rate than the butcher and grocer sells it.

We have four posts, one at each corner of the oblong pen, posts about six feet in length. Strong slats are nailed securely to the posts (preferably on the inside) to a height of 4½ feet. The projecting portions of corner posts make the pen more easily handled, so they are left as they are. The pen placed near the garden fence makes it easier to feed the vegetables directly from the garden while gathering them for dinner than to make a special trip for the hog's lunch.

Every few days the pen is moved to a clean spot, so it is never sloppy and may be put back to its original starting point whenever necessary.

Then when the hog is fat enough to kill we do not attempt to economize by keeping it to grow larger, which we consider too risky, as we are equipped to keep meat during warm weather.

We kill late in the afternoon, so as to avoid danger of flies, cut the carcass

Sweet Corn for Feeding

By Daniel Prowant

IN PAST years we have had some experience in growing sweet corn for forage purposes, the results of these experiments being mostly with hogs. The results of our experience with sweet corn for hogs has been such that I do not hesitate to recommend an acre or two of sweet corn to anyone who expects to have a number of hogs to fatten during early autumn before the common field varieties are fit to feed, and who will have no old corn with which to feed them.

I have found that sweet corn is rather richer in feeding value than field corn and, ripening earlier than field corn, it is fit to feed several weeks earlier than it is safe to feed field corn.

We select an early sweet corn of some standard variety for this purpose, and give the same attention to getting the soil in proper shape to plant that we use for field corn. The same care and cultivation is also given during the growing season. The only difference is that we always check in field corn, whereas sweet corn had better be drilled. About the same number of grains per foot is used as when drilling field corn. It is often recommended to break off the suckers from sweet corn. We don't do it. It takes a good deal of time, the suckers will come on again anyhow, and if the weather is dry the corn may be badly injured by so doing. Also, these suckers usually produce a fair-sized ear which pays for the room they take up.

Good Feeders Make Good Beef

AN IMPORTANT source of loss to a cattle raiser will be eliminated when they realize that high-class beef cannot be made from trashy cattle. It has been demonstrated experimentally that there is a loss in feeding inferior cattle.

Well-bred, but not pure-bred, cattle of desirable beef type were compared with cattle the same age and somewhat larger, but not of the type desirable for



Now that Uncle Sam will soon need several hundred thousand uniforms for our soldiers, sheep will step out into the limelight a few paces farther

immediately into small pieces, removing all bones.

Then we make a brine strong enough to float an egg, using as much water as will be required to cover the meat. We add two ounces of pulverized saltpeter and two pounds of brown sugar to each 100 pounds of meat. Start the brine to boiling, and with long, sharpened, sticks hold the pieces of meat under the boiling brine five minutes or until no bloody water oozes from it when taken out.

Spread the meat on shelves in smoke-house overnight to cool and allow the brine to remain in kettle overnight to become thoroughly cooled. In the morning put the meat in a keg, jar, or barrel, placing a weight on top of meat. Cover with the brine, tie a cloth securely over the top of the vessel, and put in a cool place. It will remain sweet and fresh until the last piece is used. The "bones" are cooked immediately and used.

beef. The good beef type—quality cattle—made a daily gain of 2.22 pounds, while the undesirable type, although receiving the same amount of feed, made a gain of only 1.76 pounds daily.

The gain on the good-type cattle cost \$8.15 a 100 pounds, while the gain on the coarser cattle cost \$10.25 a 100 pounds. This experiment demonstrates that one of the essentials in making beef is the selection of the right kind of feeders.

Weaning Pigs

MORE pigs are ruined at weaning time than at any other stage of their existence. They should have access to corn and other grain when they are with their mother, so that they will know how to eat and will not miss the milk.

Skim milk or buttermilk is desirable feed for pigs at weaning time. The milk should be fed in the same condition at all times—either sweet or sour—otherwise the digestive system will be impaired.

Usually the pigs are large and thrifty enough to wean at the age of six to eight weeks. They should have access to green forage, such as alfalfa, rape, clover, or sorghum, at all times. The feeding trough should always be kept clean.

Care should be taken that the pigs are not overfed. Overfeeding causes feverish conditions and will stunt the growth of the pigs.

Protecting the Horse

ONE of the biggest factors in making a horse comfortable is the care and protection it gets from heat and storms in summer. A paddock or pasture with access to a shed is preferable for idle horses. The barn may be used also, but it must at all times be free from drafts and well ventilated.

A box stall is always best, but it is not always practical. But a horse should always have a stall to itself, and this stall should be large enough so that the horse can lie down in comfort.



Dairying

Keep Caustic from Spreading

By C. O. Reeder

A LITTLE caustic potash will prevent the nubs on a calf's head from developing into horns, but carelessness in allowing the caustic to spread may result in injury to the eyes. The greatest danger is to allow a calf just treated to stand out in a rain.

The most satisfactory plan is to remove the hair over the nubs, make three light applications, allowing the caustic to dry between each application, and keep the calf indoors if the weather is rainy or threatening. The best age for treatment is when the calf is between a week and two weeks old.

Progress After Drifting

By H. C. McCormick

SEVERAL years ago we were drifting along in the dairy business, not knowing where the money went nor what was the matter when returns were low. At one time eight cows returned us an income of only \$200 in a year. But the time came when we saw this policy did not pay, and we began to weed out the unprofitable stock.

Now we have a half-blood Ayrshire heifer which in four months last winter earned \$46.75, besides furnishing milk for a family of five, and we have used all we wanted, considering it the cheapest of anything we have or can buy. Our four-year-old daughter literally drinks all the new milk she can hold.

Allowing for the milk we used at a conservative figure, gives the little Ayrshire credit for \$66.75 in four months. The feed cost \$35, leaving a profit of \$31.75. Our other cows are almost as good.

We still have some weeding out to do on sheep. We have some three-year-old grade Shropshire ewes with a pair of twins apiece. Each ewe will shear about 10 pounds of wool and will return us \$25 to \$30 this year. On the other hand, we bought some sheep at \$4 each two years ago. They were really too old to buy, and we still have two of them left, which we will turn off this fall. While we will make some money even on these old sheep, we would have made more had we bought good young ewes.

Our registered Ayrshire bull and registered Shropshire buck are both excellent property. The trouble with most of us is we keep too many "counters" in all lines of stock. If we would weed them out and keep nothing but good businesslike stock of all kinds, I think we would have more money, take more pleasure in caring for the stock, and have less fault-finding to do. What is more pleasing than a nice dairy or a fine flock of sheep or well-bred horses to look at, care for, and make money with?

Gentleness Brings Dividends

By Orin Crooker

THERE can be no successful dairying which does not rest upon an appreciation of the fact that a cow is first of all a mother. A cow's ability to

bring forth strong and vigorous offspring and to provide abundantly for the nourishment of such is the corner stone of the dairy business.

There are those who call the cow a machine, who figure painstakingly the amount of foodstuffs she should have to produce her utmost, and who go about their business upon the basis that, as in the case of other machines, production is simply a matter of how much raw material can be turned in a given time into finished product.

It is, of course, unjust to the cow to call her a machine. Machines do not possess nerves, whereas a cow has an intricate system of them. And the relation between this system and the milk pail is so intimate that any condition which affects the cow's nervous system reacts at once upon the milk-producing system. An undue disturbance of normal, tranquil conditions diverts the blood supply from the milk glands and the cow either "holds up her milk" or gives a lessened quantity. It is not without reason that Swiss peasants sing or yodel softly to their cows at milking time.

Rough Handling Reduces Milk Flow

Maternity is a function which demands for its proper fulfillment the gentlest of care and a maximum of shielding from influences which distress and annoy. This is as true after calving as before, since the milk flow is part of this same function of motherhood. The constant and conscientious effort of the dairyman should be to allow maternity to achieve its fullest expression.

Years ago, W. D. Hoard, the dean of American dairymen, placed notices in his stables calling the attention of his men to the fact that anything of this kind lessened the milk flow and consequently injured himself as well as his animals.

A kick given by an angry milker, a blow from a stick or whip, unnecessary hurrying of the animals from the pasture at milking time—all these things mean less milk in the pail and less money in the bank.

Some dairymen use a dog for bringing in the cows. If the dog is so trained that he will send the animals along without hurrying or annoying them, it means a lessening of farm work and is justifiable. But if the dog is simply accustomed to bark and bite at the cows' heels in order to set them into a trot and cover the distance as speedily as possible, the practice results in no gain for the dairyman.

Gentleness in handling the herd and protection from annoyance—these ideals should be constantly in the mind of every man who handles dairy cattle. It would be far better if more emphasis were placed upon motherhood and maternity and less upon bovine machinery.

Thrifty Growth of Sires

TO INSURE the easy management and safe handling of a dairy bull, put a ring in his nose and teach him to lead at the age of eight or ten months. This counsel is offered by the extension specialist in Dairy Husbandry of the New Jersey station. Although bulls seldom show indications of bad temper until several years old, an early training to discipline is advisable.

As a means of inducing a thrifty growth, separate the bull from the rest of the calves as soon as he is weaned, and place him in a yard or pasture where he will get plenty of exercise. When old enough to eat grain, he should receive equal parts by weight of corn and oats, also alfalfa or mixed hay. The first six months of care and feeding will largely determine the kind of animal he will ultimately become.



The early care of a bull largely determines the kind of animal he will become. Liberal feeding and exercise are essential

PATRIOTISM DEMANDS

That All Butter-Fat Waste Be Stopped

President Wilson's powerful appeal for the conservation of the nation's resources is still ringing in our ears. "The supreme need," he says, "of our own nation, and of the nations with which we are co-operating, is an abundance of supplies, and especially of food stuffs;" and again, "Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nation."

Wasteful methods must be abolished. Every device that makes for the saving of time and labor on the farm must be utilized. Every plan that makes for the conservation of our food products must have the farmer's hearty co-operation.

And nowhere is there greater opportunity than in the production of dairy products, particularly butter-fat.

"Fats, fats, fats, more fats," that is the demand of the warring nations in Europe. The men who toil and the men in the trenches must have fats. They are the fuel that the human machine must have.

And no fat is so palatable or so easily assimilated as butter.

When it was simply a question of the farmer's own loss of profit, the tremendous waste of butter-fat on American farms was bad enough, but under present conditions such waste is nothing short of criminal.

And it is wholly unnecessary.

It is conservatively estimated that about a million cow owners in the United States are still skimming milk by some wasteful "gravity" method.

At an average of four cows to the farm, and an average waste of thirty-five to fifty pounds of butter-fat per cow, all of which could be saved by the use of a De Laval Cream Separator, this alone represents an annual waste of at least 140,000,000 pounds of butter-fat.

Then there are, perhaps, a million inferior or half-worn-out separators in use whose owners could save fifteen to twenty pounds of butter-fat per cow per year by replacing such machines with New De Laval's; and this represents another waste of at least 60,000,000 pounds of butter-fat annually.

Also there is the loss of time and labor that a De Laval would save and which could be better devoted to other productive work on the farm. This waste is hard to compute, but it is almost as important as the loss of butter-fat.

These are startling statements, but any dairy or creamery authority will agree that these estimates of waste are really very conservative.

Shall this tremendous waste continue? Will the loyal American farmer permit such waste when he appreciates the duty that is laid upon him to conserve the one article of food that above all others is necessary to the life and health and energy of the men who serve the nation in the field, the factory, the mine—and soon in the trenches?

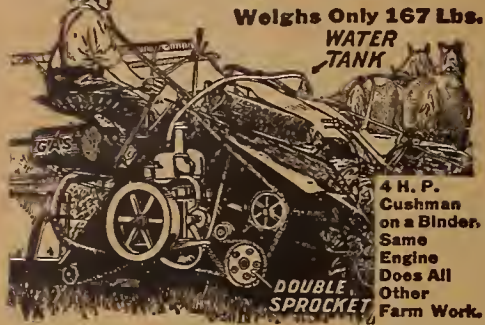
We have always had an abiding faith in the American farmer, and we believe that if he is made to appreciate the full purport of the President's appeal to him, the appeal will not be in vain; and when he further appreciates what the De Laval can do to save the butter-fat which is now being wasted, and that his patriotic duty demands that such waste be stopped—NOW—our plants will not be big enough to take care of one-half the demand for De Laval Cream Separators.

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Crops and Soils

What the Disk Harrow Does

By M. Baird

THE uses of the disk harrow are many, and without doubt it is one of the most valuable implements on the farm. It may be used to conserve moisture, break up cloddy ground after plowing, prepare hard and dry soils for plowing, and destroy weeds after they have grown beyond the control of the smoothing harrow.

Often after plowing, a heavy rain comes and compacts the soil, leaving the best condition possible for rapid loss of this water by evaporation. This land should be gone over with a disk as soon as the ground will permit. Many farmers follow the binder with the disk; that is, they have the disk run behind the binder before the grain is shocked. This is a good practice, as the stubble ground is then in the best condition to catch any rain that might fall before plowing, and the soil is left in such a condition that plowing is made much easier.

Where small grains are to follow corn or potatoes, the use of the disk harrow will often make the plow unnecessary, but either the disk must be run deep or a cutaway disk must be used.

Cultivating Corn

CULTIVATING corn to retain moisture is less important than it has been thought, according to recent investigations. Killing the weeds is the essential thing in cultivating corn. Weeds use from 250 to 350 pounds of water

five and ten cents a dozen. This is quite a large cash return from an acre, and even when the price was at five cents a dozen the returns were larger than from field corn.

However, one cannot depend on a good market every year, and even should he strike a good market he could not dispose of a large acreage of corn. I believe if one lives near a good market he will find two or four acres of sweet corn profitable, and the fodder he has left will when shredded make an excellent feed. Sweet corn does not yield a great amount of fodder, but in order to secure a maximum yield it is well to plant one of the large evergreen varieties. They produce a little larger stalk and more leaves than some of the sweeter varieties.

We have found from experience in selling the ears that the larger ones are preferred to the smaller sweeter-grained ones. The market ear should be of good size. Customers will, if they have a choice, pick out the largest and best-filled ears, and of course one must consider these things when growing the sweet corn for profit. We simply drive into the field with a double-box bed wagon in the afternoon and jerk the bed full of fresh green ears. This is delivered early the next morning to the retail houses, so that there is practically no more work involved in getting this sweet corn to market than there would be in marketing the field corn.

Corn Rows Far Apart

By John Coleman

PLANTING corn rows twice as far apart as the usual distance is a method which should be tried in Western States where the rainfall is less than 20 inches a year.

By this method ground for corn is prepared in the ordinary manner, the rows being listed 42 inches apart, but only alternate rows being planted, thus making the actual rows 84 inches apart. All the ground is cultivated and handled the same as if corn were planted in each row.

When wheat seeding time comes, the wheat can be sown between the rows.



A disk harrow may be used to conserve moisture, break up cloddy ground, prepare soils for plowing, and destroy small weeds

for every pound of dry matter they produce. Thus it is quite important to get rid of them before they have made much growth.

The corn ground can be so handled before planting as to reduce danger from weeds to a minimum. Proper rotation of crops, fall plowing, and timely cultivation in the spring may reduce the number of weeds.

The expense of cultivation is the big item in the production of a corn crop. If the grower knows the needs of the corn plants, he can keep the cost of production low.

Corn should be cultivated as many times as it is required to control the weed growth in the fields.

Sweet Corn for Fodder

By J. L. Justice

SWEET CORN makes excellent fodder if it is grown and harvested properly. Whether or not it will pay to grow it in preference to field corn will depend on circumstances. We have grown it and shredded it, and find that on account of its fine stem and numerous blades it is superior to field corn; but we do not grow it especially for the fodder.

Our plan is to grow from one to four acres, then sell the ears from it in the roasting-ear stage to the local grocers. In this way we have sold as high as \$125 worth of ears from an acre when roasting ears were wholesaling between

With wide-spaced rows the wheat can be put in rapidly with an ordinary drill without knocking off many ears of corn.

Ways to Harrow Corn

USE the spike-tooth harrow on a newly planted cornfield. I can cover a field with the harrow more rapidly than with any other type of cultivating implement, and when the harrowing is done at the right time it is an effective means of eradicating weeds and pulverizing the surface of the ground.

Weeds which are just germinating, or which have not obtained a well-developed root system, can be easily killed with the harrow. I also use the harrow to advantage in breaking up surface crusts caused by heavy rains. While corn may be safely harrowed before it is up, it is advisable not to harrow from the time the shoots are out of the ground until the plants are about three inches high. I harrow the field at least twice, once five or six days after the corn is planted, and again about ten days later.

Corn planted with a disk furrow opener may be safely harrowed at any stage of its early growth, as the shallow furrows furnish protection to the small plants and prevent their being broken off.

Occasionally I use the harrow on listed corn; usually, however, I prefer the lister-cultivator when corn is planted in listed rows.

Keeping Soil Fertile

By James Black

PERSONS should pay more attention to the maintenance of the organic contents of soils. Organic matter plays an important part in soil fertility. The decaying of this organic matter liberates large quantities of available plant food. The food of nitrifying bacteria makes large quantities of nitrates available for the plants, and the soil becomes porous, absorbing and retaining more water.

Soils which have been cultivated for several years without the addition of organic matter in some form are rapidly becoming deficient in this material. The loss is more rapid in warm, dry regions than in humid sections, and also greater in continuous grain-farming than where a rotation which contains a grass is practiced.

Chemical determinations of soils cultivated to wheat for thirty years show that the cultivated soils have lost 30.5 per cent of their nitrogen and 34.5 per cent of their organic matter. Many other determinations show that the cultivated fields have lost 43.5 per cent of their nitrogen and 51.3 per cent of their organic matter. These are not exceptional cases, but two instances of what is happening where the same crops are grown continuously.

The question which immediately arises is: How are we to increase the organic content of our soils? Many methods have been suggested, but all of them have not proved satisfactory. The use of green-manure crops, application of straw and other crop residue, and application of manure are methods used in various sections of the country.

At various times it has been suggested that green manure, such as cow peas, sweet clover, or rye, be plowed under to increase the organic content of the soil. Such a practice has its place in agriculture, but it is not well adapted to all sections of the country because these plants use large quantities of water in their development.

Rye for Humus

By R. E. Rogers

AFTER the clovers fail it is seldom that farmers try to get a catch crop of any sort to keep the soil—if it be sandy at all—from blowing or washing.

Of course the clovers are the ideal kinds of crops to hold a soil and provide a green crop for turning under. As they are not always sure, we have been trying out a good many different crops for humus, and find that, everything considered, the rye is most satisfactory. Vetch and rape and clover in the corn at the last cultivation are mighty fine cover crops all right, but the chance of getting a stand is often slim.

About half of the time, I should judge, we have failed. Rye seldom fails. In fact, I can't remember when we have ever lost a stand of this.

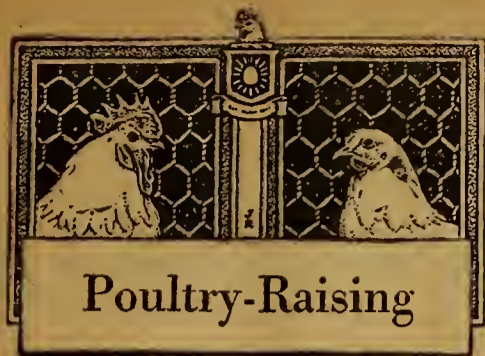
This year I am taking charge of a 50-acre farm that has been cropped till it is in bad shape. No humus, except the little manure made by the renter's stock, has been applied for fifteen years. Yesterday I finished sowing five acres of the corn in the sandiest part of the place to rye. I considered the vetch and rape, but decided to use rye.

I sowed this by hand by walking up and down every other corn row. Two rows can about as well be covered at a trip as one, by swinging the hand down as far as you can without stooping. This year I have used three bushels on the five acres, and think that it is plenty thick enough for this time of the year. Later it would take more to the acre, but now it will have time to stool out and so cover a lot more ground and grow taller than if sown later.

We work it in the soil with a 14-tooth cultivator with an adjustable width, so that the small crooks that are in most corn rows do not bother. This cultivator may be closed up to 15 inches and widened to four feet. The outside two teeth are set about 1½ inches higher than the others, to keep from tearing any corn roots out close to the row.

In the spring the earlier sown rye should be plowed under when it is four or five inches high, or there will be such a growth that it will sometimes cut off the moisture circulation and cause a drying-out of the crop that is planted over it. This won't always happen of course, but a dry early summer and spring and an unrolled field will make the risk pretty high. If it should be impossible to get it plowed under as soon as it should be, then run the mower over it and clip off down to three or four inches.

You can rake the clippings up and feed them; or, unless they are too thick, they may be plowed under. A jointer will be needed to do it well, and, in fact, a jointer is indispensable even for the smaller rye.



Poultry-Raising

Study Chicken Nature

By L. F. Strickler

I FIND chickens are not difficult to herd and drive when I go about it right. I round them up by making a wide circle around them, get them headed where I want them to go, keep the flock together, and move up on them slowly, taking care not to get them fussed up, and they will go where I want them to. It takes, however, a bit of patience and common sense and it is another case where undue haste makes waste.

If I have a flock of small chickens of any age that I want to drive into the brooder or brood coop, I simply stand at the far end of the coop and imitate the cry of a cock when he sees a hawk, or as near it as I can get. This trick gets results at once, as the chicks will hike for the coop.

In case the distance is considerable, some may hunt other cover and lie close, but a low-voiced repetition of the call will usually start them home in a hurry. Don't be too strenuous about it; try to do it as does the cock or the mother hen and you'll be surprised to see how easily you can house your chicks.

We work it on every brood, and it always gets them in under cover when we want them there. Don't overdo it, just for fun, or it will be like the old story of the boy who cried "Wolf, wolf" too often.

There are a lot of other practical stunts that can be worked if one will take the time to study poultry language, the meaning of it, and then imitate the calls.

Charcoal Prevents Trouble

By F. H. Valentine

CHARCOAL is not a food, and may not be a panacea for all poultry ills, but it is a valuable aid to digestion, and a corrective of digestive troubles. It is good for poultry of any age. It may be mixed with the mash, wet or dry, or fed in hoppers so that the birds may help themselves. I find it is especially valuable in fattening or forced feeding. Experiments with fattening fowls and turkeys have shown that those having charcoal made much greater gains than those not receiving it. Finely granulated is the most convenient and desirable form for feeding it. Although supply houses usually charge a pretty good price for it in small quantities, it is comparatively inexpensive when bought by the bag or barrel.

Bones or corn are sometimes charred for poultry, but this is inexpedient except on a small scale.

Blackhead Not "Catching"

By B. F. W. Thorpe

THAT greatest authority on blackhead disease, Dr. P. H. Hadley, whose turkey-raising system and recommendations for feeding turkeys appeared in FARM AND FIRESIDE columns over a year ago, now takes the stand that the disease known as blackhead is not contagious. Dr. Hadley's experiments have convinced him that the para-

sites which cause the trouble are present in all varieties of poultry in limited numbers constantly, and are about as commonly found among birds that show no evidence of the disease as among the birds which show actual infection. He has found that in healthy birds blackhead germs are not numerous, and do not appear to any marked extent in the tissues. But in birds showing indications of the disease the parasites have increased to such an extent that they have invaded and destroyed large areas of tissue in the intestines and liver. In plain language, we may say that before blackhead disease can develop, the turkeys must become weakened and debilitated to a degree which allows the blackhead germs to increase so that the digestive tract and liver can no longer do the work of supplying the necessary nutrients to the affected birds.

Dr. Hadley's experience shows that improper feeding and overfeeding, together with unnatural confinement of the turkeys, are responsible for blackhead disease. Here is the conclusion of a recent statement made by him on this subject:

"The problem is so to feed the poults that the parasites are restricted in their development. In other words, when we know how to feed turkeys successfully, we shall find that the dreaded blackhead disease has taken care of itself.

"This does not mean that the blackhead problem is solved. But it does mean that we know where the weak point in the disease chain is located, and can concentrate our efforts against that point. We must forget about dangers of infection for the time being and study methods of feeding—and breeding for vigor. We must ascertain what constitutes improper feeding. It does not make so much difference what young turkeys are fed as it does how and how much they are fed."

Hope to Do Better in 1917

By C. B. Corbin

IN 1916 I filled one incubator on February 28th with 128 eggs, and another on March 6th with 122 eggs. From the first I got a hatch of 114 chicks, and from the second 95 chicks. Only three of these chicks were lost from disease, but accidents, together with hawks and crows, reduced the 206 chicks to 196 that grew to broiler age. These chicks were fed nothing but dry feed, a dry mash, and chick feed at first, and later whole wheat, cracked corn, and cracked kafir. Besides, they always had plenty of fresh, clean sour milk or boiled sweet milk.

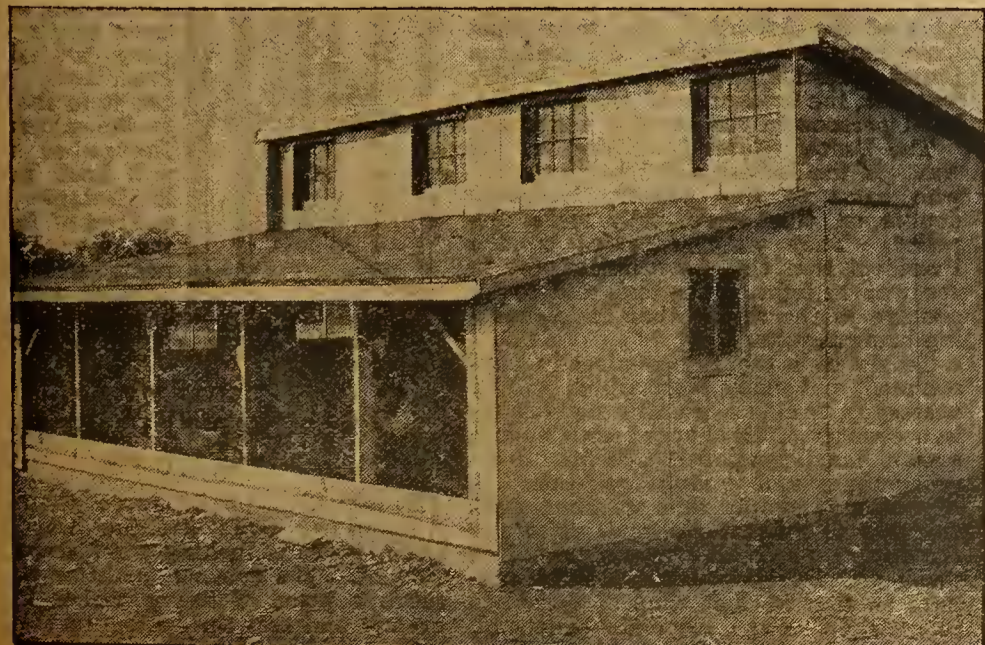
Here is my account of expenses and income:

RECEIPTS	
196 chicks, averaging two pounds each, at 25c a pound.	\$98.00
EXPENDITURES	
21 dozen eggs at 20c per dozen.	\$4.20
Feed for eleven weeks.....	10.00
Total	14.20
Returns from my broiler chick business, not counting expense of work.....	\$83.80

Eggs sold to our local dealers at that time brought only 20 cents a dozen.

MR. C. N. WARNER, a New Jersey poultry raiser of long experience, contends that feeding sour milk to young chicks hastens their maturity at least one week in advance of chicks not fed sour milk. Mr. Warner ships skim milk a considerable distance in order to supply his young poultry.

FEEDING young chicks too soon has killed many a promising youngster. Little and often should be the rule after you do begin.



This half-monitor type of poultry house has its champions. An objection is insufficient sunlight in rear part, unless end windows are used

Broiler Ready for Grid

By Frank W. Orr

THERE is a lot of difference in having a broiler correctly or incorrectly prepared for cooking. For the very best results, the backbone, neck, and keel bone should be removed. The backbone and neck may easily be removed at one time by holding the bird breast down, with the use of a sharp knife cut along each side of the vertebral column. The keel bone can then be removed by first cutting around the outline of the bone from the inside. Next gradually scrape the flesh away, leaving the skin underneath unbroken. When prepared in this way the bird can be laid perfectly flat for broiling, and when done properly there need no incision show where the bones were removed.

My "Table Flock" of Reds

By Jessie L. Van Osdel

THE average housewife is apt to much undervalue what a small flock of chickens—what I call a "table flock"—does for her family. Notice for a moment what my little flock of 28 Rhode Island Red hens and two males, kept on a plot of ground 50 feet square, does for us. Last year they laid 70 dozen of eggs which would have cost us \$38.10 at market prices, and 66 chickens for our table with a value of \$34 at a moderate valuation. This in addition to keeping our



Count your chicken blessings if you would know their full value

flock replaced for the year. The entire expense for feed was \$35.23, leaving a profit balance of \$36.87. This showing, of course, is a very moderate one in egg production, and could be doubled with bred-to-lay stock. Nevertheless, think what it means to have plenty of absolutely fresh eggs throughout the year, and friers and roasters that melt in your mouth always at hand.

EDITOR'S NOTE: Miss Van Osdel won the \$25 prize in FARM AND FIRESIDE picture title contest awarded January 20, 1917.

Three Days in Guardhouse

By Chester D. Emerick

WITH eggs selling high and feed the same, I can't afford to have my hens broody and loafing. I have found that my Rhode Island Red hens kept right on sitting when cooped in the ordinary way and I do not approve of severe methods of overcoming broodiness. I therefore made three wire-covered coops (large enough to hold seven or eight hens) with slatted bottoms and hung the coops under trees or open sheds where the hens get the full benefit of a circulation of air. At night I place all the broodies found on the nest in coop number one, the next night in coop number two, and the third night in coop number three. For the fourth night coop number one is emptied and the performance is steadily repeated. Three days of this confinement, with the air circulating all around the hens with nothing they can get under them to keep warm, and the coops swaying with every movement of the hens—this treatment overcomes the broody instinct in them in most every case in three days.

This plan systematically carried out never allows a broody hen to remain on the nest overnight. I do not feed the broody hens while confined, but supply them with plenty of water and feed the rest of the flock where the "broodies" can see them. This plan keeps them eager to get out and on the move and quickly helps to break up the broodiness.

EDITOR'S NOTE: Why not slip a ring band (hog rings will do) onto the leg of every hen each time she is put into the broody coop, and in this way be able to cull out the persistent "sitters" in the fall. This plan followed with any strain of chickens, year after year, must reduce broodiness.

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NO SLEEP LAST NIGHT?
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Our War Machine

Stupendous Building Task in Which the Nation is Engaged

By JOHN SNURE



WASHINGTON, D. C.,
May 7, 1917.

FIFTY-TWO years ago this spring, Lee surrendered to Grant at Appomattox, and Johnston surrendered to Sherman. Four years of the most terrible civil war of history came to an end. The armed hosts of North and South went back, not to the fort and the barracks, but to the farm and the store and the office and the quiet occupations of everyday life. So quickly and so completely were the trained legions of veterans merged into the unarmed citizenry of the Republic that the world looked on in wonderment.

Since that time, although wars have shaken Europe, the United States has remained in comparative peace. We have had our Indian wars. In 1898 came the Spanish War, and after that the campaigning in the Philippines against the insurrectionary natives. These gave opportunity to prove that the fighting spirit of the fathers still persisted in the sons. But the fate of the nation was never seriously at stake in these clashes.

Now ominous war clouds have again broken over us. Threatening as they have been since the fateful days of July, 1914, when the European struggle opened, there has been general disbelief that the storm would descend on this country. But the storm has come and the nation is at war with the greatest military power of modern times. It is a crisis unequalled by anything in our history since the ordeal of 1861, when existence of the Union was imperiled and the iron of fear and despair sunk into the souls of all but the bravest.

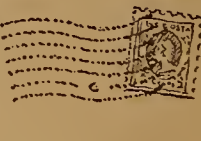
To change from the ways of a half-century of almost unbroken peace into the ways of a war which has been described even in Germany as the most ferocious in history, and to change almost overnight, is the task to which the American people have been called. For the performance of this, President Wilson has asked the best service of every patriotic man and woman, whether that service be military or otherwise.

In other words, being at war with Germany, with her wonderful array of trained battalions, her trained commanders, her powerful navy, her efficient industrial organization, we must have a war machine worthy of a first-class power. And it must be built speedily, without waste of months, or weeks or days, and built out of unseasoned material.

IT WILL be worth while briefly to take a bird's-eye view of the situation, and to think upon the prodigious accomplishment which this country has before it. President Wilson has announced and the public has supported the idea that this nation must go to the rescue of free institutions and democratic government, menaced as they are by the military autocracy of Prussia. The people of Germany and Austria must be saved from their own despots to the end that lasting peace may come to the world. True, the sinking of American ships and the murder of American citizens by German submarines are among the causes of the war. But they are not the primary cause, which, as the President has indicated, is the preservation of the liberties of mankind as against the assaults of the most powerful military régime that has ever existed.

Down at bottom, the war has been declared because of a profound conviction in and out of Congress that the entente allies of Europe do not to a certainty have the man power and the money power to defeat Germany and her allies, and the further profound conviction that if Germany imposes her will on Europe she will then reach out and strike at the United States, either defying the Monroe Doctrine and gaining a foothold in Mexico or some of the Latin-American countries to the south, or directly attacking this slightly protected nation and exacting a tribute such as would make old King Croesus turn over in his grave. Actual proposal by Germany in the now famous Zimmerman note to parcel out America

WASHINGTON, D. C.



Mr. John Smith,
Farmville,
U. S. A.

among herself, Mexico, and Japan did much to waken the Administration and Congress to the danger.

It is sometimes said that the United States is in the war, "with both feet." As a matter of fact, it has many months of painful and arduous preparation ahead before it can get into the war in such fashion. But it cannot do otherwise than lay aside its indifference and enter the struggle to win, to make sure that the Prussian autocracy is crushed.

Modern war is the greatest of problems of organization. It is a staggering problem even for the nations which have for years been preparing for the present holocaust. Much more difficult is it for the nation which has lived so long at peace as almost to have forgotten the trials and sufferings of war.

ONCE there was a certain romance to it. Back in the good old days of knights and men-at-arms, when they went to battle for the love of the game, preparation for a campaign was a simple thing. The bows were strung, the arrows made, the spears and swords and pikes sharpened. The armor was refitted. The horses were shod, and for a few weeks the forges worked overtime.

Even at the breaking out of the Revolution the patriot left his plow in the field, picked up the family rifle and the powder horn, and hurried off to fight the enemy. But that time has long since passed.

Merely to enumerate the foremost things which this country has set out to do is to portray the difficulty of the work on which we are entering.

First of all, Congress has authorized a \$7,000,000,000 bond and revenue bill. Out of this total, \$3,000,000,000 is to be loaned to the allied powers which are fighting Germany. The other \$4,000,000,000 may carry the country through the first year or so of preparation. It may not. Additional taxes of enormous amounts are to be raised.

The magnitude of this financial proposition alone is so great the mind cannot comprehend it. President Vanderlip of the National City Bank of New York is credited with the remark that he could think in millions, but when it came to billions he could not grasp them. Seven billions of dollars in one dollar bills would reach about thirty times around the earth at the equator; yet this vast sum was authorized by Congress without taking as much time as has been taken on many a small appropriation bill in time of peace.

In the Spanish War much was made of an emergency appropriation of \$50,000,000 for the use of the Administration. But this year Congress entrusted President Wilson with an emergency fund of \$100,000,000 merely by hitching an amendment to one of the regular appropriation bills, and doing it with only a few minutes' discussion.

Within the next twelve months, probably less, there will be created an army greater than any army ever seen on the western hemisphere. It will number from 1,500,000 to 2,000,000 men, and will be strong enough to overwhelm the combined armies of the North and South as those armies stood at the climax of the Civil War could they once more be restored.

That the equipment of such an army will draw heavily on the financial, agricultural, and industrial resources of the country so long as it is in existence, and for months before, is apparent.

The navy has been rapidly increased to 150,000 men. Reserve vessels have been placed in commission. New ships have been planned. Ships already contracted for or authorized are being hurried to construction. The Marine

Corps, with its splendid fighting record, has been enlarged to 30,000. A fleet of swift craft for "submarine chasers" is being built and collected. At the same time, under direction of the shipping board, Major General Goethals, builder of the Panama Canal, has been put in charge of construction of 3,000 wooden ships to carry freight across

the ocean and defy the submarine blockade. Five months hence some of these ships will be in commission, perhaps even sooner.

Wars in these days are fought not only by the soldiers in the battle fronts and the men who handle the warships, but by the still more numerous part of the population at home. But the millions at home must not go hungry. They must be fed and clothed also. When populations were smaller, when war was less a conflict of science and machinery and mechanical engineering, the conditions of the home folks didn't so much matter. Now the securing of effective service at home is as vital as brave and intelligent fighting at the front. This means the mobilizing of civilian forces and of industries in a fashion unknown in wars of the past. Through the Council of National Defense the Government is working hard to mobilize the industrial forces of the nation on lines as effective as in England and France and Germany. In this connection the supply of adequate food-stuffs for civilians and the armed forces is of prime importance.

From the date of the declaration of war there has been insistent demand in Congress and through the country that extortionate prices for foodstuffs, as well as other necessities, by wholesalers and retailers, must be prevented by law, that some means must be found to organize a great force of agricultural labor to make it really possible to grow and harvest the greater crops which the farmers are being urged to raise, and that other remedial measures be taken.

Not simply caring for our own food supply, we must keep the allies from going hungry. Expending fabulous sums on our own war preparations, we must back up and aid with billions the debt-burdened powers of France, Russia, Italy, and England. Organizing the greatest army of American history and perfecting the greatest navy we have ever floated, we must build, at a cost of \$300,000,000, a merchant marine numbering thousands of vessels. Making arms, ordnance, munitions, and war material for ourselves, we must not cut off such necessities from the allies.

STIRRING new moral force and enthusiasm in the war of right against autocratic and sinister might, we must help and guide and reinforce the new republic of Russia and give heart to sorely tried Italy. American troops and guns will be used, unless peace comes, to smash the lines of Hindenburg in the west and strengthen the Russians in the east. And American naval craft will have taken over patrol of a large part of the Atlantic. Our long coast lines must be protected, the Panama Canal guarded, the Mexican border watched, the thousands of spies and disloyal persons in the country repressed.

The United States is enlisted for the war. If the British and French envoys who came to this country had any doubts on this score, they were dispelled. They were informed by the President that this Government was in the war to fight to the end, and to cooperate in the things that make fighting bring results.

To do well the things already enumerated, and many more which will be necessary, means a painful shaking up in a country often charged with having grown lazy, wasteful, overfat, overprosperous, and unduly self-satisfied. And it isn't simply that we must fight this war to a successful end. There is the future, the after-the-war period to think of. For this, too, we must prepare so that in that time of merciless competition our interests—financial, commercial, agricultural, industrial, and military—will not suffer.



Farm Building

Repairing Cement Floors

By C. A. Black

A DAIRYMAN who has a cement floor in his stable wishes to know how to patch a broken spot in it about 6x8 inches in dimension, also the cause of the hole. The floor around it is solid.

A hole in a cement floor is generally due to uneven mixing when the floor is laid, or to the presence of clay or other ingredient that has weakened the cement.

To patch the floor so as to make a permanent repair, proceed as follows: With a strong cold chisel chip away the edges and make the hole at least an inch and a half deep. Be sure the walls and bottom of the hole are perfectly solid. Then undercut the edges so the bottom of the hole is slightly larger than the top. Now clean out all chippings and dust. Coat the inside of the hole with a mixture of cement and water about as thick as paint, and fill with a fresh concrete mixture. Smooth the top level with the rest of the floor, and keep the patched spot covered for ten days so traffic will not injure it.

Safety Barn Hook

By Francis G. Brink



THIS is a hook on which you can hang your lantern and not worry about its being knocked off.

Take a three-inch bent-wire hook and with pliers bend it in the shape shown. The space between the end of hook and the shank should be about a quarter of an inch, or far enough apart to allow handle of lantern to drop through.

To use the hook, simply screw it into a beam overhead as far as the threads run. When the lantern is hung on it the handle will at once turn at right angles to the hook and no jar or knock can dislodge it. To remove lantern, simply give the handle a one quarter turn to the left and lift it up.

Oil-Cement Paint

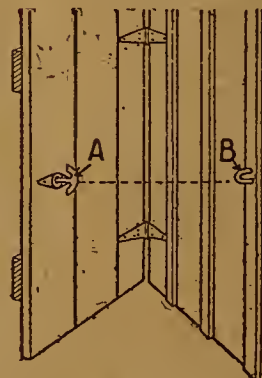
"SEVEN or eight years ago you published a formula for an outside paint containing cement," writes a Georgia reader. "Will you please republish it?"

Certainly; here it is: Take as much paint oil as required for the job and add enough sifted Portland cement to make it the right consistency—but not too thick. To give color, ocher, Brandon red, or any dry color may be added. Stir frequently, and apply it fresh, using an ordinary paint brush. The oil preserves the wood and the cement gives a durable finish.

This is not a high-grade paint, but it is suitable for treating rough work such as wood fences, posts, and sheds.

Blind Hook Holds Door

By T. H. Linthicum



THE best thing I have found for holding a door open is an ordinary window-blind hook. Fasten it to the door in the manner illustrated so it will hook into a large staple. This method of fastening is strong, neat, and inexpensive, and will save your door from being blown off its hinges by strong winds.

from being blown off its hinges by strong winds.

Porch Step of Concrete

By Wm. E. Curley

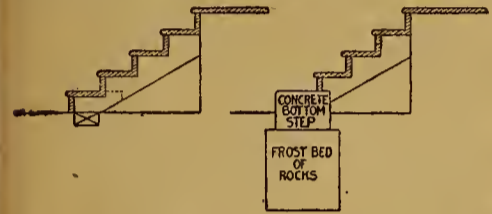
IN HOUSES built more than five years ago little attention was ordinarily given to making porch steps permanent. The common practice was to settle a piece of heavy timber in the ground and rest the bottom of the carriages (timbers which support steps) on this.

Of course in a few years the whole bottom step, including the bottoms of the carriages, decayed and the steps settled down, in time becoming dangerous. To make a permanent repair in such cases, make the bottom step of concrete in the following manner: Prop the flight of steps up into its former position. The steps should be not quite level, but should fall about an eighth of an inch from front to back so water will drain off.

Remove the bottom tread (top of step) and riser (back of step) and cut the carriage along the dotted line shown in the sketch. Now excavate beneath the bottom step to depth below frost line, and fill the excavation with stone or concrete. While concrete makes the best job, stone well settled will make a good foundation for the step.

Now put up a boxed form for the bottom step, using dressed lumber. The top edges of the sides and ends of the form should be smooth, straight, and level, for the top of the step is governed by them. If only a fairly smooth finish on the face and ends of the step is required, the concrete may be poured, the top of step troweled smooth, and the forms removed several days later. If, however, a smooth-troweled finish is desired on face and ends as well as top of step, proceed as follows:

Make the form to fasten together with hooks, so it can be taken apart without jarring the concrete. Mix the concrete, using as little water as possible, so a great deal of ramming is necessary to bring any water to the surface.



Mix up a quantity of sand and cement into a very thick mortar so stiff that when squeezed in the hand it will barely hold together. As the concrete is put in, put a layer of this stiff mortar next to the form, pressing it hard against the form so there will be no air spaces. Use a topping of the same material and trowel to a smooth surface.

After half an hour, unhook the form and remove it, being very careful not to jar the concrete. At this stage a very slight jar will develop a crack and ruin the step. Owing to the very dry mixture, the step will hold its form and not slump. Carefully trowel the front and ends of the step to a smooth surface. A step built as described is a little more trouble than having either a rough step or plastering a rough step with a coat of cement mortar after the rough step is dry. But the result is a step both smooth and truly monolithic, with no joints or seams.

Trouble Kit and Its Use

By Geo. W. Brown

WE FIND during the busy time of the year that our work in the fields is greatly facilitated at times if we take along with us a trouble kit befitting the occasion of our task. We keep in our tool-house workshop several boxes, with handles fitted to them, in which we can carry an assortment of tools to the field, usually upon our low wagon, stoneboat, or otherwise. Thus we quickly mend any little break about the machinery we are operating or harness we are using, often saving us an extensive trip to the house or repair shop, and even a lengthy trip to town.

Our tool house contains spades, shovels, axes, hoes, grub hooks, clevises, pins and bolts, odd nuts, a few pieces of wire, nails, rivets, riveter, iron wedge, hatchet, and a number of other handy articles. Of course we do not attempt to carry a general assortment as named above to all work, but only those befitting our labor for the day. Often while we rest the team at the end of the land we find a staple or two gone or a weak place which can be mended with a strand of wire in the fence, and we get it done while the team rests.

When we notice a weak place in the harness, a rivet or two or a thong of leather strengthens until we can make a permanent repair. We cut some obnoxious weeds with the hoe or spade that would have to be left until we happened that way again. We have yet the first time to carry a trouble kit of some kind to the field during the busy work season that we did not have some occasion to use it during the day.

These kits are made from light boxes with a barrel hoop handle in most cases, some with divided compartments, others without, and we find them one of our handy equipments in the workshop as well as in the fields.

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There is now an extra demand for farm laborers to replace the many young men who have volunteered for service in war. The government is urging farmers to put extra acreage into grain. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Canada, or

M. V. McINNES, 178 Jefferson Avenue, Detroit, Michigan
W. S. NETHERY, Interurban Building, Columbus, Ohio
Canadian Government Agents

If you like to hear of chaps who have climbed up to success through their own hard work, you will like this story

When Ambition Won

The Story of a Pine Plains Farm Boy Who Made Good

By JOHN R. SPEARS

ONE morning in April, while Dr. James Kelly was raking the lawn in front of his house in High Falls,—a mill town at the edge of the Adirondack Mountains,—a boy about fifteen years old stopped at the front gate and looked as if he would like to enter the yard but was afraid to do so.

Seeing this, the doctor turned to a neighbor who was leaning over the line fence and, grinning in a provoking way, said:

"Now, Billy Hanlon, if you don't let the kid alone I'll tell his father to refuse to go hunting rabbits with you any more."

"Huh," replied Hanlon, "much hurt that would do me! If I showed him a dollar bill he'd crawl all over the Pine Plains to get it."

The boy flushed, but made no comment. The doctor frowned, and then invited the boy in.

"Don't mind him, Jefferson. He's daffy anyway," he continued. "I see by your looks you don't need any of my medicine. Is any of the family sick?"

"No, sir," replied the boy; "I would like to buy that lime back there, sir."

He pointed to two barrels of lime standing beside the stable at the rear of the yard.

"Well, what do you know about that?" asked Hanlon with a jeer. "I've heard Pine Plains beggars asking for all sorts of things, but lime—slaked at that—is a new one. What do you think you're going to do with it?"

Without noticing Hanlon's remark the doctor answered cordially:

"All right, Jefferson. You see that pile of ashes just this side? I want them hauled away. If you'll do that you shall have the lime for your trouble. How's that?"

"Thank you, sir. I'll come to-morrow," the boy agreed.

The full name of the boy was Jefferson Briand, and he lived on the Pine Plains, a great tract of sand lying along the north bank of the river. Fifty years ago the plains were covered with a white pine forest. After this was harvested, most of the land was left to grow up to brush, but here and there little patches of the land were occupied by people who raised scant crops of potatoes, beans, and buckwheat, and in season picked berries which they brought to High Falls and sold at from three to five cents a quart. Low as the price was, the berries formed the chief cash crop of these ne'er-do-well people.

On the south of the river the soil was naturally rich and "strong." The farmers lived in great white houses and kept herds of cows in big red barns. Inevitably the unfortunates who lived on the sand—the "Pine Plains beggars," as Hanlon called them—were a joke to those on the rich land, and especially to the people of High Falls. Dr. Kelly was about the only citizen of the town who always treated them respectfully, though why he should do so, when he rarely received pay for attending the sick there, was more than his neighbors could understand.

Having carried away the ashes and the lime, Jeff Briand was seen no more in High Falls until the first week in July, when he stopped his father's old one-horse rig in front of Dr. Kelly's home. Kelly was at work on the lawn as before, and Billy Hanlon was also leaning on the line fence. The boy picked a basket from the wagon and entered the yard without hesitating at the gate.

"Hello, Jefferson, blueberries already?" inquired the doctor.

"No, sir; beets."

He held up a neatly tied bunch of five deep red beets that were fit to make a man's mouth water.

"Well, will you look at them!" exclaimed Hanlon. "Say, boy, where did you 'coon 'em?"

With an air not common among Pine Plains boys, Jeff answered by asking another question:

"Did you miss any from your garden, sir—any like them?"

"Not much he didn't!" exclaimed the doctor heartily. "There's not a garden in High Falls that'll have beets as big as them for two weeks yet. What's the price per bunch?"

"Five cents, sir; but Father said he wished you'd take a couple of bunches without pay. We're a whole lot obliged to you for that lime you gave us."

"All right, Jefferson. I'll take them and thank you kindly. I'll not forget it."

JEFFERSON had forty bunches yet in the wagon, and he sold them quickly, Hanlon being his first cash customer. The fact that a Pine Plains man had brought beets to town was alone enough to cause unusual comment, but that he should have been two weeks ahead of all others was astonishing.

"Where did he learn how?" was the question asked by everybody, but to this Jefferson made no reply. That he usually flushed with embarrassment when he heard the question was noted by all, and this embar-

assment became much worse after the local newspaper, the "Clarion," published an item about him wherein the ragged harness on the "crow-bait" horse and the decrepit wagon were contrasted with the "superb vegetables offered for sale."

When winter came on, and the first fall of snow, the Briand family once more received attention from the local editor. A party of rabbit hunters who went to the Briand home to secure the help of the man and his two dogs found him and Jefferson in the old shack of a barn pounding a great heap of limestone into powder. Billy Hanlon, who was in the lead, gave a whoop.

"I've always wondered what the Pine Plains folks lived on in winter," he cried, "but now you see. It's limestone bread, with a rabbit on top now and then. Come on with us," he continued, addressing Briand, "and bring your dogs. We'll give you enough money to vary your grub with coffee and tea, eh? Sure thing!"

"Jeff'll go, if you like," answered Briand, but he himself refused to go even when they offered to hire him and the boy at good pay. Hanlon's gibe about eating limestone having been reported to the editor, the paper told about the experience of the hunters, and ended with this rhyme, likely to be repeated whenever a Plains farmer made his appearance:



He held up a bunch of deep red beets that were fit to make a man's mouth water

"The Pine Plains men—the Pine Plains men,
They live on air and hope till when
They get so hungry that eat they must,
When bread they make of limestone dust."

When the next vegetable-selling season came on, however, and Jeff appeared on the streets of High Falls day after day with enough truck of superior quality to supply all who would buy, and sometimes with a surplus, the gardeners of the town, and the farmers as well, began to talk about the boy's work without joking.

According to the accounts of Pine Plains folks who, in coming to town, passed the Briand place, the Briands had hauled a dozen loads of limestone from the banks of Black River, where it abounded, and, after pulverizing it as well as possible, had spread the dust on a "heap of ferns as big as a barn," gathered the previous summer from uncultivated parts of the plains. The pile was forked over and mixed in the spring, after which it was spread "almost thick enough to cover the ground out of sight" on a three-acre field, and plowed under. It was on this field that the Briands grew their truck.

When Roderick Simms, master of the local grange, heard this he said:

"It's no wonder they raise good truck. Ferns, especially brakes, rotted with limestone dust mixed in, makes first-class fertilizer—nothing better for sandy soils. The wonder to me is, as I have said all along, where or how old Briand learned how. I know him—had him often help me in haying, and while he's a good worker, he's as ignorant as the rest of the Pine Plains tribe. He can't read or write—can't even sign his name, and yet his boy comes to town with truck two weeks ahead of that on the good limestone soil this side of the river. He's making money too, hand

over fist. Where did he learn how? That's what I want to know."

These questions were asked by increasing numbers of people as the season passed, and the quantity and quality of the Briand truck were discussed with increased wonder. In a September issue of the village newspaper one item read as follows:

"We have to thank young Jefferson Briand for a basket of the finest tomatoes we have seen this year—large, red, smooth, and delicious. Good boy, Jefferson! You've beat the whole town with your truck. And it is a Pine Plains farm at that. Where did you learn how?"

THE general interest thus voiced reached a climax the following winter, which was simply astounding to the people of the whole valley. For along in January the local paper contained a notice saying that the Farmers' Institute would be held, as usual, at Grange Hall. At the end of the notice appeared this sentence:

"We are requested to state that Jefferson Briand will tell the audience how he transformed a seemingly worthless piece of Pine Plains sand into a most profitable market garden."

The people of High Falls had always been interested in the Farmers' Institute, but now more than ever. Accordingly the hall was crowded at both meetings, and when at the night meeting the workers mounted to the little stage, and Jefferson was seen with them, there was a ripple of applause in which Dr. Kelly led.

Then not a few of the townspeople remarked to one another that the boy was "dressed as well as anybody and didn't seem to be scared much either."

Nevertheless, when Jefferson realized that he was the center of interest a feeling of embarrassment almost overwhelmed him. In fact, he was just reaching a point where he was ready to leave the stage and the hall, when he happened to see Hanlon sitting in the front row of seats with a mocking grin on his face. Then the boy remembered Hanlon's question about the beets,— "Where did you 'coon 'em?"—and a flush of indignation replaced his embarrassment. Then the leader of the institute, after a little introductory speech, said:

"The boy will now tell his instructive story," whereupon Jefferson stood up and in a clear, if boyish, voice said:

"If I had known that book learning is no disgrace to a farmer, I should have told everybody about our work on the Plains as fast as we did it. But I didn't know it. We always heard real farmers laughing about 'book farmers,' and we had always been jeered at so much that we couldn't stand it to have anybody make fun of us for what we were doing on the farm.

"Father, you know, owns eighty-acres on the Plains; but all we ever could get out of it was enough hay and oats and potatoes and white beans to keep the horse and cow and ourselves. We didn't seem to mind it much. We'd always lived that way, and didn't care for anything better, until one morning, three years ago last fall. When I went out to the bars in front of the house that morning I found a bundle lying on the ground, and on the outside was written, 'Findings is keepings.'

"It was a heavy sort of a bundle, and when I opened it I found three books which told how to run all kinds of farms.

"I looked through them leaf by leaf to see if we couldn't find any name of the owner, but all I could see was a place on the inside of each cover where there had been a name which someone had rubbed out. So we made up our minds that somebody had made us a present.

"I was going to put the books on the clock shelf, but Father said the neighbors would see them and laugh at us for learning how to run a farm by reading books. So I hid them under my bed. But I read them just the same, especially on stormy days when no one was likely to come. I always did want something to read on stormy days anyhow. After I'd read them all through, I read them through again, and this time I read parts of them aloud to Father and Mother.

"We didn't seem to understand much that was in the books, but there was one chapter telling about lime and limestone on sandy land like ours.

"We might try that once on the sly," said Father one day, when I was reading it aloud. "I saw two barrels of lime all falling down in Doc Kelly's yard yesterday, and he'll sell it cheap, most likely. You go see him about it to-morrow, but don't you tell anybody what we want it for, and get everybody laughing at us."

"So I did as he told me. We sowed the lime on the garden, and then planted half a pound of beet seed on the limed land, with the ends of the rows running beyond the lime. We used the beets because the book said that was the crop to raise when we wanted to

learn whether lime would do any good. Well, where the lime was used the beets were fine, and where it was not used they were good for nothing. That gave us courage to keep right on doing as the books said.

"The books said sand was better for vegetables than strong land if we'd use lime to sweeten it, and then plowed in any kind of weeds to rot and make it black. So we cut the ferns. All we have done was to follow what the books said. We're just book farmers. I never would have told you but for Mr. Simms and the gentlemen of the Institute.

"They came over to our farm and asked me to come here and tell you all about it. They happened to see the books because I'd forgotten to hide them. I expected them to laugh at us, but they said that the only farmers who ought to be ashamed were those who don't read books. 'Experience is a dear teacher, and they are fools who will learn of no other' is what one gentleman said. So I came. And that's all I have to tell. But I wish I could learn who it was that left those books by our front bars. He not only taught us how to do our work, but there are other Pine Plains folks who are doing what we did, and they won't have to depend on picking berries any longer for money to buy things."

THE applause that followed this little speech was exceedingly cordial, and then, as it died out, the people turned to talk about the story of the books. Observing this, the director of the Institute picked up one of the books which were lying on a table, and drawing a magnifying glass from his pocket he said:

"I think you are all as much interested as I was in learning who the unknown philanthropist was. It is a common thing for the well-to-do to give money to the poor, but here was one who realized that to give knowledge was infinitely better. The name of the original owner of these three volumes has been carefully erased, but with the aid of this glass I have been able to see the indentations made by the pencil with which the name was written. I know the gentleman well enough to say that he will be greatly vexed to have me reveal his identity, but I must say, nevertheless, that as I read it the name once written in the books was James Kelly, M. D. When the Pine Plains are all reclaimed, as they are now sure to be, you who live in High Falls will have him to thank for seeing how it might be done, and Jefferson Briand for doing the preliminary work under the most discouraging conditions that I have ever seen surrounding a farm developer."

The Cowbird

By H. W. Weisgerber

COWBIRD! What a name to fasten upon any bird! Yet it is quite appropriate, for the name fits the bird, although he scarcely is entitled to one so good. Its only direct service is to the cattle of the field, for no doubt it does relieve them of a few pestersome flies by perching on the backs of the cattle or by walking on the ground and eating what insects it can catch.

That they are the outcasts among the birds there can be no doubt. The female



builds no nest, but stealthily deposits her eggs in other, smaller birds' nests, to be hatched by the foster parent and taken care of by the one who has her own brood crowded out of the nest by the rapidly growing cowbird.

It is nothing unusual to see one female with four or five males about her, and there are very few cases where there are more females than males in the small flocks. The males will be heard uttering a wiry squeak. Then, suddenly, all will fly to another tree.

The males, with their glossy, greenish backs and brown head, are fairly good-looking—for blackbirds. The female is gray. They are always to be found in small flocks, for rarely is a single individual to be found.

Letters from a June Bride

Betty Tells About Her Visitors



DEAREST SISTER: Country people are never able to pack up and go visiting in the same easy manner in which their city friends seem to do it. In the city the men merely close their roll-top desks, and their wives merely cut off the water and pull down the parlor blinds, and then they are off—at least that is the way it seems to us who look on with envying eyes. Country people have to plan things so long in advance, and then just when you think you are ready the hand who promised to come to do the chores changes his mind, and the whole plan "goes up in smoke," as Billy says. That's why we decided, from the very beginning, to get our needed relaxation by having people come to see us instead.

With the exception of Margretta, all of our visitors this year have made most charming guests, whose sojourns with us have marked the red-letter days of the year. We couldn't help being disappointed with Margretta, because we had been counting on her visit for so long and yet, try as we would, we could neither get her to talk to us about her life in the city nor did she seem the least interested in the joys which the country offered.

I had out all my prettiest china the night she came, and remembered feeling a glow of pride when I set everything in its place on the table—a slice from one of our oldest hams, rich whole milk, honey as golden as the butter—everything with as distinct a country flavor as I could make it. But somehow the supper wasn't a success. I was conscious of feeling apologetic because everything had to be put on the table at once. The lamp in the center of the table cast a harsh light that I had never noticed before and, though I would ordinarily never have thought of mentioning it, I found myself explaining about the parsley which Mr. Ream had neglected to send with the order.

I had saved over the churning an extra day on purpose, thinking she would be interested to find that butter didn't grow in pound "pats" after all, as so many city people must think; but before I had a chance to ask, she told us that she should love nothing better than to spend her morning in bed every day if we would promise not to save her any breakfast except a cup of coffee and a bite of toast.

Every day about ten o'clock, down she would come, dressed as if she were ready to start out for the Ladies' Aid meeting. I suggested a walk in the orchard. I invited her to gather the eggs in the hen house. I told her of the charms of the old-fashioned garden. But to all of these efforts at entertainment her only reply was: "Now, my dear, you mustn't worry about me. I'm perfectly happy right here, and I sha'n't get the least bit bored with all these magazines to read." As if magazines could ever take the place of all the early spring wonders laid out before her eyes!

MARY'S visit, on the other hand, was a great success. She did try so hard to live down her French heels and unmistakably city clothes, both of which had caused us to cast skeptical glances at one another when she stepped out of the buggy and put her dainty little foot right into our sticky red clay mud.

Every morning, while we were busy with the early before-breakfast chores, we could hear her overhead, practicing scales and singing snatches of song which told us she was up, so that we didn't have to tiptoe about or try to muffle the separator or suppress Ed's blustering "Good morning" when he came in to get orders for the day. It was such a happy way to begin the day. We couldn't help getting into the spirit of it ourselves, and gradually we found ourselves trying to imitate the concert overhead. She was always down when the breakfast was put on the table, as fresh and sunshiny as an early spring morning.

She always insisted upon having a hand at the dishwashing, covering her dainty dresses with one of my big all-over aprons and trying so hard to get all the joy possible from our simple way of living. Then she wanted some special job to do every day regularly,

so I gave her the brushing up of the living-room and dining-room, in which she took the greatest pride, always seeing that there were fresh flowers in the vases and

an artistic bouquet for the dining-room table.

Mary had never visited in the country before and didn't know enough about it to ask intelligent questions—poor dear!—but she did try so hard to learn. And then she would tell us all about her wonderful life in New York, where she was studying singing. She had struggled hard, had had many hardships to overcome, but at last she was beginning to get ahead and was looking forward with renewed energy and zeal. Without realizing it, she had opened to us a vision of a new world beyond the confines of our two hundred acres, a vision no less essential to our well-being even though hogs and Guernsey cows had no part in it.

WHEN Mrs. Walton came to visit us, she dropped all her city cares, got out a pair of Grandma Stone's flat-heeled shoes, an old discarded steamer hat, and came down "ready for business," as she said. Ready for business to her meant getting up while the dew was still glistening on the grass, taking a brisk walk before breakfast, and coming back, face glowing, with the announcement that it was "lovelier than fairyland," and that we would be losing the opportunity of our lives if we didn't drop everything that very minute and come out to see the new sun peeping over the pine trees in the east.

Then she would go out again when breakfast was over, bringing back great armfuls of roses which she spent the rest of the morning arranging in every available receptacle.

She could scarcely wait for Sunday to come so we could take her on the promised walk to the woods. Nothing escaped her attention along the way. There were a thousand questions to be answered. What we expected to plant in this field next year? Whether we used fertilizers? How many hogs we kept? Why we liked Buff Leghorn chickens best?—etc. Before we knew it she had drawn us out so that we were telling her all the things of the most vital interest in our lives. And then at night there were the stimulating political arguments that made you realize that her knowledge of the affairs of the outside world was as keen and appreciative as her love of the country.

Father is much the same kind of a visitor. When he comes to the farm he loves nothing better than to "rig" himself up in the old khaki suit he left here for that very purpose, and cannot wait to get out where things are going on. It matters not whether the hands are in the midst of a special task such as haying, shredding fodder, apple-picking, or merely engaged in odd jobs, he is ready to "pitch in," and work at such a white-heat tension that even Ed, whose special brag is that he can do more in a day than any man "in this here country," is forced to the admission that "That man do beat anything I ever see when he gets started."

When there is nothing else to do he will start out to the young peach orchard, equipped with pruning shears and a wide-brimmed hat. There he will stay contentedly until the bell for dinner sounds, cutting a branch here, snipping a twig there, and stopping every now and then just long enough to take a long breath and to say to the world in general, "Oh, isn't this a magnificent vista?" "Magnificent vista" is Father's own particular phrase. When he drives along over the winding mountain paths it is always a magnificent vista that he sees stretching out before him through the interlacing trees.

When such people as these come to see us, little housekeeping worries lose their weight. Even if the biscuits do get a little overdone, as they did once when we went out to enjoy one of Father's "magnificent vistas," there is no need for an apology. We serve our simple country fare with the assurance that the luxury of porterhouse steak and sweetbreads is forgotten in the glory of fresh buttermilk and newly-laid eggs.

Betty

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AGENTS—Big Summer Seller.

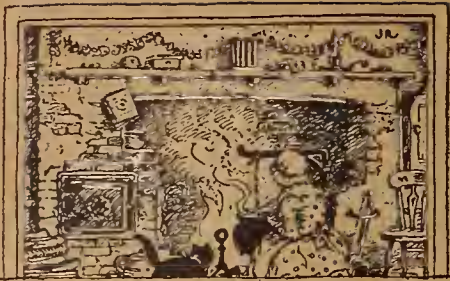
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Housewife's Club

Brightening Buttons

By Monica Kelly

WHEN making over suits and dresses, don't neglect to brighten up the old buttons you are using on the new garment.

Pearl buttons which have become dull and old-looking may be brightened by soaking them in olive oil or a good quality of machine oil. When you take them out, rub them hard with powdered pumice, talcum powder, or a good nail polish. They will look like new.

The steel buttons which are so popular may be cleaned with a toothbrush and suds. If they are rusty, use a cleaning powder. Dry thoroughly and polish. Cut jet buttons often look dingy from the dust which has collected in the design. Clean them by brushing vigorously with a soft brush.

A Compact Spice Holder

By A. E. Swoyer

THE family spices are usually purchased in little tin boxes, each holding one-fourth pound, and then the boxes are set away upon a shelf in the pantry or the kitchen along with a thousand and one other things, so that a search for the particular spice desired often means a destruction in the order of that shelf comparable only to the results of a small cyclone. Naturally, the spices should be kept together and separated from all other cooking necessities; but if the orderly housewife hopes to do this by the use of one of the usual spice holders filled with little jars labeled "Cinnamon," "Nutmeg," and "Clove," she is doomed to disappointment, for although such a holder serves that part of the purpose, spices stored in the loosely covered jars soon lose their strength and flavor.

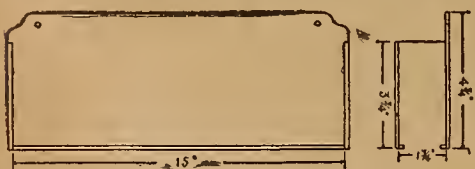
The device illustrated overcomes this difficulty by permitting such goods to be stored in the tight cans in which they come, thus keeping them always fresh and pure. It keeps them all together, and as it may be suspended within easy reach of kitchen table or stove, they are always convenient. Best of all, such a holder can be made by anyone in less than half an hour and out of materials to be found in any woodshed.

How to Make It

In the design shown, all wood is one-fourth inch thick, such as may readily be obtained from old dry-goods boxes or those in which starch is usually sold; but the dimensions given are inside measurements, and may be followed even if the wood is a trifle thicker or thinner than one-fourth inch.

The first step, of course, is to plane the wood smooth; the lines to be followed may then be more easily laid out and a neater job secured. The back of this cabinet is $4\frac{1}{4}$ inches wide and $15\frac{1}{2}$ inches long; the front is the same in length but one inch narrower, while the two sides are each $1\frac{3}{4} \times 3\frac{3}{4}$ inches. You will also need two strips one-fourth inch square and 15 inches long; one of these strips is to be nailed to the bottom of the back, and the other to the bottom of the front. The cabinet is put together with fine wire nails, countersunk, and finished with wood dye and varnish in the usual manner.

If the directions and dimensions are followed you will have a box just wide and deep enough to hold the boxes easily. As each one is about $2\frac{1}{2}$ inches wide and the cabinet as given is 15



inches long inside, there is just sufficient room for the six spices usually kept on hand. If you wish more room, increase the length of the box by $2\frac{1}{2}$ inches for every variety you expect to add.

The holder is to be screwed to the kitchen wall; the little boxes when dropped into it will come to rest upon the cleats, and it is therefore an easy matter to remove any one desired by

simply pushing it up from beneath with the finger.

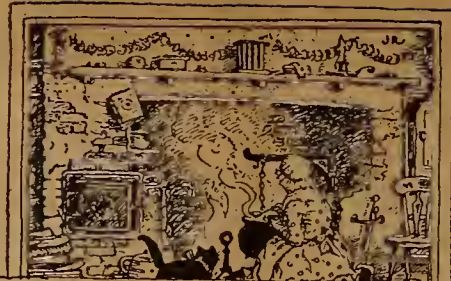
To attain the utmost convenience, though, every compartment should be labeled so that the nature of its contents may be determined without removing the particular box. This may be done in a variety of ways. The simplest is to cut a series of openings in the front board with chisel and mallet in such a position that the labels on the boxes inside may be seen; or, if you happen to have a pyrography outfit in the house, the slots may be omitted and the distinguishing marks burned on the wood itself. Either of these methods should be used before the wood is stained and varnished. Another way is to paste paper labels on the wood after it is finished, and protect them by means of a transparent varnish made by dissolving celluloid in amyl acetate (banana oil) and wood alcohol. Tell the druggist what you want and he will supply you in a moment at a cost of, say, 10 cents.

If you are fond of apple sauce with



nutmeg grated on the top, and don't want the "Department of the Interior" to put cinnamon on instead, because she can't find the nutmeg, hurry up and make this spice holder. You will find the few minutes required to be time well spent.

Little devices like this help to conserve the time, strength, and temper of the goodwife, and it is interesting to plan and construct them when one has the leisure to do it.



Cookery

Appetizing Asparagus

By Charlotte Griggs Turner

ASPARAGUS needs to be thoroughly cooked, but both the flavor and the appearance are ruined by overcooking. To secure the best results, put it on in boiling water and keep the water boiling rapidly until the asparagus is tender. Draw the cover to one side of the stewpan while the asparagus is cooking, and it will have a better flavor. There are a number of very different and most appetizing ways to prepare this vegetable.

STEWED ASPARAGUS—Take stalks of equal lengths, cut off any hard part, and scrape the lower end of the stalks. Wash well and tie in small bunches. Put the bunches into a deep stewpan, with the cut ends resting on the bottom of the pan. Pour in enough boiling water to come up to the tender heads, but do not cover them. Add a teaspoonful of salt for each quart of water, and cook until the asparagus is tender. It will take from fifteen to thirty minutes, depending upon the tenderness and freshness of the stalks. Season with butter, pepper, and a little salt. Put on

inside of the rolls and set them open in the oven to crisp. Heat two cupfuls of milk and pour it slowly upon four well-beaten eggs. Return the mixture to the fire and cook it until it thickens, stirring constantly. Then add one teaspoonful of butter creamed with a little flour.

Cut two bunches of asparagus into small pieces and boil until tender. Drain the asparagus, season it with pepper, salt, and butter and stir it into the egg mixture. Fill the rolls, set on the tops as covers, and serve hot.

BAKED ASPARAGUS WITH EGGS—Cut about two dozen stalks of asparagus into inch lengths and boil until tender. Drain the asparagus, pour it into a buttered baking dish, and season well with salt and pepper. Beat four eggs just enough to break the yolks, add a tablespoonful of melted butter, and season with salt and pepper. Pour the eggs over the asparagus. Bake eight minutes in a quick oven and serve immediately.

ASPARAGUS SCRAMBLE—Beat four eggs slightly, season with pepper and salt, and turn into a hot buttered frying pan. Stir the eggs a moment or two until they are well scrambled but still soft. Stir into the eggs one cupful of creamed asparagus tips and serve hot with crisp cheese wafers.

Boning Hams

HAVE you ever noticed how hard a ham is to carve with the bone in it, how the slices are spoiled, and how much meat is really wasted?

That can easily be avoided if you are sure to cook the joint thoroughly and while it is hot take the bones out. It is not so hard as it sounds. There is only one bone with which you will have any trouble. Locate that bone with a fork from the under side, cut a slash through the meat until the bone is exposed, and with a little dexterous working of fork and knife the bone is out. I treat my shoulders in the same way, and my friends can't tell whether they are eating shoulder or ham, the slices cut so well and the meat tastes so good. After once serving boned hams and shoulders, you will never serve them any other way.

Luncheon Potatoes

PUT through the food chopper the ends of cold steak, or any mixture of cold meats. Into a buttered baking dish slice raw potatoes (cold boiled will do) and sprinkle thickly with the chopped meat. Over this slice a layer of raw tomatoes, or canned ones drained of most of their liquor; dot with butter and season with pepper and salt. Alternate the layers until the dish is full; sprinkle the top with a layer of cracker crumbs moistened with melted butter, and bake until done.

This makes a satisfactory luncheon dish, being both tasty and attractive in appearance.

Everyday Helps

TO RENEW BLACK KID—To restore the color of your black kid shoes or gloves, use a good black ink mixed with the white of an egg. C. O. B., Ohio.

A CHEESE HINT—Spread a thin film of butter over cheese that is to be put away and it will not dry or crack. L. M. T., New York.

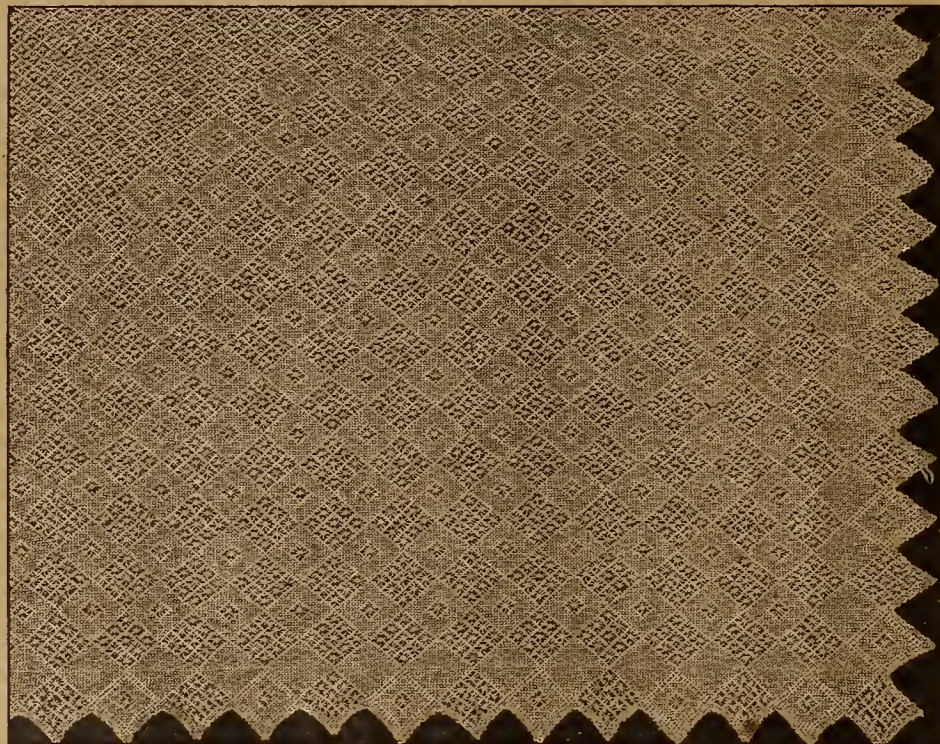
WHEN SEALING JELLY, melt paraffin in an old coffee pot. It is a most satisfactory way to pour the wax over the jelly when sealing it. No drops will be spilled upon the table or tray. E. J. P., Florida.

SIMPLIFIED SHIRING—Lengthen the stitch on your sewing machine to its fullest extent, and stitch the part to be shirred. Adjust your gathers by pulling the lower thread, and your gathers will be perfectly even. L. G. C., Massachusetts.

TO REMOVE STAINS—If the hands should get stained in handling mulberries, blackberries, or grapes, before washing them take half a lemon and rub them, or if you live in the country and have rhubarb growing, take a stalk of it and peel and bruise. Then rub the hands with it and you will be surprised at the result. L. P. I., Kansas.

TO KILL MOTHS—For moths around the edge of a carpet, a hot iron is an excellent and always available exterminator. Dampen the edge of the carpet and iron with the hot iron. If of velvet or Brussels, hold the iron close to the carpet, but do not press it down. The hot steam will kill all moths and without the least injury to the carpet. L. S. O., Illinois.

Diamond Lace Bedspread



ONE quarter of a large bedspread in diamond design is shown in the illustration. The spread is made in two pieces only—the body, and the lace border which is sewed on. Directions for making will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

When Finishing Doilies

By Fern Lawrence

WHEN making linen doilies and centerpieces, cut the linen the required size, allowing for a narrow hem. Baste the hem in and stitch with the sewing machine. Then remove the thread from the machine needle, place the doily under the needle, just off of the hem, and stitch around. Take a crochet hook and draw the crochet thread through one of the holes made by the sewing-machine needle, single crochet (do not throw the thread over the needle) all around the doily, going through the perforations made by the machine needle. Do this as evenly as possible. You will find that this is much easier than without the perforations. Now you are ready to sew on the crocheted lace.

Sometime, instead of single-crocheting around the edge of the linen center for a doily, before sewing the crocheted lace or tatting on, try buttonhole-stitching around with a common sewing needle. Either embroidery floss or crochet thread may be used. If, however, the hem is basted in first and stitched on the machine before buttonholing, it will be much firmer to work on. Then, after buttonholing, sew the lace on with fine thread, so that it neither draws nor gathers.

a platter a sufficient number of thin slices of buttered toast and arrange the asparagus upon them. A part of the water in which the asparagus was cooked may be poured over the toast if desired, or it may all be set aside to use in vegetable soup.

CREAMED ASPARAGUS—Cut all the tender part of the asparagus stalks into short pieces. Pour in enough boiling water to cover them, and cook about fifteen minutes, or until tender. Add enough hot milk to cover the asparagus, season with salt and pepper and thicken with flour that has been creamed with butter. Serve in sauce dishes.

SCALLOPED ASPARAGUS—Pour into a buttered baking dish two bunches of asparagus that have been cut in small pieces and boiled until tender. Season with salt and pepper. Add enough milk to the water in which the asparagus was cooked to make a pint. When this liquid is hot, thicken it with one tablespoonful of butter rubbed to a cream with one and one-half tablespoonfuls of flour. Pour this white sauce over the asparagus, cover with buttered bread crumbs, and bake for thirty minutes. A little grated cheese sprinkled over the top improves the flavor.

ASPARAGUS IN AMBUSH—Cut the tops from eight or nine rolls. Scrape out the

Margaret's Country

By Mary Melvin
Part II

IT WAS four o'clock in the afternoon and still the confession was deferred. Every bundle in the clothes-room had been taken down again from its shelf—all the aprons, dresses, underwear, all the sheets and pillow-cases, and still these twenty-three gowns of dormitory three had not been found.

Margaret was overwhelmed with grief. She wondered a little about her punishment for her carelessness. She might even be sent to the country!

Suddenly she grew aware that Mrs. Keely was standing at her side.

"Margaret, don't you want to go with a lady who wants to take you to the country?" she heard Mrs. Keely ask kindly. "Well, you're excused," she added, without waiting for an answer. "Go, get ready; the lady is waiting to take you now."

All around her Margaret heard the sympathetic murmurs of the other girls. Mrs. Keely thought these little sounds were of congratulation, but Margaret understood. She was sure that Miss Cook had told Mrs. Keely about the gowns before she had a chance to be honorable and tell on herself, and the worst had come—the country as her punishment.

Thirty minutes later she was standing in the reception-room beside the lady.

"Oh, here you are," she said, taking the child by the hand. "How do you do, dear?"

"Thank you, ma'am," stammered Margaret, very much ashamed of herself.

"NOW, Margaret, you must be very obedient to Mrs. Gillespie," said Mrs. Keely kindly.

"Yes, Mrs. Keely," said the little girl, without daring to look up.

"Good-by, dear," called Mrs. Keely from the door.

"Good-by, Mrs. Keely," answered the woe-begone child as she climbed into the three-seated rig to drive off with her "lady." And thus Margaret Glenn left forever the Belle Wait Orphanage for Girls.

It was four or five days after Margaret's departure that Mrs. Keely received a letter which she had to reread several times and then call in Miss Cook to explain before she could understand it entirely.

"DEAR MRS. KEELY: I want to apologize about those nightgowns that belonged in do'mitory 3. I am very, very sorry I lost them. Please ask Miss Cook to excuse me. And I think it was awful kind of you not to punish me any harder than to send me to the country. Tell Alice and Sarah that there is no mules what kicks or cows what runs here. Our cow just gives only milk and butter and chews all the time. And there is no more than one house here. And the turkey gobbler he ain't gobbled me yet and Mrs. Gillespie says he won't either. She is a kind lady and we drive to church in our carriage. She tells me how to spell all the words I don't know. I guess this ain't the same country Alice went to. There are flowers and a fountain that runs water all the time like a spicket turned on. And Mr. Gillespie says it ain't no waste.

"I am awful sorry about the nightgowns and I remain your

"Grateful and respectable scholar,
"MARGARET GLENN."

"P. S.—I wish I could tell about my country to all the little orphans. They don't know anything about this one. Oh, yes! there is potatoes coming up from our ground and apples on our trees."

MISS COOK was a busy, wiry little body who was really much kinder than her sharp voice and quick jerky manner indicated.

"Oh," she said to Mrs. Keely in explanation, "those gowns were found, Mrs. Keely, in the teachers' laundry the very night Margaret Glenn left here. I clean forgot that that poor child would be worrying about them. But I'm glad she's so well placed. Do you s'pose they're wealthy?"

Just a little later when the house-keeper came in to go over her table accounts with Mrs. Keely, she was surprised to learn that they could not receive attention just at that time.

"No, Miss Weissbrod," said the head of Belle Wait positively but with a slight quiver in her voice, "I cannot verify those accounts now. This is the children's play hour, and while they are all together I am going up to tell them about Margaret Glenn's country."

Answer to Puzzle

Johnnie was 10 and 16/21 years of age, and his sister three times as old.

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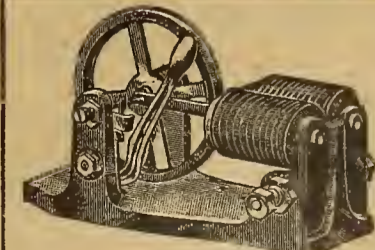
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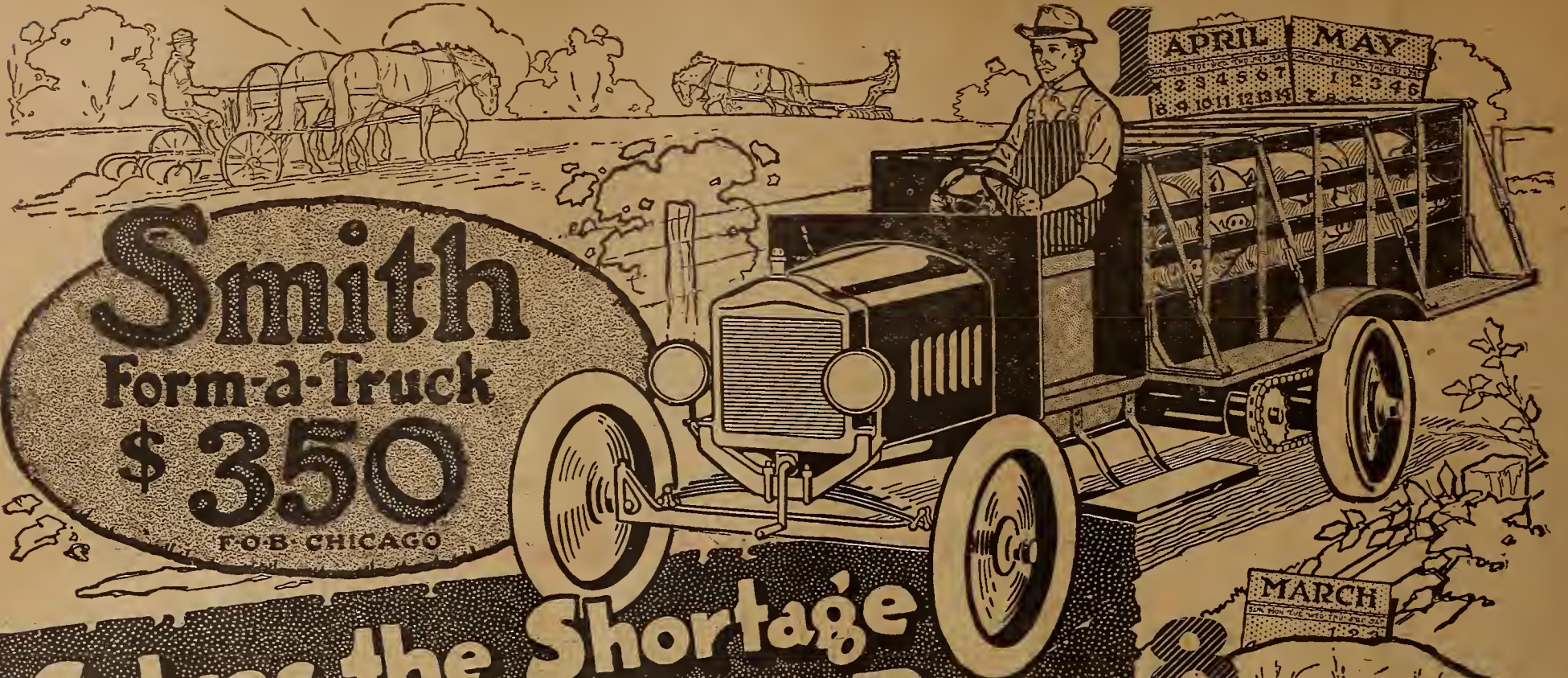
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1	2	3	=>
3	2	2	=>
3	1	1	=>
?	?	?	

Can you arrange the numbers in these squares so that every column will equal 6? If you can, I will send you a valuable prize. I am anxious to have more bright boys and girls join my Prize Club. I want to be sure that every member is bright. The only way I could think of to find who was bright and who was not bright was to see who could solve the puzzle.

Send me your answer to the puzzle. I will send you a valuable prize by return mail. I will also make you a member of my Prize Club. I will show you how you can get dozens and dozens of prizes for 10 or 15 minutes' work. I will tell you just exactly what to do to earn as many prizes as you want. Send me your answer to the puzzle. If it is correct I will send you a prize. Enclose 4 cents in stamps to cover the cost of mailing and packing the prize. Address

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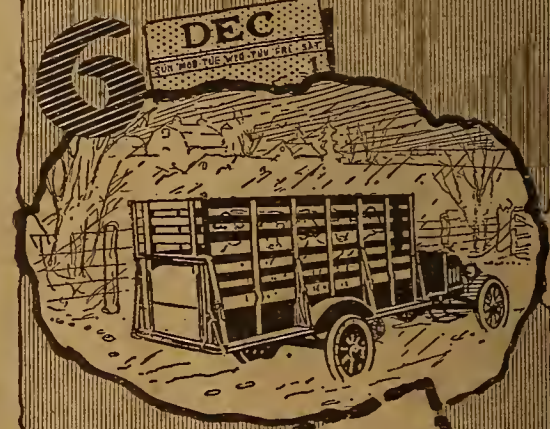
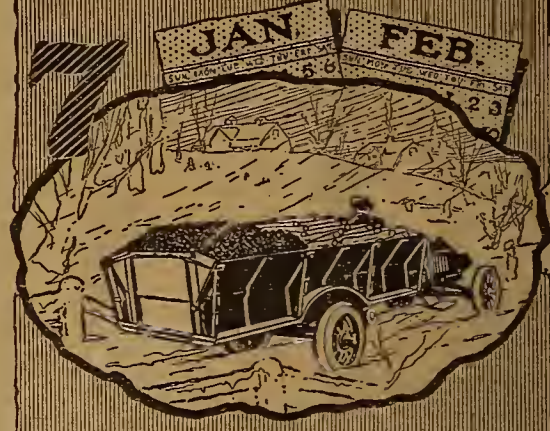
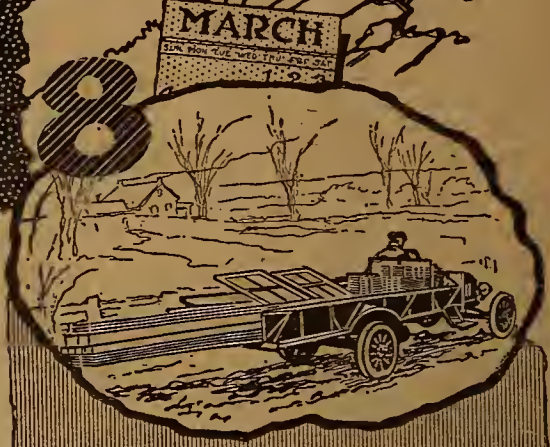
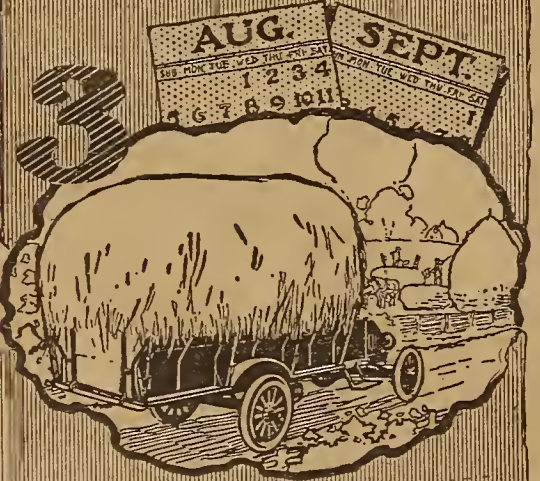
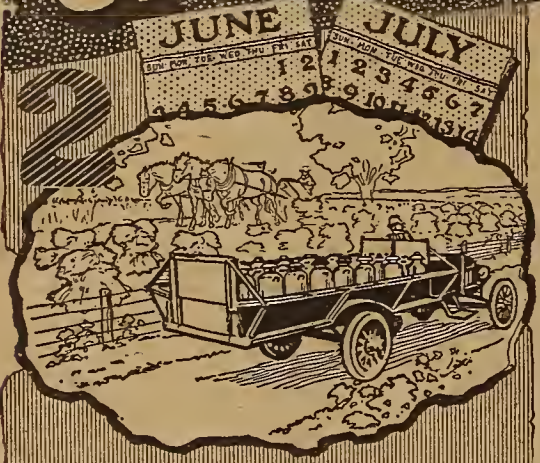
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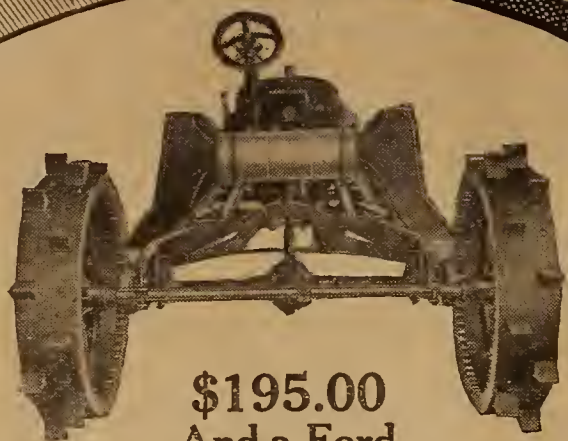
Western Edition



PHOTOGRAPH BY JOHN KABEL

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STAUDE Mak-a-Tractor. Ready to hook on and pull any load that a 4-horse team can handle.



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This great team has no more pulling power than the STAUDE.

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Demonstrations Next Saturday!

In practically every state in the Union—in every neighborhood where there is a STAUDE dealer—there will be a field demonstration of the STAUDE Mak-a-Tractor next Saturday and each following Saturday in June!

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See the STAUDE Mak-a-Tractor do the work of four big horses. See it start on high gear with full load. See the STAUDE special cooling radiator and force-feed oiling system that absolutely prevents the engine from overheating. See why the STAUDE Mak-a-Tractor has an actual block pulling test equal to eleven times the power of the FORD touring car. See for yourself how the STAUDE converts speed into increased pulling power.

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Mail the coupon right now and we will send you a full description and the location of the field demonstration that will be held nearest you next Saturday, as well as each following Saturday during the month of June. Get fully acquainted with the possibilities of the

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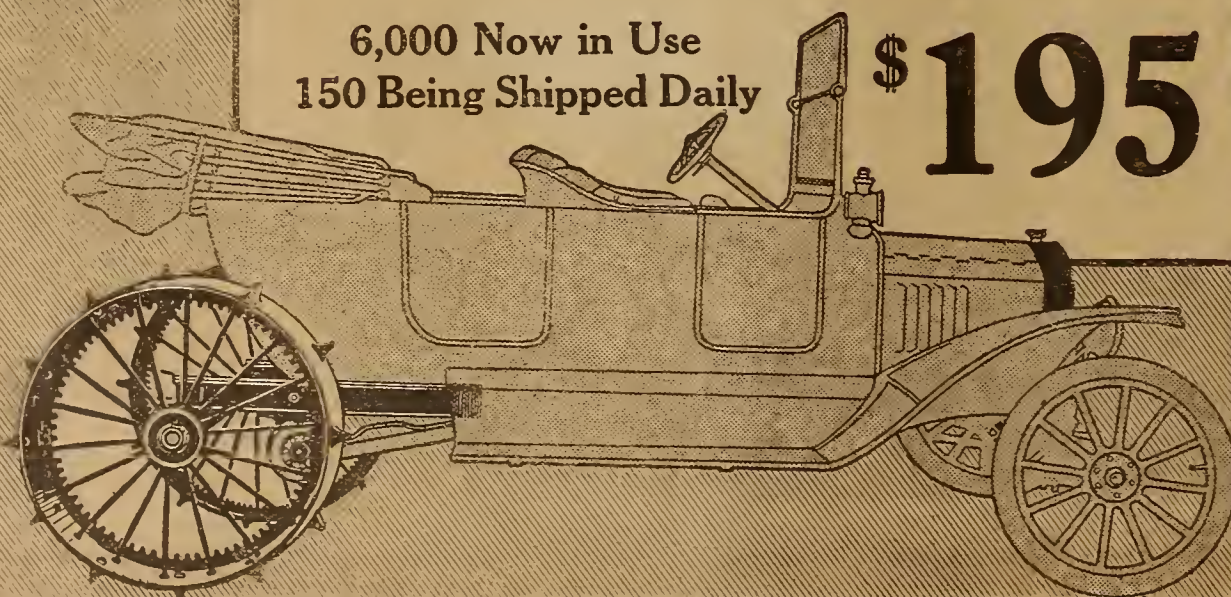
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FARM and FIRE SIDE

Published Twice a Month by THE CROWELL PUBLISHING COMPANY, Springfield, Ohio

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Vol. 40

Springfield, Ohio, Saturday, June 2, 1917

No. 17

The Sanctification of Our Wealth

By Herbert Quick

MONEY used to save liberty to the world becomes sacred. The Liberty Loan is money devoted to that great cause. Constitutional liberty was born in England, and was transplanted in America by our forefathers. Our history and England's are the same down to a hundred and forty years ago. The abstracts of title to our liberties run back to Wyclif, John Ball, Jack Straw, Wat Tyler, King Alfred, John Pym, John Hampden, Oliver Cromwell, John Milton, Robert Bruce, William Wallace, and to Magna Charta and the Petition of Right.

The defeat of the Spanish Armada, the victories of the parliamentary armies, the parliamentary triumphs of Pitt, Fox, Burke, and Barre are as much our victories as those of the people of the British Islands. The democracy built up in the British Isles is our democracy. Our titles to our liberties, the validity of our government, is on trial in the trenches to-day.

A hundred and forty years ago, through France's aid, we formed our own separate government for the administration of our share of this liberty. Since that time we have been engaged in the great task of developing it, and to the best of our imperfect ability perfecting it. It is a long look from Magna Charta to the constitutional conventions of Illinois, Massachusetts, and North Dakota, to the initiative, referendum, and recall in California, but the latter rest on the former.

For a hundred and forty years we have been getting much money in America. We have had the greatest opportunity ever vouchsafed any people to amass riches. We have had freedom, democracy, and a virgin continent at just the time when commerce has been spreading over all the earth by steam and electricity.

We have gained the reputation of being money-grubbers. We have been called Yankee hogs. We have been suspected of being devoted to greed rather than to patriotism. For three years last past we have been drawing to ourselves a stream of wealth greater than any people ever received before. The rest of the world was being drained dry, starved thin, and bled white; but we waxed richer and richer. This has been called filthy lucre, undeserved affluence.

And now arises the supreme opportunity of all our history. We suddenly find ourselves in the position of trustee of all this wealth, and in no sense its owners. Destiny has been very good to America. Fate has made us the richest people on earth, the hugest reservoir of industrial power the planet ever bore. The rest of the world and some of us have thought that Destiny meant to let us get away with all this plunder; but it is not so. God knew better all the time. It belongs to Liberty, and not to us. Britain, the mother of our liberty, and France its godmother have been sending it to us for three years, to be held in trust for their supreme hour, and for the extreme hour of Democracy itself.

It must go back! To keep it would give us a Punic victory, but it would kill the nation's soul. We are vouchsafed the privilege of proving that our lucre is not filthy, but holy. The Liberty Loan means the sanctification of America's wealth. To the great chancery of the God of Battles we shall go with hands full and come out with hands clean. Thank God for that!

In the smoke of the battle, in the furnace of fight, we shall weld the broken ends of our history together again with the histories of those dearest sisters of ours, Britain and France. In the Liberty Loan we shall send them back their profits, and our own accumulations to the uttermost penny if necessary.

War is not our business. We hate it. So does France. So does England. "The irony of it," said many a French soldier as he marched to the front, "that we, with all our culture and learning and civilization, must go into the trenches and fight like savages!" And how they have fought! The British people for months could scarcely believe that they must go down to this foul death; and how they went, and how they are fighting! War is not their business. But war is the German's trade. Through all the

years of which Germany brags as years of peace, there was not one single moment of real peace. It was all a preparation for this damnable thing they have forced upon us. The Liberty Loan goes to help the peoples who hate war, and to defeat the ones who even in peace times are merely lying in wait like tigers for the chance to spring.

Just before the German War broke out there came to an Ohio town a godly young German student who wished to prepare himself for the ministry in an American theological school. He was godly with true German efficiency. He studied theology until his eyes ached, and he prayed as he studied—prayed at the proper times and in the proper places. He was different from the German boys with whom I played in Iowa when I was a boy. He was a standardized German boy of to-day.

The German War broke out, and he was forced to

good young German in the fashion of 1914, and therefore he had to believe that war is a good thing in itself. Being a Christian, he had to believe in the Christ of Wilhelm, the German God. Being a godly young German divinity student of the fashion of 1914, he loved the sight of Belgium on the cross.

This is the wolfishness against which we fight in this war, and we fight alongside the nations which hate war but are forced to fight wolfishness. The world cannot be again as it was, half democratic and half despotic. It must be all one or all the other. We fight to make it all democratic.

The Liberty Loan is a continuation of the financing by which Robert Morris furnished the money with which Washington carried on our Revolutionary War, the same financing by which Jay Cooke got the money for Lincoln.

Money devoted to such causes has sometimes saved the world to civilization. Themistocles, after the battle of Marathon, caused the Athenian people to take the revenue from their silver mines and with it build a navy instead of declaring dividends. With that navy was fought the Battle of Salamis, which saved Europe from the dominance of the Persian and preserved to us the opportunity to develop the civilization we now enjoy.

The Liberty Loan is as sacred to the cause of civilization as the silver with which Athens built her navy.

We, too, are at a turning point in history, as certainly as was the world when the Persians were turned back at Marathon and Salamis, or when Alexander won at Arbela, or when Carthage was defeated at the Metaurus River, or Attila, the heathen Hun, by the Romans and Christians, or the Turks held back from sweeping over Europe, or when France was preserved by Joan of Arc, or the Saracens defeated by Charles the Hammer as they swept up from Spain to make Europe Mohammedan.

Treasures spent to win these victories blessed the world.

The Liberty Loan will save France, redeem Belgium, preserve Britain, safeguard ourselves. For we must carry the war to the Germans, or they will bring it to us. If we cannot win with the most powerful allies in the world, we shall be forced to fight it out alone with Germany and such allies as she may bring against us. It is not an incident of this war only that Germany sought to combine Mexico and Japan against us. It is a part of her policy. It is connected with the German uprisings in Brazil and the traitorous German propaganda in this country. Russia is making her last stand, in this war, against complete German domination. If this war is not won, we shall face a German combination of all central Europe, of a subjugated Russia, of two hundred millions of Mohammedans, of reinforced Mexico, of God knows what array of power marshaled under the banner declaring that "war is Christ-like," and the guns of this hellish European-Asiatic alliance will thunder on our shores, and threaten our frontiers.

We may save the world to democratic civilization through the Liberty Loan as the Athenians saved it by a wise devotion of their treasures to a cause of the greatness of which they had no more idea than most of us have of the issues which hang on our actions.

In the Liberty Loan we send our money to keep in the field the men who will make it possible for our men to bear successfully the Flag in Europe. We all hoped that Columbia might always live her old retired provincial life without mingling in the society of the world's courts and chancelleries, but it was not so to be. Willing or unwilling, she must make her debut—and she must make it in blood and smoke and thunder. She must go in with the eyes of the world upon her as they never rested on a nation. She must come out at the head of the world's peoples or disgraced. The Flag is risked on the cast of this die.

In the Liberty Loan the wealth of America salutes the flag. It speeds on before our soldiers, and tells our friends fighting and dying for our cause that the Flag will soon be with them, and to be of good cheer. Without the Liberty Loan, Columbia, the great debutante, can never take her place in that mighty company without disgrace.



Rollin Kirby in the New York "World."

In defense of these!

stay in America. I suppose he is here yet. One day he was taken by an American friend to a moving-picture theater, and there was suddenly thrown on the screen a reel of pictures of the flight of the Belgian refugees before the German invasion.

The godly young German gazed on it as if fascinated. He saw women and children drifting before the German storm in a great wave of human debris, babes feeling for breasts which answered with no milk, little children peering into strange faces for lost parents, mothers weeping for lost children, every human derelict so recently a citizen, with a home, a trade, a husband or a wife, a parent or a child, a sweetheart or a lover. The awfulness lay as much in what these people had been yesterday as in what they were to-day; that quiet and peace as compared with this anguish and desolation.

His friend felt a deep embarrassment to have thus brought the godly young German divinity student to a place where the disgrace of his country was thus openly displayed. But he need have given himself no uneasiness. The godly young man was not ashamed. The tears in his eyes were tears of true German piety at the work of the German God, for he turned to his friend with the joyful whisper, "Oh, my friend, war is Christ-like! War is Christ-like!"

Shameful perversion of a people's soul! He was a

Success with Summer Boarders

How a Farmer's Wife Makes Money from City Vacation Seekers

By REBECCA MADISON

ASTRONG desire to make pin-money tempted me to take summer boarders as a means to that end. Our house was large and roomy, containing twelve rooms, a summer kitchen, and three large porches, and I realized it would be an ideal place for boarders.

As it was then May, it was too late for me to do much in the way of special preparation, but I decided I would only charge \$6 for room and board, provided I could get the boarders. I placed an advertisement in a large city daily paper, and within a week had the promise of as many roomers as I felt I could accommodate on such short notice.

I averaged six roomers from the middle of June to September 15th. That summer I banked \$150, and the January following I spent all of it, and a little more, in repairs and stocking up with things I thought I ought to have for the comfort of my paying guests. My first year's experience had been so gratifying that I had no qualms of fear at branching out.

During January and February I took inventory of our stock of bedding, towels, etc., and what was needed for the coming year I bought then while the white sales were on. As I had to fit up a couple of bedrooms, I needed new furniture for them. Following is a list of my expenditures for the beginning of my second year:

2 new beds	\$22.00
2 new dressing tables	24.00
4 small rugs	8.00
2 rocking chairs	11.00
Bedding, linen, etc.	18.00
Painting and papering bedrooms	35.00
2 lawn swings	11.00
2 porch hammocks	10.00
5 folding screens for bedrooms	10.00
3 croquet sets	7.00
2 hammocks	5.00
Total	\$161.00

I then had some cards printed, and to each correspondent who wrote me regarding my accommodations, terms, prices, and a host of other small but necessary details, I sent one of these cards. I held rigidly to the truth in everything, promising nothing that I could not supply. Every boarding place and hotel I had ever stopped at had rules tacked up for the guests. I felt that they were paying for certain privileges, and it was only justice that the housewife and her family should remember this, so I felt the need of rules for myself also, and tried to live up to them as far as possible.

Followed the Golden Rule

ONE side of these cards contained a set of rules for my boarders, and the other side one for myself.

RULES FOR GUESTS

Meals served at 7:30 A. M., 12:30 P. M., 6:15 P. M.
 Guests will please observe the hours for meals.
 Board and room for adults \$8, children \$6 per week, payable in advance unless special arrangements are made.
 Do not take magazines and papers away from tables.
 Close all outer doors tightly.
 Ring bell if something is wanted.
 Keep out of the kitchen.
 Do not scratch matches on walls or furniture.
 Comfortable bed, fresh eggs, butter, cream, milk, and fruits guaranteed. If unsatisfactory, notify hostess.

RULES FOR MYSELF AND FAMILY

Consider the comfort of guests at all times.
 Keep bedrooms and other rooms immaculate.
 Table linen and dishes must be spotless.
 Cultivate the taste of your guests.
 If necessary, remonstrate in a kindly manner.
 Watch bedroom supplies.
 Remember always your guests are paying for comfort.

I tacked up one of these cards in every room in the house, not only that my roomers would remember them but also that they serve as a constant reminder to my own family that everybody's privileges be observed.

My advertisement stated plainly that my country home lacked many of the luxuries of the modern city dwelling but contained all the real comforts of home. When my guests arrived they were pleasantly surprised to find I had exaggerated nothing. Realizing that first impressions are lasting, I always strove to give my guests a cordial welcome when they came. We sent a road wagon

for heavy baggage, and my husband took the car to the station to meet our boarders while I stayed home to prepare a dainty tray, hot water, and the few little things that are left to the last minute.

To the city dweller a month in the country means much. It means thick green grass to lie upon and feasting the eye with green things growing. It means forgetfulness of canned goods and fruits. It means an abundance of fresh, green vegetables, thick, rich cream, milk and eggs aplenty, berries and fruits fresh from the garden. It also means a chance for recreation.

Though the list may sound formidable, you will see that many of the requirements are furnished by the great outdoors. The tasks that fall heaviest upon the farmer's wife are supplying a dainty table with appetizing viands, a cool, dainty, and well-ventilated bedroom, plenty of good, soft water, and clean linen.



Our house was large and roomy, with a summer kitchen and three large porches—ideal for summer boarders

After we installed the bathroom we found it cut our work in two.

When we consider that from \$150 to \$850—according to the number of guests one can accommodate—can be cleared in eight or ten weeks from the paying guests, the undertaking seems attractive if it can be accomplished without too disproportionate an outlay of strength.

For myself I found that the little printed slip with the same set of rules for every guest, balanced on the other side with a set for my own household, has been a wonderful factor in insuring my success. My guests, numerous and unlike in disposition, have never willfully overstepped their privileges; and when they have accidentally done so, the ready apology soothed the ruffled spirit.

One year I numbered a stenographer among my list of boarders. She was most lovable and very agreeable but inclined to be late every morning for breakfast. About nine o'clock she'd ring the bell and ask if she could have a cup of coffee or milk, some bread and fruit. I accommodated her a few morn-

ings while she wasn't exactly well, but soon another boarder asked the same privilege. Tactfully I went over the situation with both, and they pleasantly agreed with me it would upset the morning's routine if I should start a practice of that kind.

I think the reason so many farmers' wives fail with boarders is because they are not willing to learn how to keep them. Graciousness and tact are absolutely essential for success. If you look through the large daily papers you will find many people advertising for a few weeks in the country. There is always more or less correspondence between the hostess and paying guest, and you must be tactful and judge something of your would-be boarder from his letter.

I found young men and young women clerks, stenographers, and professional people the most desirable class. They did not crave excitement. They wanted rest. As we were a short distance from a lake, the young folks would frequently ask for a lunch and then spend the day on the water. The most disagreeable guests were mothers with small children. When I stopped taking children I found very little dissatisfaction among my people.

Before undertaking the work, the question of help must be provided for. My own solution of the problem might help others. Besides my own two daughters I had the help of a boy, twelve years old, who was very large and well built. I gave him \$3 a week and the privilege of utilizing some of the by-products of the farm that are usually wasted.

He did everything that a girl could do, and more, except bake. He carried water, ran errands, cleaned and prepared vegetables, picked fruit, dusted, and finally learned to make beds. Turning the wringer and washing machine was play for him. He had certain hours for himself, and during that time he was allowed to pick fruit and flowers, keeping the returns for himself. Sometimes he used that time working for the men on the farm. All time spent this way was paid for at the rate of 15 cents an hour. I always had a large garden and never began to use all the vegetables. He sold many during his idle hours that otherwise would be wasted.

Farmers' wives are apt to make the mistake of thinking that the table must be loaded down with extra-fancy cooking. Rich pastries, high-spiced cakes, puddings, etc., were taboo in my house. All kinds of fresh fruits with thick, rich cream were favorites with my guests. Neither do they tire of eggs and chicken. Closely akin to food is that of serving. Possibly guests are more exacting as to the manner in which food is served than they are regarding the food itself.

Set an Attractive Table

EVERYTHING in the dining-room must be immaculate. To allow flies to stay in the room is nothing short of a crime. If your dining-room is near your kitchen, keep your door closed so that no odor of cooking finds its way there. I always insisted that table linen be spotless and the silverware shining. A tea tray on wheels lightens the work of serving. I never used coarse-ware dishes, as pretty floral patterns could be purchased very cheaply and made the table inviting.

Next in importance are the guest chambers. The one inexorable rule is: you must provide a restful bed. If the springs do not sag your guests will not complain. The room should contain writing desk or table suitable for such, bed, dresser with good drawer room, closet provision, good lights—for many guests like to read at night—waste basket, washstand, though you may have bathroom, and one or more comfortable chairs. Our house was lighted by acetylene gas.

The season is short, though it is strenuous, and certainly the returns are very tempting. The last year I kept boarders the first one came the first week in June, the last one left September 25th. We averaged twenty boarders for seventeen weeks. We furnished two rigs all the time for the pleasure of our guests, besides many other little accommodations. When I was free to go over all expenses and check up after the last one left I found I was the happy possessor of \$870 over and above all expenses.

EW

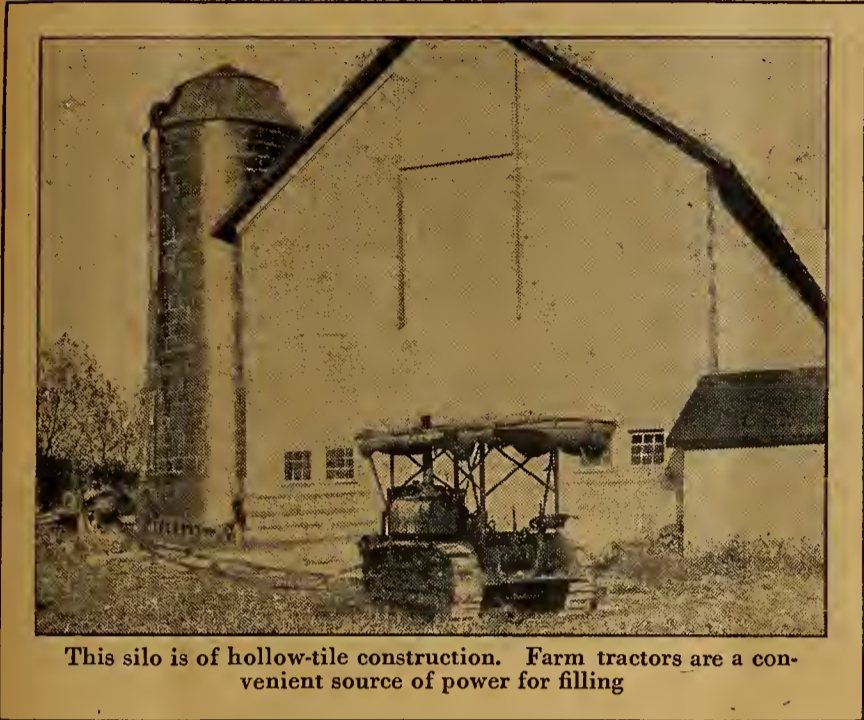


Realizing that first impressions are always lasting, I strove to give my guests a cordial welcome, and someone usually met them at the station with the car

Build a Silo This Year

Provide Inexpensive Winter Feed to Maintain Meat and Milk Supply

By B. D. STOCKWELL



This silo is of hollow-tile construction. Farm tractors are a convenient source of power for filling

Inside Diameter	Number of Cows
10 feet.....	12
12 feet.....	17
14 feet.....	23
16 feet.....	30
18 feet.....	38

When there are more than 38 cows to be fed, it is best to build two or more silos instead of one very large one. A silo more than 16 feet in diameter is hard to feed from, owing to the work of pitching the silage across the silo to the doorway opening. From the foregoing table you will see that this dairyman should build his silo 12 feet in diameter. The height of the silo is determined by the number of months the contents are to be fed. But to make the silage pack well, have the height at least twice the diameter.

Usually, silage is fed for a period of from six to eight months. If the dairyman whose questions we are answering wishes to feed silage six months, the height should be 28 feet. For an eight-months feeding period the height should be 32 feet. A 28-foot silo (12 feet in diameter) will hold, with good packing, about 66 tons, and the 32-foot size will

accommodate 75 tons. The silo will want to spend most of his time in the silo packing the fresh silage. Keep the silage high at the edges during filling, and pack well. Concrete tampers are good for packing silage.

The binder should get a good start the day before. A fair wage for the man with his team and binder is \$10 a day, and for the engineer with his cutter about \$15, or \$20 if the engineer furnishes his own fuel. The tendency nowadays is toward cutting silage in from one-half to three-fourths inch lengths. This packs better and the stock eat it up cleaner than when cut longer. In no case should the cut exceed an inch. An average cost of filling a silo is about 75 cents a ton. One Ohio dairyman who keeps a record of his farm expenses found that it cost him \$44.25 to put 60 tons of corn into his silo as compared with a former cost of \$45 for cutting, shocking, husking, cribbing, and hauling the fodder, which was not nearly so good a feed. An acre of corn in the silo is worth about two outside.

Make Foundation Early

A ROOF for the silo is not actually needed, but is a help in holding the heat of the silage, causing it to cure well after filling. In winter a roof will help to prevent frozen silage as well as keeping out snow. Silage is not injured by being frozen, provided it is fed promptly after being thawed. But do not feed it frozen, as it may cause digestive disturbances in cattle, and colic in horses and mules.

The total cost of raising corn for silage will run from \$3 to \$6 a ton for the finished silage, all ready to feed, not counting the cost of the silo. At an average cost of \$3-per-ton capacity for the silo itself, the charge against a silo that lasts twenty years is about

THE cry of the weakened people of Europe today is for meat and milk, especially for fat. The appeal of Von Hindenburg before the German Reichstag for more fat with which to feed the soldiers indicates that failure to provide abundant animal food was the great oversight in Germany's military preparations. Meat and milk, both of which contain fat, will be needed in enormous quantities by our army and allies in addition to the usual home requirements.

Silos now in use in the United States number about a third of a million, and are a guarantee that we are fairly well prepared for feeding a good many cattle this year. But be assured there will be no oversupply. Last winter's experience indicates that all kinds of grain and live-stock feed will be scarce and high priced, and hay and silage will be the means of carrying a larger percentage than usual of all kinds of live stock through the coming winter.

A neighbor of mine lately dropped some remarks which may express the sentiments of a good many others who see milk profits ahead and are planning to increase the size of their herds.

He has been keeping 10 dairy cows and has no silo. But this year 6 heifers will freshen, and he hopes gradually to increase his herd up to 20 cows, which is the capacity of his barn.

To Find Proper Size

"I HAVE heard," he said, "a good deal about feeding silage, and I have an idea I ought to put a silo up this summer. But how am I to know how big a silo I ought to have? How much corn will be needed to fill it? Should it have a roof? How much should I feed? Will freezing hurt the silage? And what will the silage cost me by the time I have raised the corn, filled the silo, and settled with the man who owns the filler and engine? I want to know where I'm headed for before I start."

This man is a good farmer and American citizen. He knows that dollars grow on his farm only by means of the hardest work and utmost coaxing. But he also has a strong vein of patriotism, and is going to plant half of his last year's pasture to corn, in the belief that it will produce more feed that way than in grass.

This is briefly the way to know how big and what shape of silo to build: The number of stock to be fed determines the diameter. Dairy cows will eat about 40 pounds of corn silage a day, beef cattle about 35, horses about 15, sheep and hogs about 5, and chickens will eat a small quantity also. First figure the silage appetite of all the stock in terms of dairy cows.

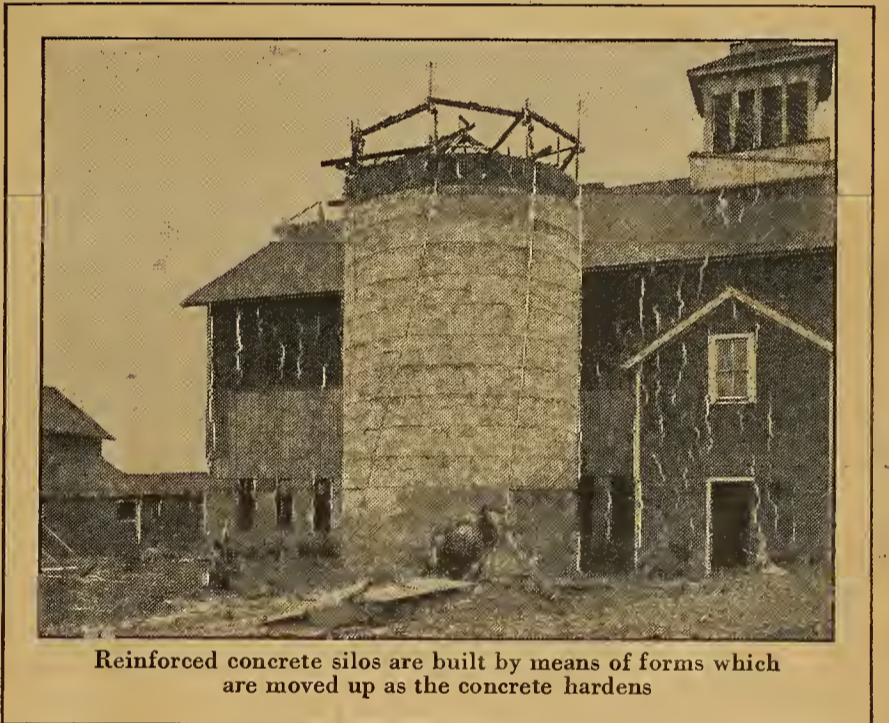
The dairyman I mentioned will have 16 cows and 5 horses to feed next winter. He may possibly have a few hogs, but we shall count only the cows and horses, which we are sure of. The 5 horses will eat about as much silage as two cows, so his needs are on the basis of 18 cows. Here is a convenient table for finding the proper diameter of silo. It is based on the fact that about two inches of the surface of the silage must be fed daily to prevent spoilage. Observe and remember that the diameters given are inside measurements:

Of the two sizes mentioned I should favor the 32-foot height because the silage will pack better and therefore keep better. Besides, this feed to last well into the spring, and he can let his pasture get a good start before turning the cows onto grass.

In judging how much corn will be needed to fill the silo, you must know something of the past record of the soil as corn land. The same number of corn hills that will make 5 bushels of grain will yield about a ton of silage. So if your land has given 40 bushels of corn to the acre, you can count on about 8 tons of silage per acre. If your corn crop runs 60 bushels to the acre, such land will yield 12 tons of silage an acre on an average.

On the basis of 10 tons of silage to the acre, you can see that more cows can be kept on the same farm by reducing the pasture and building silos. The time to cut corn for making silage is when the kernels of dent corn are glazed and well dentured. This is generally the time that about one fourth of the husks and the lower leaves have turned brown. Flint corn that is well glazed is ready for the silo, even though the leaves are still green.

The number of men required for the job depends on the method of cutting and the length of the haul. Corn may be cut in any manner, but a corn binder is most satisfactory. In addition to the labor of cutting, figure on four racks with men and teams for hauling, and a man with a cutter and engine. The owner of



Reinforced concrete silos are built by means of forms which are moved up as the concrete hardens



Two silos of average capacity give better results than one huge one. These are wood-stave silos on concrete foundations

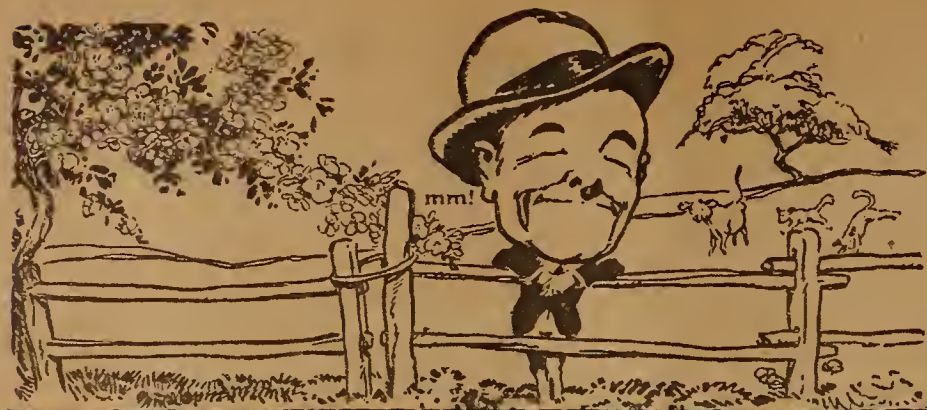
15 cents a ton a year—rather economical storage.

Regardless of the material of which a silo is constructed, concrete has been accepted as best for the foundation and floor at the bottom. The customary

excavation is four feet to get the foundation well below the frost line. For the construction of the silo itself, here are the principal materials that have stood the test of usage: Wood staves of cypress, redwood, Oregon fir, and yellow pine, reinforced solid concrete, reinforced concrete blocks, glazed hollow tile, non-porous brick, pure iron, alloyed metal, and stone. There are various modifications and combinations of materials, such as cement stave silos, wood silos plastered inside with cement, and various paneled and patent silos of special construction. But if the inside wall is smooth, vertical, and airtight, any silo will keep its contents in satisfactory condition.

June, July, and the first part of August are the best months for making the foundation, because the ground is dry and easily excavated. And by the time the foundation has hardened it is well to have the rest of the material already on hand so it will be ready when needed.

EDITOR'S NOTE: Questions relating to silos will be cheerfully answered by personal letter. Please describe your conditions. Address The Building Editor, FARM AND FIRESIDE, Springfield, Ohio.



HOW do you know
that spring is in the air?
"Your Nose Knows"

By the fragrance! It's awakening Nature saying "good morning" to you across the fields—the fragrance of swelling buds, of new-plowed earth, of fresh green pastures. How wonderful it is! How sure a promise of returning life—"Your Nose Knows." Fragrance never misleads. It's the pure fragrance of a good tobacco, likewise, that promises sure pleasure in smoking and guarantees satisfaction.

There's such a promise in the pure fragrance of

Tuxedo

The Perfect Tobacco

For the tender, ripe leaves of which Tuxedo is blended have stored the Blue Grass sunshine of old Kentucky and bring to you a pure fragrance that has no equal. "Your Nose Knows."



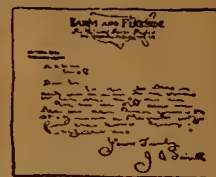
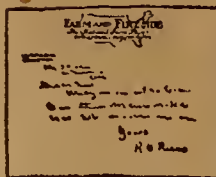
Try this Test: Rub a little Tuxedo briskly in the palm of your hand to bring out its full aroma. Then smell it deep—its delicious, pure fragrance will convince you. Try this test with any other tobacco and we will let Tuxedo stand or fall on your judgment—
"Your Nose Knows"

Guaranteed by
The American Tobacco Co.



The Editor's Letter

Modern Geography and a World Famine



SINCE most of us went to school, geography in terms of human life has changed almost beyond comprehension. The population of the earth has increased during the last thirty-three years—our own generation—by 165,000,000 people. And those 165,000,000 people are 165,000,000 good reasons why the cost of living has gone up, also why farm land is so high-priced. This number is just the increase, and it brings the total world population to nearly one and two-thirds billion human beings, or a figure equal to sixteen times the population of the United States.

Those of you who are working to support families know what it costs to feed and clothe and supply the modest wants of the few about you. Paternal and maternal love somehow always finds a way to do it. Or, I should say, it has always found a way here in America thus far. But let us not be blind to a few things about our existence and our relations with other peoples and nations. The population of the earth has lately been increasing at the rate of 5,000,000 people a year, all of whom must be fed, clothed, and housed. But the earth is the same size to-day as it was ages ago.

The earth has a trifle less than 197,000,000 square miles of total surface. A little over a fourth of this surface is land, 55,000,000 square miles of it. And of this 28,000,000 square miles, or a scant fraction over one half, is soil that can be used for food production. The rest is desert, mountain range, and polar regions. A little of this might possibly be reclaimed, but not very much.

So here we have two vital facts in the practical geography of to-day: There are 1,600,000,000 people on the earth to feed, and 28,000,000 square miles of tillable land with which to do it. Or, reduced to figures in which we are more accustomed to think, this means that one person must live off the production of every 11 acres, on an average, the world over. Don't say, "It can't be done," for it must be done or somebody will starve. In Belgium to-day, as for the last two years, helpless mothers watch their babies slowly starve to death before their eyes. Poland is in almost as pitiable a plight, judging from the fragmentary reports that have filtered through, and all Europe is suffering to some extent, the poor especially.

There is still food enough in the world to prevent this, if it can be distributed rapidly enough. Here in the United States, where our population averages about 31 people to each square mile of land, we can scarcely realize that Europe contains 106 people to the square mile.

Great Britain is planning to put its people on bread rations this summer; a French cereal authority predicts a cereal famine for France in 1918, and even the Scandinavian countries are petitioning the United States for aid to avert hunger among their people.

IN APPEALING to America, Europe knows that we are practically her chief hope. Let us understand the reason why. I have before me the last crop report of the International Institute of Agriculture. It is devoted largely to the cereal production of the southern hemisphere for 1917. The countries south of the equator have just had their harvests, for you will remember our winter is their growing season. In Argentina, Australia, and New Zealand, according to the official report, the total yield of wheat for the three countries is slightly above half of last year's result. Argentina's wheat crop is exceptionally small.

The great bulk of all the land surface of the earth is, as you know, in the northern hemisphere. All of North and Central America, all of Asia, all of Europe, all of Japan, all the Philippine Islands and two thirds of Africa lie north of the equator. There remains but six sevenths of South America, one third of Africa, Australia, and a few other islands in the southern hemisphere. This is scarcely one fourth of the total, which means that over three

fourths of the world's food is produced in the fertile portion of the north temperate zone.

So you can see that, owing to its limited acreage, the southern hemisphere will not be able, even with the modern methods now used, to make up for any serious deficiency in northern hemisphere crops. From this little geographical study we can measure our responsibilities in the light of world needs. The facts just mentioned are the basic reasons underlying the President's call to rally round the plow as well as around the flag.

FORTUNATELY, here in the United States we have good soil five eighths of which is already improved. We have the best agricultural machinery in the world, most of the best live stock, good weather service, and means of controlling plant and animal pests. But, chief of all we have an army of hickory-shirted regulars bigger and better trained for production than that of any other nation. The fight against world famine is not spectacular, and is almost silent. The clicking of binders, the lowing of the cows waiting to be milked, and the hum of flour mills will be some of the indications that we are waging a winning campaign. In our crop reports this summer Europe will see a vision of her welfare for 1918. If yields are good, the reports will be a reprieve; if poor, the official figures of the Crop Reporting Board will be a death sentence for many of our fellow human creatures across the Atlantic.

Nearly a century and a half ago George Washington said, "To persevere in one's duty and be silent is the best answer to a calumny." The declaration of a state of war with Germany came at a time when spring plowing was in progress in our Central States. Statesmen, military men, professors, and editors have thus far made most of the suggestions bearing on farmers' duties. I am glad that most farmers have been too busy guiding plows and planters to say or write very much.

But one FARM AND FIRESIDE reader who, with the help of his two sons, works a truck farm in southwestern Missouri, has found time to give his view of the situation.

"I am a market gardener," he writes in a bold hand, "and I can't keep from saying a word in regard to the war. We did not want war. No good citizen wants his country in war if it can be avoided.

"Our President has stood the abuse, it seems to me, longer than it is possible to endure abuse and preserve respect. He has done the only thing that could be done. Every other course has been exhausted even to the patience of a saint. Now, what are the people going to do? The question is easy and the answer should be clear to every man, woman, and child: get square behind the President and support him in every possible way. If you are a true American, you will.

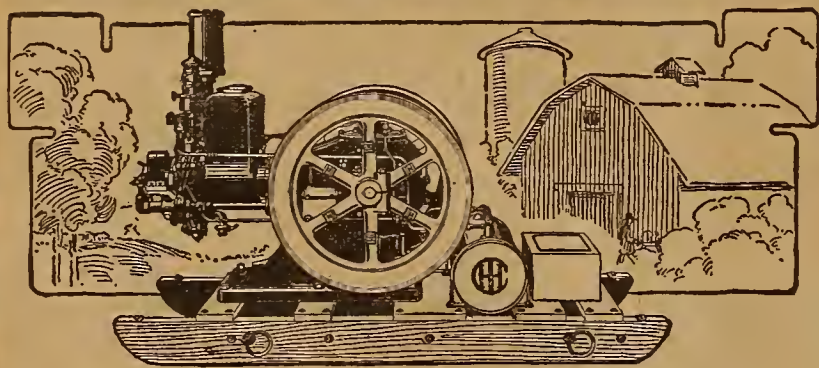
"The greatest army we can put against our enemy should be called to arms at once. And those who work on farms should arm themselves with plows, hoes, planters, grain drills, harrows, and cultivators. Every farmer should at once plant every spare foot of land.

"The farmers of the United States are good men—nearly all of them. A man can't be a good farmer and be very bad.

"So, boys, let us get busy and raise all we can of everything to eat. Let us feed our allies, our army and navy, and the women and babies at home.—JIM PIERCE."

This letter I hope expresses the sentiments of all FARM AND FIRESIDE readers. It is the spirit needed in 1917. Our forefathers, fighting under the spirit of '76, fired the shot heard round the world. To be equally true to the cause of democracy and humanity, let us therefore, each striving under the spirit of 1917, raise crops that will actually go round the world.

The Editor



Does Its Work for Little Money

WHEN buying an engine for any farm job you can't beat the Mogul engine for economy—no matter where you look or what price you pay. A Mogul gives you steady power at the lowest cost per day or per year of service—any way you figure it. It works on the cheapest engine fuel you can buy, common coal oil. It uses only just enough fuel to carry the load. It starts and runs on magneto—no batteries to buy or renew. Its oiler takes care of every bearing, and never forgets. It is as near automatic as an engine can be made and it handles all kinds of engine work.

The Mogul is made to do its work for little money—less than any cheap engine. Then, it will outlast two or three cheap engines. If you want steady reliable power at the lowest possible cost—and, of course, you do—buy a Mogul engine in any size from 1 to 50-H. P. If you don't know the local dealer who sells Mogul engines, write to us. We'll tell you where to find him and we'll send you our engine books.

International Harvester Company of America



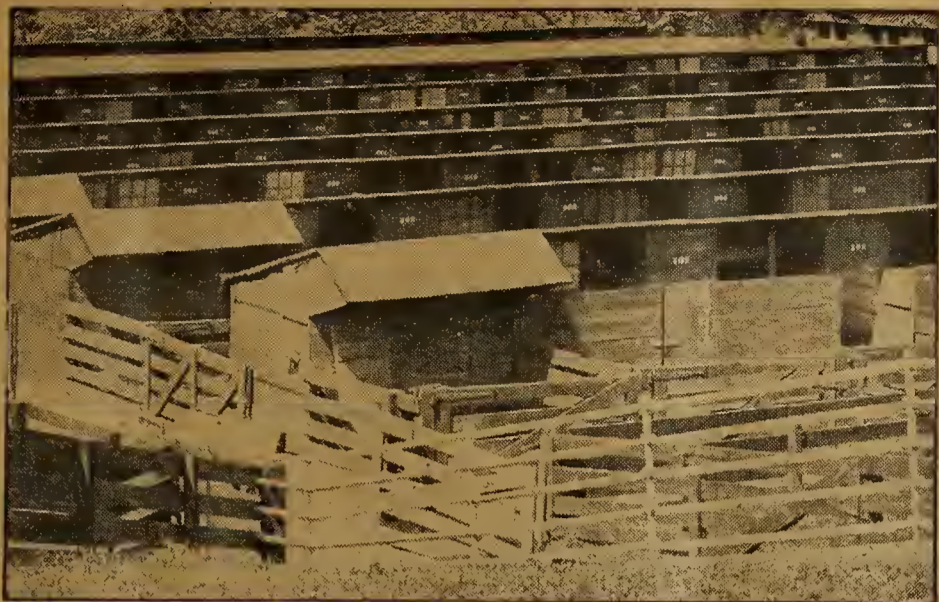
CHICAGO

(Incorporated)

U S A



Champion Deering McCormick Milwaukee Osborne Plano



A corner of the hog pens at one serum laboratory is shown in this photograph. This laboratory has pens with a capacity of 1,500 hogs



The blood of these hogs will soon be used for serum because they have been given virus and serum until they are immune from cholera

HOGS will produce more meat for the food consumed, and will produce it more quickly, than any of our farm animals, except poultry. That hogs can do this has an especially important significance at this time. A victorious war against Germany depends upon two great factors—arms and food. The war of arms will be decided on the battle fields of France, the war of food will be won or lost in the United States.

As of yore, our armies and the armies of our allies travel on their stomachs. A very important item of food for the men in the trenches is pork. Then there is the pork the people at home will need. To supply the pork for our armies and for the home consumption, and to meet the huge demands of our allies, will require a maximum production of hogs.

Because the bulk of the 1917 pig crop has been farrowed, it behooves us to raise as many of these pigs to maturity as possible. The way to do this is to eliminate losses. Cholera, which is preventable, will cause the death of hundreds of thousands of hogs this summer and fall, to say nothing of next winter, if they aren't vaccinated against it. There is absolutely no excuse for losing hogs with cholera. At small cost you can vaccinate your hogs with clean, sterile serum, and eliminate losses.

As heretofore the hog-cholera serum of commerce has contained a large amount of inert material—blood cells and bacteria or germs—all of which retarded and reduced the effectiveness of the protective properties of the serum, the big problem has been to eliminate as much of this inert material as possible. All of the hog-cholera serum laboratories have been rewarded with more or less success in their efforts to do this. Many of them are making a much more refined product than formerly—there isn't as much inert material in it. One laboratory has made especial strides in refining; another in the potency of their product, still another excels in the methods used in handling virus, and so on. One laboratory has perfected a process not only for refining, but for sterilizing as well.

Bacteria in the serum often causes abscesses where the injection is made, and may cause some other disease. The rest of the inert material—the blood cells—prevents the rapid absorption of the serum, and many times causes cysts where the injection is made.

The enthusiasm of the hog grower toward serum has changed just as rapidly as the manufacture of

Pork Preparedness

Improved Laboratory Products Control Hog Cholera

By HARRY M. ZIEGLER

the serum has improved. When I recall the early days of the industry I always think about what a large and successful hog grower told me several years ago when I asked him about his experience with serum.

"My experience has been very sad, indeed," he said, "and as long as the serum manufacturers leave as much inert material in the serum, and fail to standardize it or the virus, I don't ever intend to use any of the stuff again. There was a bad cholera epidemic in my township. Several of my neighbors had lost all of their hogs. The same thing had happened two years previous and I had escaped, but I decided I wouldn't flirt with danger any longer if serum could save me. There was a lot of prejudice against serum, but I thought it was the lesser of two evils.

An Early-Day Serum Experience

I EMPLOYED a competent veterinarian to administer the serum, and had him buy what he thought was the best serum and virus on the market. The simultaneous method was used. The virus was given in the morning, and the serum in the afternoon. The places on the hams where the injections were to be made were scrubbed clean with soap and water, then thoroughly disinfected. The virus was injected into one ham, and the serum into the other one. Ten days later all of my young hogs were dead, and half of the old herd. The serum wasn't strong enough to stop the cholera the virus had started. One of my herd boars and eight of the brood sows survived, but every one of them had abscesses where the injections had been made."

As I said, that was several years ago. Now this same man vaccinates all of his hogs every eight to twelve months. He buys serum and virus from reputable laboratories, has a competent veterinarian do the vaccinating, takes every sanitary precaution, and in summer vaccinates early in the morning. He rarely loses a hog from vaccination, and hasn't lost a hog with cholera for more than four years.

The experience of this man has been the experience of thousands of other hog growers during the last six or seven years. Three things have wrought this change: the demand of the hog growers for a reliable serum, else they wouldn't use it; the earnest desire of

the manufacturers to produce a better and more perfect product; and federal and state control of the serum and virus manufacturing laboratories.

A refined and sterilized serum is not only more effective, but has no bacteria in it to cause abscesses, or blood cells to cause cysts at the point where the hogs are vaccinated.

If the bacteria and blood cells aren't in the way, the protective properties of the serum can get in their work more quickly.

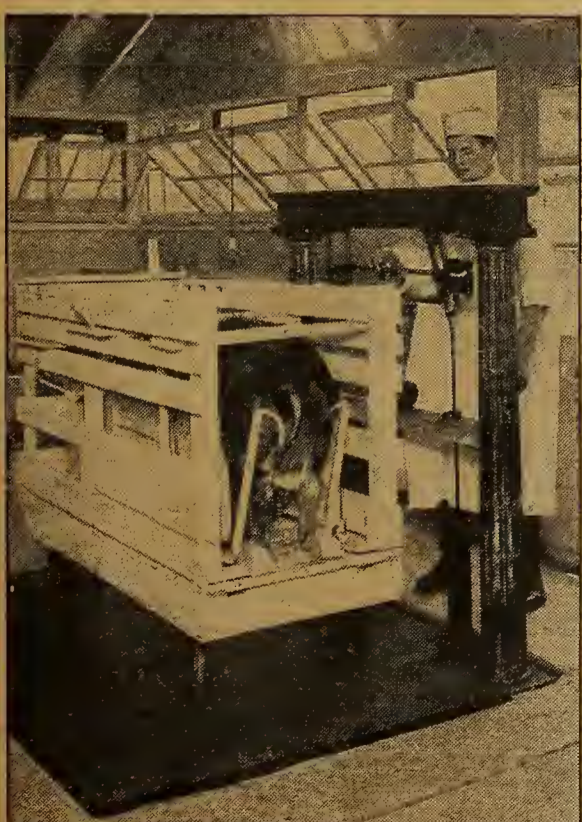
In explaining to me what they had done to the ordinary commercial product, the director of a laboratory making refined and sterile serum likened the serum to a mass containing diamonds, marbles, and cinders.

"The diamonds represent the protective properties of the serum," he said, "the marbles represent blood cells, and the cinders the bacteria. What we wanted to do was to remove the marbles and the cinders without affecting the brilliancy of the diamonds. We worked three years before we were successful in perfecting our process, and we had used up 2,000 pigs in the experiments."

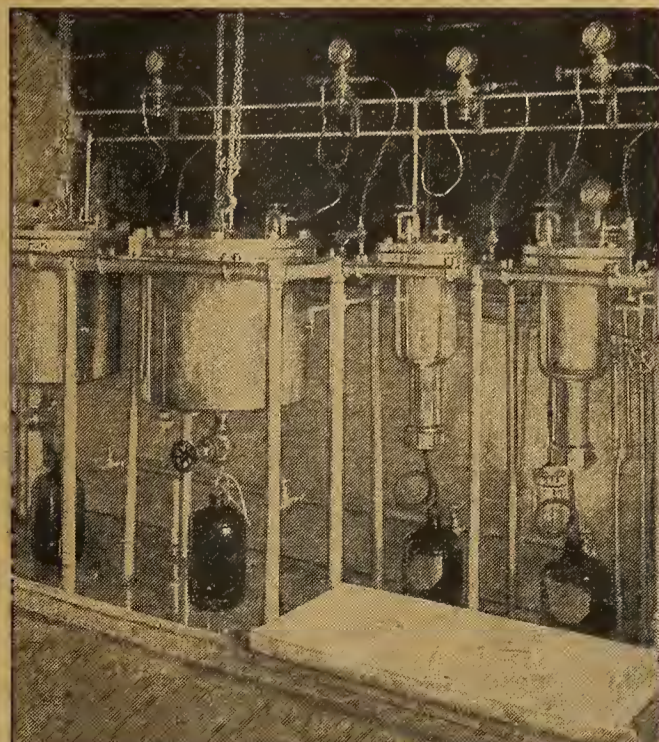
This laboratory began the manufacture of serum six years ago. They were the largest manufacturers of hog-cholera serum, had produced and sold more than fifteen million c.c.s., and had \$300,000 worth of serum on hand, when they decided to stop the sale of serum until they could place a refined and sterile product on the market. The big problem was to filter out the blood cells and bacteria. Merely passing the serum through an ordinary filter doesn't take out the inert material, but filtering it through porcelain does. Heretofore, however, no one had been able to filter serum through porcelain.

All hog-cholera serum of commerce is produced according to the regulations of the Bureau of Animal Industry of the United States Department of Agriculture and under federal inspection. The greatest care is used in its production. The serum, virus, and test animals are kept in a strictly sanitary condition. Because refined and sterile serum doesn't contain inert material, it can be administered through a much smaller needle. This makes a smaller wound and gives less chance for external infection. Besides, the absorption of the serum is completed more quickly.

Serum manufacturers take great precaution to insure the purity and potency of the serum and virus. Although only eight pigs are required to be used in the potency and purity tests by the federal regulations, several laboratories use twelve.



This immune hog has been crated, and is being weighed preparatory to tail-bleeding



A battery of especially constructed filters is used in the process of refining hog-cholera serum



After the final tail-bleeding, hogs are dressed for market under federal inspection

FARM and FIRESIDE

THE NATIONAL FARM PAPER

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June 2, 1917

What the War Means

WE ARE facing a grave national peril which may have the direst consequences. For nearly three years Germany has waged the most terrible war in history. It is a question to-day whether Germany is more nearly exhausted than the Allies. The United States has joined hands with the Allies in the fight to save the civilization of the world and we must win the war.

Hon. James W. Gerard, our recent ambassador to Germany, who knows better perhaps than any other American the inside of German intrigues, says: "It is no secret that if the Kaiser wins he expects to compel the United States to pay the cost of the war." Should he be able to make good his threat, how will it effect the American farmer? Upon him devolves the mighty task of feeding the United States and her allies in this world war. In this most important of all tasks he must be assured protection in his rights. Can he be assured of such protection unless the defense of our nation is at once placed upon a safe basis?

Should Germany win in this war, its naval forces, supplemented by additions taken from the Allies, could invade our shores and compel the payment of any indemnity demanded. This would saddle a heavy burden on our backs. No group in our national life has more at stake in this war than the farmers.

School is Out

SCHOOL is out for the summer. Our boys and girls have spoken their pieces, made their bows, and said good-by to Teacher for four months. And what about Teacher? He or she, as the case may be, has had the training of your child's mind in charge for the past eight months. More than any other one person—yourself excepted of course—she has shaped and influenced your child's character.

For six or seven hours each day, she has been his constant companion. Has she done a good job? Has she been conscientious and interested? Has the child grown and developed under her training? Let us hope so, and if he has, some day before Teacher goes away to spend the summer with her people, go to see her, or at least call her up and let her know that you appreciate her interest and her work. It will mean a lot to her.

State Aid to Food Supply

A MASSACHUSETTS commission now recommends that the State supply county abattoirs, operated at cost, where stock can be economically and properly butchered and the meat stored within easy reach of consumers, thus encouraging a more generous supply of home-grown meat. Another recommen-

ation made was state encouragement or aid in extension of trolley roads into localities where food production is now limited by lack of rapid and economical transportation facilities. Country representatives before this food commission explained how a large proportion of their bumper perishable crops often wasted on the ground on the farm, as the returns received would not justify marketing them.

The recommendations made by this commission and others by similar bodies throughout the country mark the beginning of a new era in marketing.

Activity in Farm Credit

ENCOURAGING news continues to come from the Federal Farm Loan banks, but the farm owners of the Tarheel State appear to be taking to federal farm credit like a duck to water. When the Farm Loan Bank at Columbia, South Carolina, was ready to open for business, 56 local farm loan associations were already organized and had made application for two and one-fourth million dollars' worth of loans, or an average of \$40,000 of loans for each local organization. Since that time, in the opinion of South Carolina financial authorities, the aggregate of the loans applied for has probably doubled, and is

A World Won with Apples

A GOOD apple needs no apology for its popularity. From man's earliest history the attraction of this fruit has been irresistible. Even though fine specimens cost the consumer about double what he must pay for good quality oranges, the apple is not neglected. But it remained for the sagacious fruit growers in a little group of States of our Pacific Northwest to win the world to the possibilities of super-quality apples. The scheme was worked out to a nicety by building on the basis that the customer is "sold" through his eyes.

The advantage gained by flashing beauty, uniformity, and evident quality in the face of the prospect was clinched by a convenient, attractive package stamped with the guarantee of a strong marketing organization. Future business was insured by standardization in size, color, and perfection in every fruit from cover to box bottom.

Team work won this fruit-growing game. The fancy apple became an aristocrat, and specialization through organization turned the trick. The king of fruits, after falling into disrepute, was restored to a higher plane than ever by the magic influence of co-operation.

people, but the real definition, as I have found it, is pluck, grit, determination, and work. I believe that luck's real name was Pluck, but that being too hard for envious, easy-going neighbors to pronounce, it was beheaded, and so we find to-day that the man with pluck is the man with luck.

MRS. F. MARZ, Missouri.

He Has the Right Idea

DEAR EDITOR: I have finished the grammar school and expect to enter high school this fall. I live on a farm, and my father gives me a share in the crops each year. Therefore I have spending money of my own.

I expect to own a farm myself some day, and with the help I obtain from reading good farm literature such as FARM AND FIRESIDE I hope I shall be able to manage my farm wisely.

D. STEVENS, Missouri.

Study the Soil

DEAR EDITOR: Articles on soil improvement always catch my attention. After all is said and done, it remains a fact that a farmer on poor land is still a poor farmer. Soil fertility is, according to my opinion, the gravest problem before the Southern farmer. Of course, I speak only for the South, since I am not familiar with Northern conditions.

Prosperity for the South does not mean prosperity individually; it means prosperity for all, and soil fertility is the first step toward this larger prosperity. Community clubs, through the co-operation of state departments of agriculture and the able assistance of farm papers, are helping to solve this problem.

These community clubs should devote a good deal of time to the study of soil improvement. The six essentials are proper drainage, terracing where necessary, good plowing and proper tillage, thoughtful rotation, fertilization, and attention to the needs of each individual piece of land.

If these things are studied and the resulting knowledge applied to farm operations, I do not see why the South should not become a second Garden of Eden, so far as general prosperity of the country is concerned.

W. L. MOORE, Texas.

Free from Hog Cholera

DEAR EDITOR: Our plan of saving our hog industry in Rio Grande County, Colorado, has worked out so well that I want to recommend it to FARM AND FIRESIDE readers generally. When the hog cholera was causing us to despair of continuing in the pork-making business several years ago, we organized a co-operative society, taking in most of the settlers throughout this section of the valley.

We hired a skilled and competent veterinarian to take charge of the work of freeing our farms from cholera infection, and then to keep them clear of it. Now after about three years' trial of this co-operative plan, I can report it has been made a success. Although rather expensive, the plan has saved many dollars for everyone going into the hog-insurance pool.

Our great valley has as yet comparatively few settlers. Our farms would not yet pass muster as being highly improved among owners of the farming communities farther east. But even with the improvements we have been able to make, our farms now sell for from \$75 to \$100 an acre, and unimproved land as low as \$35 an acre. Our climate can't be beaten for comfort and our kind of farm operations. The weather is mostly fine in winter, with but little snow, and cool in summer. We have the finest kind of water from flowing wells.

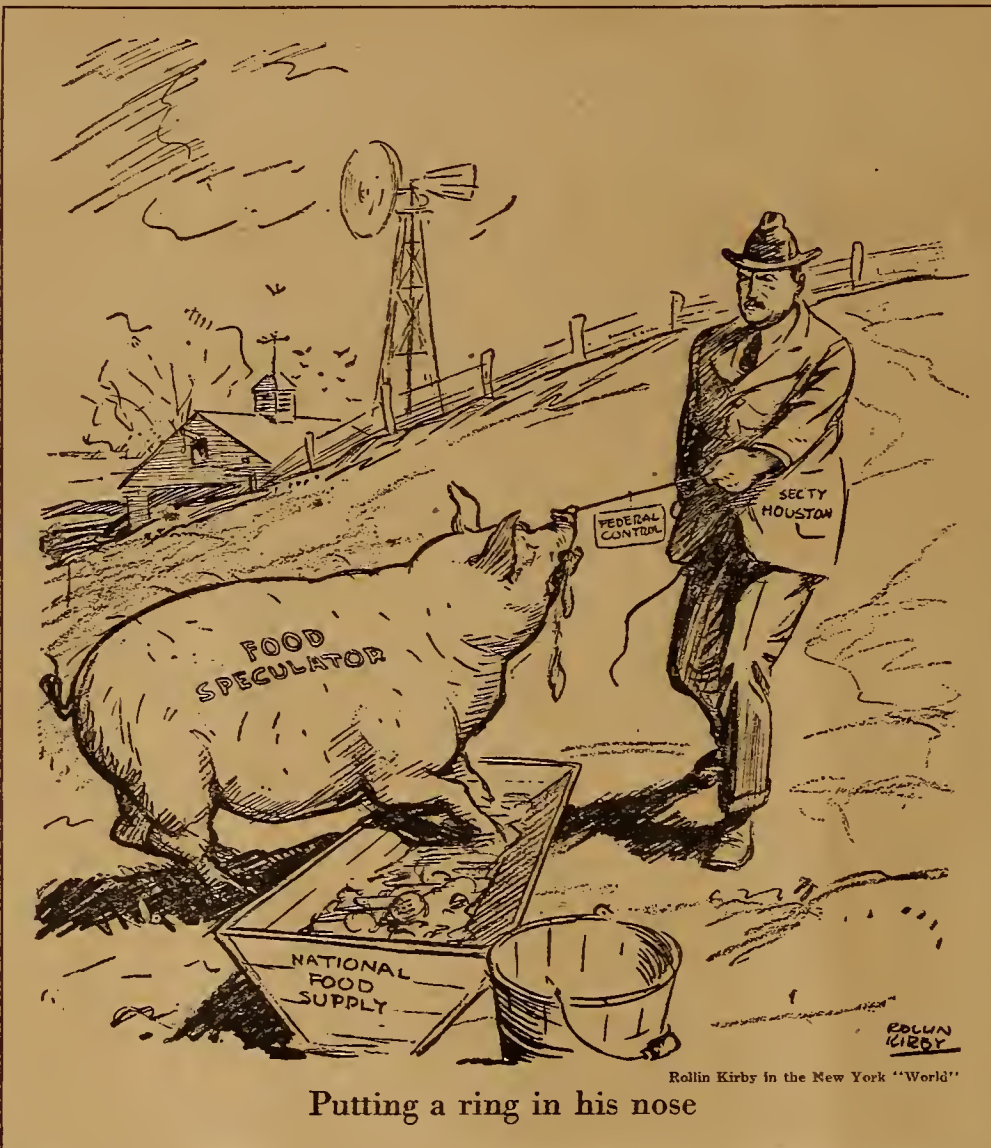
Our railroad shipping points are within 12 to 14 miles of all the farms in the valley, and we haul from five to seven tons over our good roads with four-horse teams. Our staple crops are oats, barley, peas, and potatoes, and hogs are our main live-stock cash crop. This plan of farming enables one man to handle about a half-section of land by means of the subirrigating system we use.

EVERETT E. CHANDLER, Colorado.

Fighting Botflies

DEAR EDITOR: I read the article entitled, "Fighting Botflies," by John Coleman, in FARM AND FIRESIDE last summer. His idea was a very good one, but the way we do it is to put a little kerosene on the patches of eggs. His suggestion was cutting the hair on which the eggs were cemented, but by doing this the hair becomes shorter, until at last it becomes so short that there is nothing to cut off at all, and the bots have got the best of you. Kerosene kills the eggs.

ERNEST H. CANNON, South Carolina.



Putting a ring in his nose

now nearing the five-million-dollar mark.

It needs no great stretch of imagination for a person having experienced the pinch and discouragement of trying to make one dollar do the work of four to understand what five million dollars will do for the agriculture of a State when it is divided among 5,000 or 6,000 energetic farm owners.

If Too Short

FOLLOWING a regular policy even more rigidly than in former years, articles in FARM AND FIRESIDE this summer will be short and to the point. Many of the contributions in this number have been "boiled down" more than half. You are too busy to read long discussions in order to get a new idea or a valuable, practical help.

But for the benefit of those who desire further particulars on any subject, we have arranged an efficient correspondence service with which to give additional information on any article by personal letter. This service is free to subscribers.

Our Letter Box

Luck—Pure Luck

DEAR EDITOR: Did you ever hear someone in criticizing another say, "Yes, he has done well, but it's just luck; he's the luckiest fellow I ever saw—never has any sickness, never loses a hog, never has a crop failure, in fact he was just born lucky"?

I know a fellow who talks that way. He never gets to the field before nine o'clock, and his team always seems to be tired, for he is always resting. He lies in bed until his wife announces breakfast, and it is always either too hot or too cold for him to work. Common food does not agree with him. Dainty dishes and a huge grocery bill suit him.

The lucky neighbor, on the other hand, works early and late. He is up at dawn, and has a day's work done before the other man gets started. It is true, he seldom loses an animal. His hogs are vaccinated; his sows with their young are taken care of intelligently. And so it goes. The lesson is: Whenever you think your neighbor is lucky, sit on the fence and watch him a while. I'll guarantee that you won't find him sitting on his fence watching you.

Luck may mean most anything to some



For Reliable and Economical Service

We know that a certain proportion of Goodyear users buy this tire for reasons of comfort, appearance or security.

But we know also that the overwhelming bulk of Goodyear users buy it for reasons strictly practical in nature.

The primary virtue of a tire in their view is a capacity for reliable and economical service.

And because Goodyear Tires embody this virtue in a surpassing degree, they prefer them as their equipment.

Undoubtedly the cause of Goodyear Tires being more than ordinarily reliable is the manner in which they are built.

Their construction represents the sum of all tire-making knowledge, as we have learned it.

The processes of their construction long ago passed the stage of experiment. Today they are as exact and definite as mathematics.

Not by accident or luck did the Goodyear laboratories develop the tire-making machine, the No-Hook bead, the All-Weather tread, the Braided Piano-Wire base, and like Goodyear features.

Not by chance did the Goodyear fabric mills at Killingly, Connecticut, produce a

fabric stronger than anything of its kind the world had ever known before.

No—these improvements were evolved slowly and laboriously, of painstaking effort and patient thought. They were brought into being to insure the reliability of Goodyear Tires.

But these improvements alone could not enforce the full reliability of Goodyear Tires—they must be supported by the highest quality of materials and workmanship, and by a system of inspection guaranteeing both of these.

They are so supported—and every Goodyear Tire given into the hands of a customer has had the benefit of these improvements and of this inspection.

Ask the Goodyear Service Station Dealer near you what he does to support this goodness built in Goodyear Tires, after the tires have been put in actual use.

He will be glad to tell you what he does, and what Goodyear Tires, Goodyear Tubes and Goodyear Tire-Saver Kits do, to help realize what you and every other sensible motorist seeks and desires—reliable and economical tire service.

Goodyear Tires, Heavy Tourist Tubes and "Tire-Saver" Accessories are easy to get from Goodyear Service Station Dealers everywhere.

The Goodyear Tire & Rubber Co., Akron, Ohio

GOODYEAR
AKRON



The Eyes of America Turned on Her Farmers

AT last the American farmer occupies his rightful place in the esteem of the world. Manufacturers, merchants, bankers and city dwellers of all kinds heretofore have taken their food for granted and have overlooked the man behind the plow—the man who feeds them.

Conditions today are such that the producer of foodstuffs is recognized as the mightiest force—not only in the welfare and prosperity of the nations of the world but in the very existence of nations and their peoples.

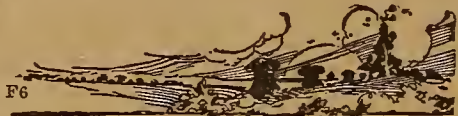
A noticeable feature of the situation, which has shown the American farmer to be on a high moral plane as well as holding an important industrial place is the fact that he has not taken advantage of conditions to extort unreasonable prices from his fellow Americans. He has patriotically increased his production in order to prevent famine prices instead of keeping production down to force prices up.

He has shamed the food speculator—though unfortunately his example has not been followed by all manufacturers—particularly among the makers of so-called luxuries; though

many big manufacturers in this country have followed the farmer's lead.

One of the most noticeable cases among those who have kept faith is that of the makers of Coca-Cola. In spite of the enormously high price of cane sugar—the principal ingredient of Coca-Cola—and in spite of the higher cost of its other ingredients the Coca-Cola Company have not raised the price to consumers nor lowered the quality of that delicious and refreshing beverage one iota. Like the farmers they have kept faith with the people to their own cost.

Perhaps the lessons of fair-dealing and helpfulness that the heads of that institution learned as boys on the farm (for they are products of the soil) have strengthened them to stand firm in this crisis. So let us remember that the beverage Coca-Cola, known as the National Beverage because of its great popularity, has proved itself indeed national by doing its bit to keep down the cost of living.



F6

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AMERICAN SHEET AND TIN PLATE COMPANY, General Offices: Frick Building, Pittsburgh, Pa.

The Percentage of Depreciation

on your automobile can be regulated, if not controlled by lubrication. If you are negligent in the use of a good lubricant, either as to frequency or quality, your car will go to rack and ruin in a hurry—scored cylinders; burned-out bearings; excessive carbon, etc.

Use Polarine

THE PERFECT MOTOR OIL
For Any Make Car—At Any Motor Speed or Temperature

Under driving conditions where temperature of cylinder walls ranges from 300 to 400 deg. Fah. the viscosity of POLARINE is practically identical with the so called "heavy" oils.

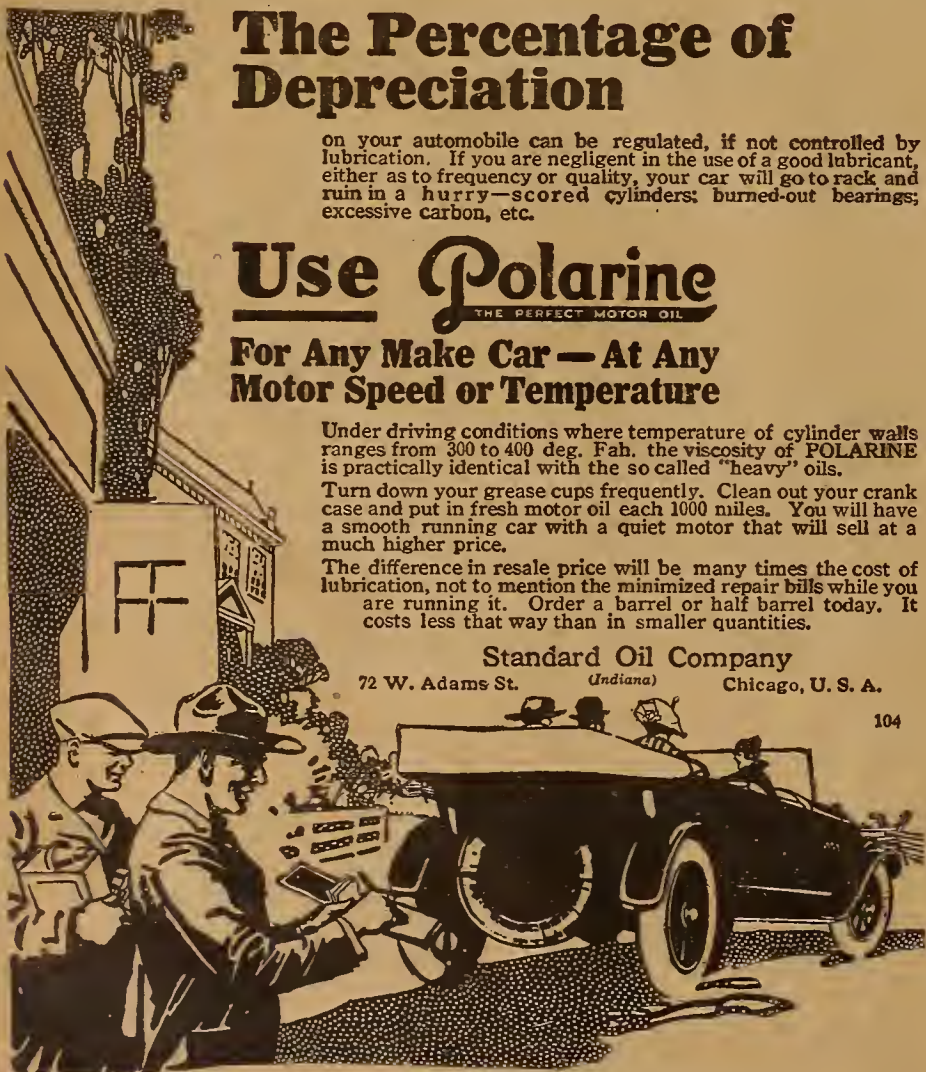
Turn down your grease cups frequently. Clean out your crank case and put in fresh motor oil each 1000 miles. You will have a smooth running car with a quiet motor that will sell at a much higher price.

The difference in resale price will be many times the cost of lubrication, not to mention the minimized repair bills while you are running it. Order a barrel or half barrel today. It costs less that way than in smaller quantities.

Standard Oil Company

72 W. Adams St. (Indiana) Chicago, U. S. A.

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Slow Starvation

Envoys Tell of Terror That Grips Europe

By JOHN SNURE



WASHINGTON, D. C.,
May 21, 1917.

THE horrors of war" is an old expression which is coming to take on a new meaning. We are getting used to picking up our newspapers and magazines and reading censored reports of grim things from the battle fields. We are not deeply stirred by accounts of the wiping out of a regiment or the practical obliteration of a brigade. If the dispatches say that a hundred thousand men have been killed and wounded, we do not grow much more than moderately interested. There are worse things than open battle. One of them is famine and slow starvation.

The mind cannot grasp the horror of great populations comprising millions of people suffering from lack of food. Nor is it easy for a person in this land of plenty to conceive a fear that grips nations, even though they may not be hungry to-day, when they sense the danger that in a little while they may be in the miseries of famine.

Americans have been singularly aloof from the terrors of the European war. But the visit of the British and French commissions has served in some measure to make them see more clearly what it all means. One thing which has been strongly emphasized by the visiting commissioners is that the countries at war with Germany must have food. Much has been said about lack of enough food in Germany, and there is no doubt that this lack will hamper and weaken Germany. But all the nations in the war, excepting the United States and Japan, are also extremely short of foodstuffs and other necessities, especially fuel.

The menacing nature of this shortage has hitherto not been appreciated by Americans. It remained for the foreign envoys to make this country understand how serious the conditions are.

One reason why this country has not understood the facts before is that it did not know the extent to which German submarines were sinking English, allied, and neutral shipping. It has become clear that the submarine is proving so dangerous and deadly a weapon that the allied governments are deeply worried over it.

The problem which the British and French commissions have practically put up to this country is this: Produce enough foodstuffs for our needs in addition to your own; furnish thousands of ships to help transport foodstuffs and other supplies, and help us find a way to defeat the submarine campaign and keep the seas open to commerce.

SO SHORT are the food stocks in Europe, that if the war were to end this summer it would be a year or more before the shortage could be made up and conditions brought back to those where demands for American food supplies were normal. In other words, the farmers and food producers of the United States, so far as can be discerned here, may reasonably expect heavy demand for foodstuffs for export this year whether the war goes on or not. They may expect it next year even if peace comes. And if the war goes on indefinitely, there will be demand for more than this country can produce.

As one American food authority put it, after studying the situation abroad personally and after talking with the experts sent to this country by the allied governments, "The ribs of the European civilian are bare and the European belt is dangerously close to the backbone."

He went on to say that every one of the great powers in the war, Germany and all the rest, had blundered in handling the food problem.

England has not managed the food problem wisely. Germany's method of having a food director and rationing has not worked well, and her people are getting far less than their physical needs.

To understand in part what is the trouble with England and her allies and why they are crying out to America for more food and ships to carry food, there are a good many things to be considered. The unexpected destruction of shipping in such large proportions by

the German submarines is to a large extent responsible. But it is by no means wholly so. For the first two years of the war, and until a

few months ago, there was little curtailment of foodstuffs in the average English family. The English are heavy eaters. The climate calls for plenty of food. And the average English family hasn't had a meager diet even with war raging. An illustration of this is the fact that German prisoners in England have three liberal meals a day, and even then some of the British have insisted their prisoners ought to be better fed. Like ourselves, the English have been prodigal of their food and haven't until lately seen the need of strictly conserving the supply. In addition to this disposition to wastefulness, the English have had to divert large supplies of foodstuffs to France and Italy, as well as to help out Belgium.

The French and Italians live much more sparingly in normal times than the British. But they have been hampered by the enormous drafts of men for the army and consequent interference with agriculture, by lack of enough shipping, and other causes.

THE demands for the food supply of the armies, which must be well fed if they are to fight well and keep in health, are staggering. The situation would be troublesome enough if shipping were unrestricted, but with freight ships sunk daily and with no large stores of food provided ahead, it is no wonder that there is a call to the United States to reach out a powerful hand. A constant and unending stream of grain, meat, and other foodstuffs must go to our allies in Europe.

In Germany the strict governmental regulations have failed, and it is estimated 24,000,000 industrial workers are going hungry. Now Germany is trying to accomplish by a system of educating her people on food problems some of the things the efforts at strict regulation have failed to accomplish.

It might be thought that in representing the food and shipping question as grave, the English and French envoys who have visited here have been moved by a purpose to get as much help from this side as possible. But it is to be remembered that King George has just called on the British people to cut their bread consumption one fourth, and that Baron Devonport, the food controller, is preparing a plan for the complete rationing of the United Kingdom. Moreover, this Government has advised through Herbert C. Hoover and other experts which bear out the idea of a critical food situation in Europe.

Wheat is the chief thing the American allies in Europe want. But they want corn also, and they want meat. And they aren't as particular about variety as they used to be. One effect of this war is likely to be to open up a much greater market for American corn. The Italians are beginning to use a great deal of corn meal, in the form of mush and bread, already. Other nations have held aloof from corn, but they are being converted to it. This recalls that when the American Red Cross workers in Poland a year or so ago wanted to help the starving Poles they brought in large supplies of corn from Roumania. The Poles had heard that some dread disease lurked in corn, and wouldn't use it. But things are changing. An expert of the British commission informed the writer that largely increasing demand for corn and its products might be expected from the United Kingdom.

The European food situation is related to the proposition which has been much discussed here, of a minimum price for the products of the American farm as a guarantee to the farmer that he will get a reasonable price even though he raises much larger crops than usual. Guarantee of a minimum price under existing conditions is wise policy. But at the same time the American farmer may rest well assured that European conditions are such that he need have no fear this year of not getting a good price for his staples, and especially for his grains and his live stock.



Keep Garden Game Going

By F. W. Orr

I FIND I can get practically as much again from the same-sized garden as I did some years ago. Now when I plan my garden plot I lay it out on paper.

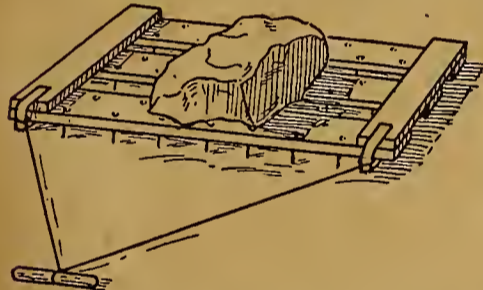
When doing his planning I consider the date when each kind of garden "sass" matures, its nature of growth—whether spreading, short, or tall—and which kinds will allow interplanting with a later maturing crop. Another important point is to plant the low-growing stuff where it will not be too much shaded by the taller growing crops.

Many gardeners think that when the first of June arrives their garden planting is finished. One of the best producing gardens I ever planted in a Northern State, every seed went into the ground early in June. Much of the stuff planted late in May and early June overtook the slow-growing stunted plants which had to fight for their lives during unfavorable weather earlier in the season.

Save Your Back

By Leo Matthews

LAST summer I had the pleasure of seeing one of the neatest and cleanest home gardens I ever saw. All vegetables were planted in straight rows an exact distance apart. Not a weed was in sight. I was at a loss to know how a garden could be kept so until one day I saw the owner pulling a small homemade hand harrow up and down the rows. It was only a few boards nailed



together, with spikes for teeth. Being less than two feet wide, it went nicely between the rows, and when weighted down made a perfect mulch and destroyed all weeds.

How much easier it would be to let the children pull a harrow like this up and down your garden rows once a week, than to spend a half-day hoeing. After the soil is once put into first-rate condition, a wheel hoe or garden harrow will keep it free from weeds without much hand weeding.

Barring Out the Bugs

By R. E. Rogers

FOR several years past we have given up trying to control the striped cucumber beetle by the use of poisoned spray, tobacco dust, insect powder, etc. In place of these I use common mosquito netting a few inches larger than the cucumber and melon hill, raising the netting two or three inches above the ground by means of four or five stakes stuck in the hill. The edge of the netting is carefully covered with soil. The bugs can come and look but cannot eat. After the vines get a good start and develop toughness, the netting is removed and saved, and can be thus used several years.

Good Garden Protector

By T. B. Baldwin



THE best device I have ever found for scaring away English sparrows, blackbirds, and other feathered marauders of cherries, garden vegetables, etc., is made from a 2x4-inch scantling 7 or 8 feet long, with one end sharpened. Nail two strips of 1x3-inch stuff 3 1/2 feet long to the post as shown in the drawing. Suspend eight tin disks, such as the tops of lard pails or from similar containers, by wires from the cross arms, just near enough together for the edges to touch. The disks will work better and swing easier

if suspended by pieces of small brass chain, such as is sold by the yard in hardware stores. If wire is used, make a link in each hanger so they will not be rigid, but loose enough to permit the disks to sway freely in the breeze.

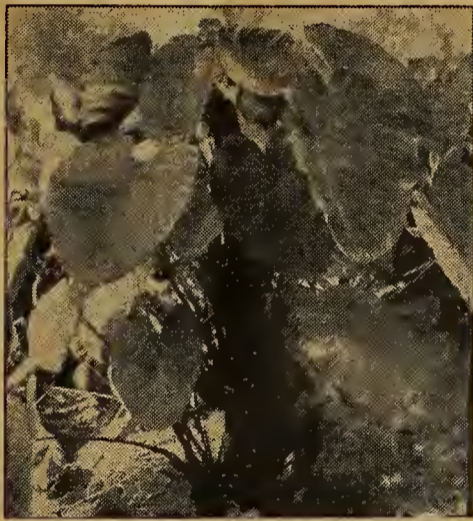
To be most effective, there must be enough of these devices to keep the racket and reflections coming from different directions.

The jangling of the disks as their edges strike together and the reflection of the bright tin in the sun thoroughly frighten all kinds of birds. The use of this device I have found very effective in protecting lettuce, mustard, and like tender vegetables from English sparrows and in scaring blackbirds away from young corn in the early spring. It also keeps mocking birds from destroying my peaches and grapes during the summer.

A Competitor of King "Spud"

By J. A. Stewart

I HAVE been making a table test of the potato substitute—the dasheen—that is threatening to give King "Spud" a race in this particular field of food products. This foreign vegetable has



The dasheen grows like a husky flowering plant, and is decorative

had some attention for a few years in this country, but it is still comparatively a stranger to most palates.

The history of the dasheen gives China as its original home, it being imported first to the West Indies and later found its way to southern United States, where it gives promise of making a close competitor to the Irish potato.

A field of growing dasheens looks like a patch of elephant's-ear, or caladium. The edible portions are known as corns, which sometimes weigh as high as six or seven pounds each. The skin of the corns is stronger and more resistant to disease than that of the potato, and the composition of them has been found to be considerably higher in protein content and less watery than potatoes.

In taste it is delicate and by some considered more pleasing in flavor than the potato. In certain stages of growth the tender shoots and branches are sometimes used as substitutes for celery and other greens.

The dasheen can be baked, boiled,



These near potatoes look good with real "spuds" 80 cents a peck

scalloped, mashed, fried, creamed, candied, and stuffed—in fact, can be utilized in any way the potato is commonly used for the table.

The dasheen being a native of a warm climate, its growth will be confined to the southern portion of our country, but on account of its productiveness after it has become established the price should not exceed that commonly charged for potatoes. But at present the price is considerably higher.

How Culture Counts

By B. F. W. Thorpe

AMATEUR gardeners by the thousands are now realizing how small a part of a successful garden is the planting thereof. Making sure that every inch of soil is thoroughly fitted and pulverized before the seed goes in is of the greatest importance in winning the battle against the weeds later on. Good, well-adapted tools are another invaluable aid to the required after-planting culture. Even with a small garden of 40 or 50 feet breadth by 100 to 200 feet length, a good wheel-hoe outfit, including planting and fertilizing attachments, will save much time and help insure good culture.

The real secret of keeping a garden well tilled is getting the start, and keeping the start, of the weed hosts. Better yet, the same frequent intensive stirring of the soil is the very best insurance against loss of soil moisture without which our earlier labor is largely lost.

Big Yield from Limas

By M. R. Conover

LAST summer I was much impressed by the unusually heavy yield of lima beans that my neighbor in Monmouth County, New Jersey, secured throughout the season by making use of a wire trellis as a support for his limas instead of poles. The wire supports were constructed by making use of substantial posts set in the ground, which after being set were six feet high and about eight feet apart. Near the top of these posts wire was stretched from post to post, also through the middle, and about eight inches from the ground. Upon these horizontal wires strong twine was stretched from top to bottom so that the climbing limas could climb from wire to wire and in this way the greatest possible surface of the beans was presented to the light and air. This plan of planting also allowed the vines to have a greater area for feeding than when planted in hills. The plants were thinned to one plant every seven inches in the row, and they can be planted on each side of the wires if desired.



Trellising has advantages over paling for limas

Another advantage is in the picking of the beans, as one can have easy access to all the beans without having to injure the vines as is the case when the vines are thickly grouped on the poles. In planting it is better to have the rows run north and south.

Borers, Asphaltum, Chickens

By S. Haigh

I HAVE read with interest the remarks in FARM AND FIRESIDE about putting asphaltum on the base of peach trees as a treatment for borers. One of our horticultural commissioners here in California says that some trees have been injured by asphaltum, but he believes this was due to the use of gasoline in the asphaltum to make it more liquid. Now the practice is to use nothing but asphaltum applied hot.

Personally, I find a flock of several hundred chickens will keep the borers cleaned out better than anything we can apply. We have six hundred ranging in the orchard, and they are busy picking off every living thing as high as they can reach. Thus far we have never found in any one season more than three borers in all the orchard, while our neighbors on the other side of the fence find hundreds every year, but they keep their chickens yarded.

THE large horse-cultivated garden gives most economic production, but the kitchen gardenette, planted and tended during odd minutes, is important too.

FILL up the gaps in your gardens with late-maturing plants like celery, late cabbage, beets for canning, turnips, fall radishes, lettuce, etc.



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31x3 1/2	10.55	11.60	2.75
32x3 1/2	11.50	12.95	2.90
34x3 1/2	12.15	13.35	3.05
31x4	14.75	16.60	3.50
32x4	15.05	16.85	3.60
33x4	15.75	17.20	3.65
34x4	16.10	17.55	3.75
35x4	17.00	18.60	3.85
36x4	17.20	18.65	3.95
34x4 1/2	21.65	23.65	4.55
35x4 1/2	22.70	24.70	4.65
36x4 1/2	23.05	25.15	4.75
37x4 1/2	23.95	26.10	4.95
35x5	24.90	27.25	5.40
36x5	27.10	29.60	5.65
37x5	26.40	28.85	5.80

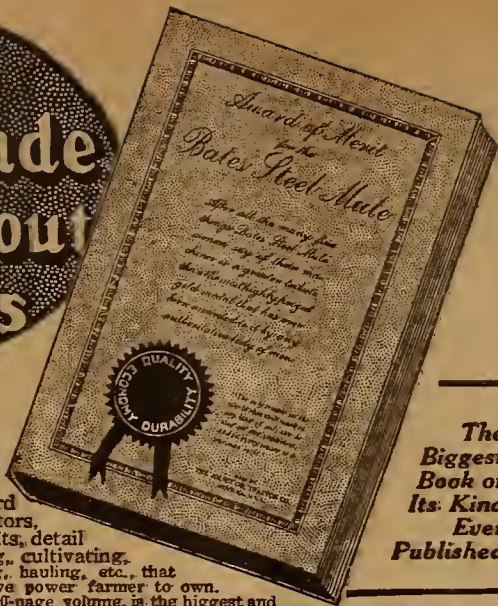
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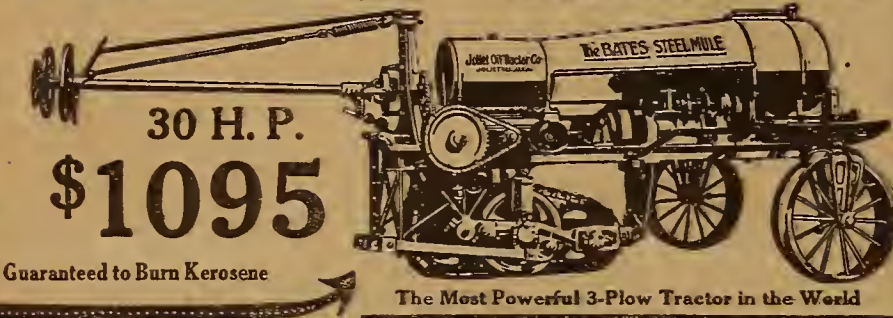


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Live Stock

To Hold Horse's Mane

By Robert H. Birlingmair

"BE SURE to keep the horses' manes out from under their collars" was the injunction I received from my father many times, and also from other men for whom I drove horses. I always tried to do so, but the heavy-maned horses would get their manes under their collars in spite of all I could do, and sore shoulders were sure to result. This was true until I found a better way.

My father's way was to throw the mane over the bridle checks as he hitched up. This did fairly well sometimes, but sometimes the mane got under the collar anyway. And if it got under the collar it made sore shoulders, even if one did stop and take it out every two or three rounds.

One summer I began working for a farmer in another part of the State. He had a different way of solving this problem. When he harnessed a horse with a moderately long mane, he took it out from under the collar and laid it back over the collar and buckled the hame over it so as to hold it firmly between the collar and hame. He did not draw the mane tight, but left a little slack so that the slight movements of the collar would not pull on it. That was all the attention the mane needed that day, and it never got under the collar, not even a few stray hairs.

crative supplement to the dairy industry.

To prevent tuberculosis, all milk and milk products should be cooked before being fed to hogs. To control hog cholera, use sanitary precautions and anti-hog-cholera serum treatment. Give your hogs every chance to become meat.

The hog is also a large factor in cheapening the production of beef. Hogs are placed in the cattle feed lots to utilize the corn and other feeds the cattle have failed to digest and which otherwise would be wasted. Hogs following steers in many cases have increased the profit per steer by from \$6 to \$9.

Hogs should not be allowed to follow dairy cattle unless the cattle are tuberculin-tested.

Disease, such as cholera, has been taking a smaller toll the last season than in recent years. More pure-bred and high-grade hogs are available than ever before. Prices of hogs are now past the 16-cent level and the demand for pork both for home consumption and for export is very keen.

All of these things mean that the farmer who does not raise hogs is losing a chance to increase the supply of pork and thus serve the country and at the same time expand a profitable phase of farming.

Unruly Horse Easily Led

By W. C. Howdle



I WILL describe a plan I have found to be excellent for leading unruly horses. Tie a ring in halter of horse to be lead. Then take a half-inch rope

about 20 feet long, and having tied one end of the rope to the halter, run the other around rear axle, then back through the ring in halter, and then to the wagon seat or to anyone in the wagon.

With this you can draw the horse in or let him out without danger of upsetting the rig. In an emergency you can let go of the rope and free the animal entirely.

Mares at Foaling Time

A YEAR'S effort may be lost by neglecting brood mares at foaling time. In view of the time which it takes to produce a foal, one can ill afford not to give the necessary attention to the animals. A little care for the first few nights will often save the entire year's work.

In-foal mares may be worked to within two or three days of foaling. Should work cease before that time, rations should be decreased materially. Rations should consist of bran, oats, and other laxative foods. In-foal mares should be provided with box stalls, if possible, sometime before they foal. These stalls should be kept clean and properly disinfected.

As soon after birth as possible the foal's navel should be tied and disinfected with iodine or some other good disinfectant. Careful attention should be given to see that foal's digestive apparatus and kidneys are in working order within twenty-four hours after birth.

Mares, after foaling, should be given water, not too cold and not in too large quantity. The ration for two or three days should be comparatively light, and similar in nature to that fed before foaling. After normal conditions seem to have been established the ration may be increased.

Raising More Hogs

By John White

THE meat supply of the country can be increased more quickly by the "hog route" than by any other. The country's need to augment its supply is great, but prevailing high prices alone should be sufficient inducement to farmers to raise more hogs. The prospect of success never was brighter. The high prices ruling in all markets show that the demand for pork is in excess of the supply.

Hogs fit into the modern scheme of farming on nearly every farm, and are one of the most important animals to raise both for meat and for money. They require less labor, less equipment, and less capital, make greater gains per hundred pounds of concentrates fed, reproduce themselves faster and in greater numbers, and give a quicker "turn-over" of money than any other animal except poultry. Farmers of the South and West, particularly, have awakened to the merits of the hog, and are rapidly increasing their output of pork and their bank accounts.

The hog has no rival as a consumer of by-products and numerous unmarketable materials which but for him might be wasted. Kitchen refuse, not only from farms but also from hotels and restaurants, when cooked before being used, makes an excellent feed for hogs.

The value of skim milk as a hog feed is known on every farm, though not always fully appreciated. In the neighborhood of many large dairies pork production is a very prominent and lu-

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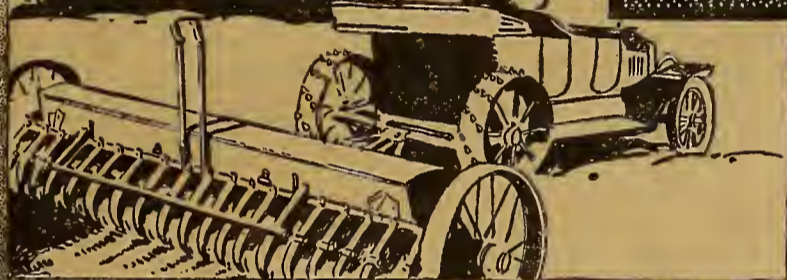
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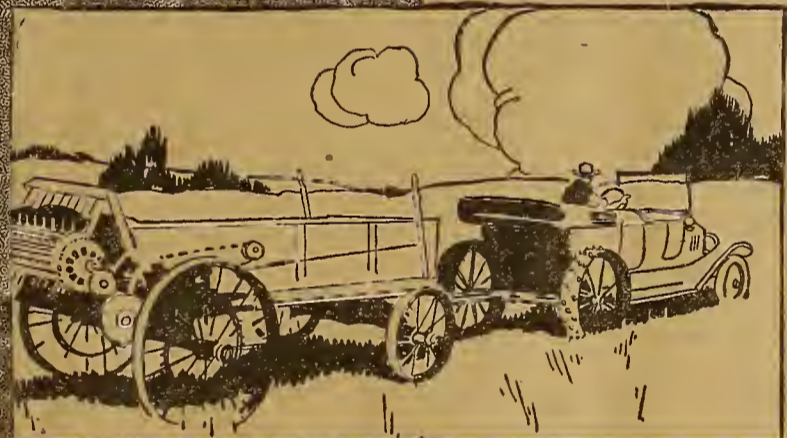
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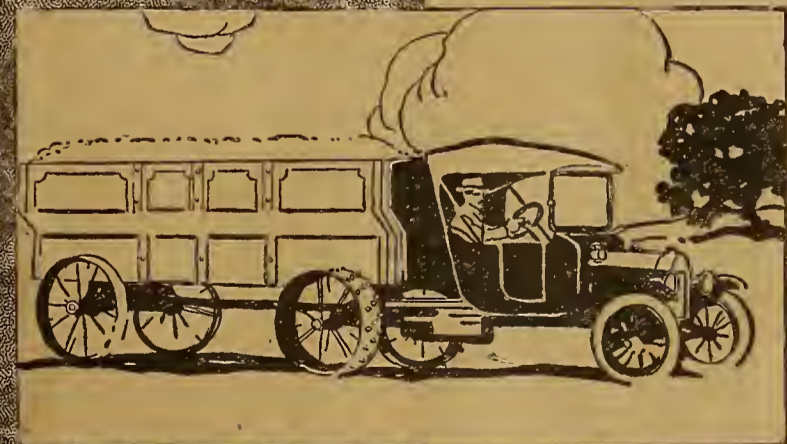
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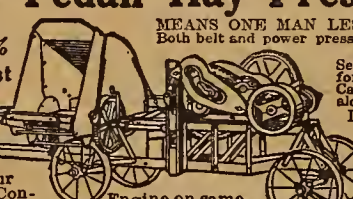
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Crops and Soils

Big Crop of Soy Beans Needed
By John Coleman

ALTHOUGH many persons have planned to grow a far larger crop of soy beans in 1917 than ever before, they should now greatly increase the acreage of this crop. Because of the war soy beans will be in demand as a feeding concentrate, for oil and for human food in addition to its normal use as a forage crop.

Experiments have shown soy-bean meal to have about the same feeding value as cottonseed meal; and cottonseed meal will probably be so high next fall that it cannot be afforded for feeding. There is sound reason, then, for anticipating a great demand on the crop for use as a feeding concentrate.

Because of the present shortage of fats and oils throughout the world, due to war consumption and low production in Europe, all available sources of these necessary materials will presently be utilized. Although the soy bean is not considered a source for oil in the Middle West, in Virginia and North Carolina the threshed crop is sold mainly to the cotton-oil mills, where the oil is expressed and the residue, or cake, ground into meal. Indeed, soy-bean seed is actually second only to cottonseed as a source of vegetable oils. It now seems certain that the demand for soy-bean oil will soon become greater than can be supplied by the Eastern crop.

During the war, when foodstuffs of all kinds will continually diminish, many unusual kinds of human food will be brought into use. The soy bean is one of the crops which will be utilized. Already several manufacturers in the East have successfully substituted soy beans for navy beans in baked pork and beans. Indeed, the demand in the East for soy beans for packing and for planting has been so great since last fall that the cotton-oil mills have practically ceased crushing the seed and are turning them to the planters and packers. One mill which last fall bought 10,000 bushels of seed, and planned to crush at least 100,000 bushels, did not crush any seed, but disposed of the whole stock for food and planting. Only the yellow-seeded varieties are used for food.

With the war-time demand on the soy-bean crop for an animal concentrate, for human food, and for oil, in addition to the normal demand for forage and seed for planting, there is no doubt that high prices will be maintained.

Soy beans are at present selling at \$3.50 to \$4 a bushel—at double the usual price—and farmers should not fail to plant the largest possible acreage. It will be a profitable and patriotic enterprise.

Millet a Catch Crop
By M. N. Harrison

IF ONE crop fails, there is usually time to plant a catch crop, and millet is such a crop. It is often successfully seeded as late as August 1st. Best results are obtained when it is planted three weeks later than the regular planting time.

The rate of seeding varies from 15 to 30 pounds an acre. Because the crop matures quickly and produces a medium amount of hay of a fair quality, millets have an important place in agriculture. Millet has an intensive root system and draws its food and water supply almost entirely from the surface foot of ground. This results in leaving the surface depleted in both plant food and moisture.

The average feeder prefers many other feeds to millet. Estimated roughly, each 100 pounds of millet hay contains about half as much protein as the same amount of alfalfa hay. Millet contains about the same amount of protein as common prairie hay, sometimes slightly more.

Hungarian millet is better adapted to humid conditions than the other varieties. The quality of hay produced by it is first-class.

German millet produces the most hay. It takes approximately two weeks longer to mature than common millet. The latter makes a finer and better quality of hay than the German millet.

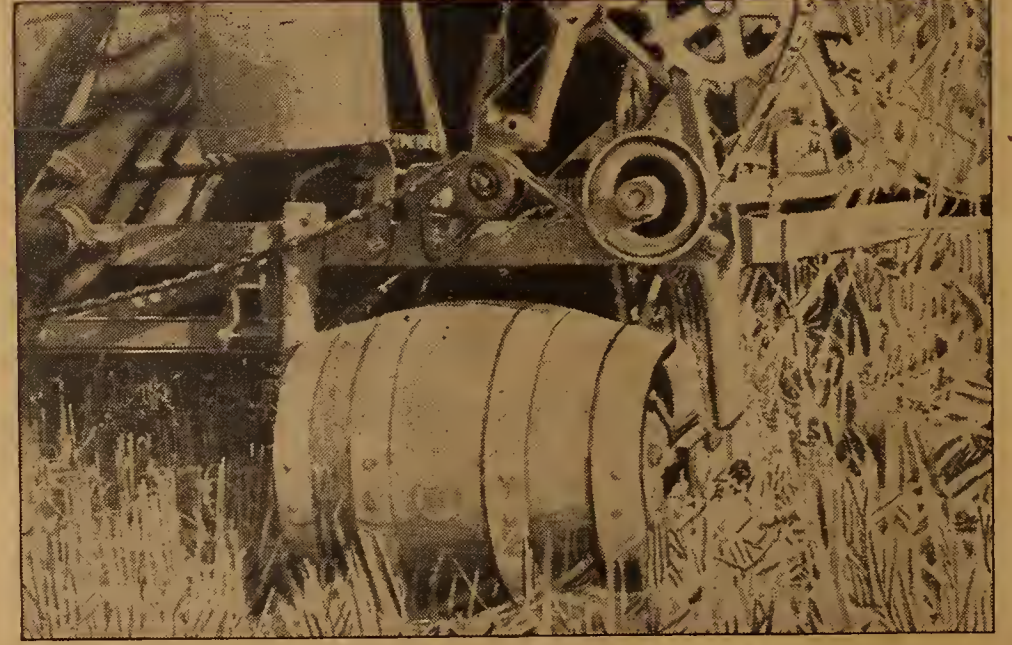
Commercial Plant-Feeding

ALL of us who have actively farmed know just what can be accomplished in speeding up plant growth by means of good rich farm manure. But when it comes to making use of the so-called commercial fertilizer, many a successful grower of crops who in the past has always depended on the natural fertility of his soil and animal manures finds it difficult to have much respect for a bag or two an acre of what looks to him like a mixture of sand and ashes.

Commercial fertilizers (complete) contain the identical kinds of plant-food elements that are plentifully found in rich virgin soil that has not been over-cropped. The fertilizer expert knows these elements on which plants mainly depend as nitrogen, phosphoric acid, and potash. Good stable manure is also rich in these three forms of plant food. Therefore, if we want a good complete commercial fertilizer, the mixture must contain material that is rich in nitrogen, phosphorus, and potash in forms that plants can readily use. If our soil has become poor in phosphorus but is still well supplied with nitrogen and potash, then we need buy only acid phosphate or some other phosphorus carrier. If we want to push some leafy crops as lettuce, rape, grass, or millet for forage, we may need only nitrate of soda, which is rich in nitrogen. Potatoes require soil rich in potash to make a heavy yield, so the big potato-growing centers want a commercial fertilizer strong in some form of potash. Most growers specializing in potatoes use potato fertilizers containing six to ten per cent of muriate or sulphate of potash, or a combination of these or other potash carriers.

A big spreaderful of badly leached stable manure may not contain any more real plant food than could be carried in a 12-quart bucket. In that case the balance of the load is valuable to act as a soil mulch and to loosen up the soil, but a 100-pound bag of high-grade complete commercial fertilizer may contain more real plant food than several spreader loads of poor stable manure.

This matter of feeding plants so as to get the most profitable crops from a less acreage is becoming a bigger problem every year as land increases in value and labor cost advances. The more farm owners study and experiment with commercial fertilizers, the better will they come to understand the needs of growing plants. They will also be led to make the most of all kinds of animal manures and green manure crops.



This odd picture shows a keg roller used to lighten draft when a binder must work in soft ground. A gas engine drives the harvesting mechanism

Good-Health Talks

By DR. DAVID E. SPAHR

CHLOASMA and liver spots are irregularly shaped discolorations of the skin in shades of yellow, brown or black, exhibited in all parts of the skin, but chiefly on the face. The most harmless treatment would be tincture of iodine applied at night, lightly, until the spots get sore and disappear. Or some form of iodine ointment could be used.

The proper thing is to look after the condition of the organ that is producing the trouble, and if this is found to be the liver the diet should be regulated.

All strong soups, rich-made dishes of any kind, hot bread and biscuits, red meats, butter, sugar, sweets, cream, cheese, nuts, pies, pastry, malt legumes, sweet wines, etc., should be discontinued, and plain vegetable soups, buttermilk, and fruit juices substituted. Special care should be taken that plenty of fresh air and out-of-door exercise be indulged in.

Ringling in Ears

What is the cause of ringling in the ears? I have it so badly that I cannot sleep at night. It sounds like crickets. I am not troubled with catarrh.
Mrs. P. B., Indiana.

HAVE your ears examined for impacted cerumen, or some obstruction to the Eustachian tube. It may be due to various causes—anæmia, disturbances of digestion, or neurasthenia. You are probably just nervous, as it occurs mostly at night.

Dyspepsia

My mother has stomach trouble—so much gas after eating. She cannot eat meat.
B. W., Missouri.

HAVE her take from two to five soda mint tablets in hot water immediately after meals, and two lapactic pills at night for her bowels, and eat a generous diet of the things that agree with her.

Sciatica

Rheumatism causes much pain in my leg. The leg is so stiff I can hardly bend it.
Mrs. J. E. H., California.

TAKE a five-grain capsule of salol and phenacetin every three hours, and rub your leg good with the old-fashioned heartshorn liniment.

For Falling Hair

I have dandruff and an itchy scalp and my hair is coming out in handfuls. What shall I do?
E. H. S., Texas.

TRY the following: Tinct. cantharides, two drams; tinct. capsicum, fifteen minims; spts. vin. rect., one and one-half ounces; ad. aqua ros., five ounces. Mix, and rub into scalp every night.

Prickly Heat

I have some kind of breaking out on my face, neck, and arms. It comes in red spots, and my face turns red as blood. It burns very badly at times. My age is seventeen, and, at best, my health is very poor.
B. Z., Texas.

YOU should use cooling lotions, such as the following: Liq. plumbi. subacet. dil. (1/20), aqua rosea, aa. 2 ounces. Bathe with this during the attack and when you feel it coming on.

Rough Skin

Lately my face has been rough, and when I rub it the dry skin falls like dandruff. How can I remedy this? How long is whooping cough contagious?
Mrs. P. C. B., Virginia.

FOR the roughness of your face I would advise you to use glycerin and rose water, bathing it well as often as necessary.

Whooping cough contagion lasts from six to nine weeks.

Insomnia

My husband is a very temperate man, a very light eater, but is very thin and anæmic, and sleeps but three hours at night. He is sore across his abdomen and has gas on his stomach. He has lived in Minnesota and Colorado, and felt better there.
Mrs. O. F. J., Oregon.

PERHAPS the climate of Oregon does not agree with him. Have him drink a large bowl of rich soup just before going to bed, and that may cause him to sleep. If not, after a few trials, he might get sodium bromide, one-half ounce; elixir saccharated pepsin, three ounces. Mix and let him take a teaspoonful every two hours at night until he sleeps.

SAVE THE FRUIT CROP

We said this **LAST YEAR**—
We say it again

This is a year for thrift and service. We must feed not only our own people, but also millions in Europe. The frightful waste of fruit is a national reproach. Help stop this unpardonable extravagance. The fruit we waste would feed Belgium.

THE United States Government urges preserving as a home duty. Preserved fruits are energizing and nourishing. They vary your menus. They reduce the cost of your table.

America's canning and preserving industries are models for the world. Their products are pure, appetizing and wholesome. Support them.

If you preserve at home, put up more fruit than ever before. Get jars and glasses, bottles and crocks ready to save the fruit crop. Put away dried vegetables. The American housewife who practices thrift places herself in the ranks of those who serve their country.

You can show your thrift in no more convincing way than by combating the national tendency to squander this country's wonderful fruit crop. Whether you buy preserved fruits from your grocer or preserve at home you perform a service to your own family and to the Nation.

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Domino Granulated Sugar is sold in convenient-sized bags and cartons

The increased cost of preserving because of the higher price of sugar is less than the increased cost of most other foods.

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For the man who owns an automobile and the man who grows wheat, these two buildings will pay for themselves in one year. **THE GARAGE WILL PAY FOR ITSELF** in what it saves by protecting the motor car from the weather, from theft, from accumulating dust and filth. **THE GRAIN BIN WILL PAY FOR ITSELF** by providing storage room after harvest, enabling you to hold your grain, without deterioration, until the market is best.

BOTH of these serviceable, home-built, inexpensive buildings are made of wood, which, more than any other material, is cool in summer, warm in winter, dry all the time, so it will not cause metal to rust, leather to rot, nor wheat to sweat and mold. Furthermore, these buildings are made of the best and most economical wood—

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Take nobody's word. Try it for 90 days yourself. Then if it isn't just what I claim—ship it right back. I'll pay the freight both ways and refund your money. Its clean, perfect skimming will astonish you. You will marvel at the ease with which you can operate and clean it. Every part is rounded—no sharp corners for dirt to gather. It runs true in perfect alignment—always—because one casting—the gear case—supports all the gear shaft and both bowl-spindle bearings. The entire gearing has but two high-carbon steel shafts—equipped with long, perfect fitted bearings. All working parts run in constant oil spray. Separating discs separate entirely from each other for washing. Every drop of milk gets full skimming force of the bowl. Milk is so distributed that each disc gets its full share to skim.

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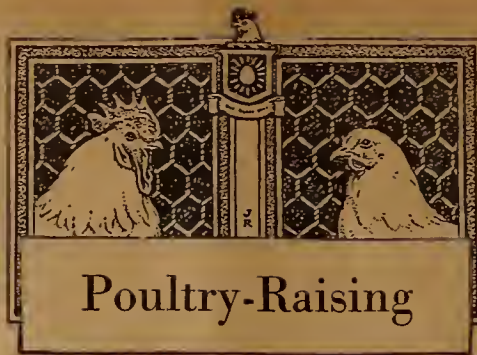
Read This!

Gentlemen: Your Galloway Sanitary Cream Separator which I ordered of you is much easier running and more easily cleaned than the separators which I had just worn out. And besides we have made a saving of \$22. I would not exchange it for any of the high priced separators on the market.—Ebb, F. Louthan, R. 6, Carthage, Mo.

Let me give you the name of some one near you where you can see the Galloway

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Poultry-Raising

Grundy, U. S. Poultry Expert

By B. F. W. Thorpe

MANY FARM AND FIRESIDE readers will be glad to know something of the recent experiences of Mr. Fred Grundy, a long-time contributor to these columns. Of late years Mr. Grundy has spent considerable time away from his Illinois home, traveling in the interest of the U. S. Department of Agriculture. The past winter he spent in California. Here are some of Mr. Grundy's comments on the operation of a poultry ranch he visited:

"This young poultryman had a nice three-acre ranch with 892 White Leghorns of various ages. He was well fixed for houses and yards, and had a fair outfit of appliances, but it was very apparent that his heart was not in the work. When he took charge he had visions of smooth sailing and large profits right from the start, but the flock had disappointed him so he had practically laid down on the job. My first task was to show him that he did not have the kind of stock to make money with. His flock needed a thorough culling and ridding of old and undersized birds the first thing. We set about it at once, and threw out 286 practically useless fowls, 32 of them being cocks and cockerels which had been kept under the mistaken idea that they were necessary to encourage laying. All this cull stock was placed in a small pen, well fed nine days, and marketed.

"He then had left 606 hens and pullets that were very fair birds and could be expected to make good layers. He had plenty of alfalfa for green food, but was feeding it just as mowed, and wasting more than half. A power feed cutter was installed and the alfalfa run through it, cutting it to quarter-inch lengths, and as much of this as the fowls would eat was fed daily in troughs that prevented wastage. A good prepared commercial food, consisting of wheat, barley, oats, kafir corn, and meat scrap, all ground together, was used as food, being kept where the fowls had access to it at all times.

"In fifteen days the yield of eggs had increased from an average of five dozen to an average of 35 dozen a day, and they brought 46 to 50 cents a dozen in the guaranteed grade. These hens and pullets laid steadily all winter, and as they are in the pink of condition they will keep it up well into summer. The price paid for eggs has fallen considerably, yet the flock is still a good paying proposition.

"It will be noted that putting this flock on a paying basis was a comparatively simple matter, yet some of the chief essentials in making a flock a paying flock are those often overlooked or disregarded."

Crude Oil Still Favored

By F. W. Orr

CRUDE oil continues to stand well to the front as a poultry-mite eradicator because of its cheapness and its ease of application. I find that mites must be fought on roosts, brooder houses and

coops, and on walls adjacent to where the fowls sleep, as well as in the nests. The mites hide during the day and prey on the birds at night and when on the nest.

These pests are so small as to be seen with difficulty, but when plentiful they swarm on the sleeping and setting birds by thousands, and are voracious blood suckers. In badly infested buildings the entire interior of the building, including roosts, floor, walls, nests, and other furnishings, should be thoroughly saturated by spraying with four parts crude petroleum and one part kerosene oil. Successive sprayings, given a month apart after the first, will make a surer job, particularly if the poultry houses are thoroughly cleaned and the furnishings removed before the spraying is done. The crude petroleum is an effective remedy for scaly leg and other skin diseases which affect poultry.

JUST because discouraging hatches have resulted from careful handling of incubators, and even from hen hatching, do not get a grouch. Plan to make sure of more vigorous breeding stock next season. Keep the birds scratching and exercising steadily from fall to the hatching season, provide green feed, and hope and persevere.

Cafeteria Feeding System

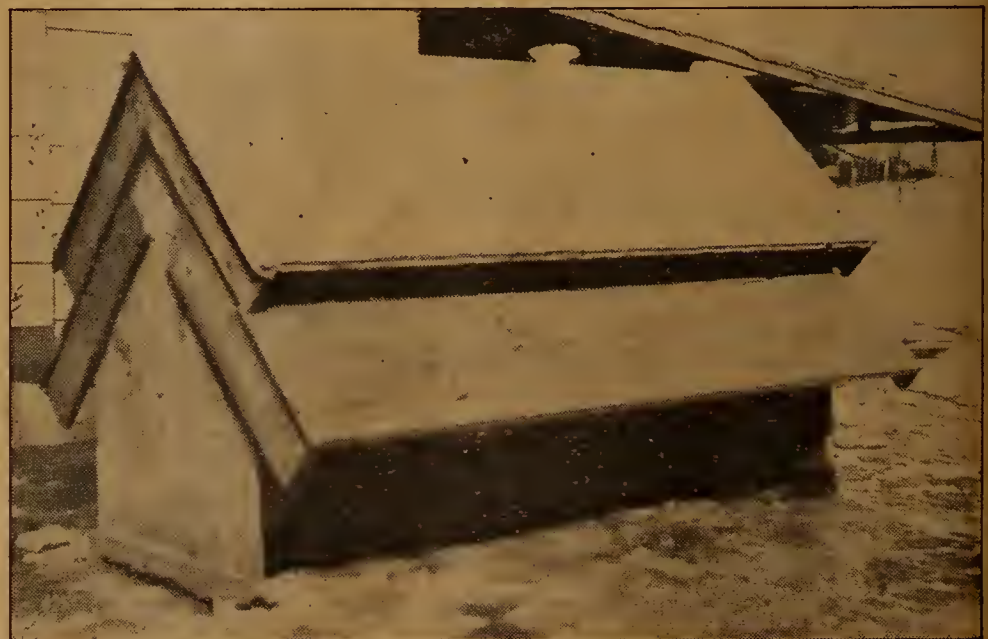
By E. G. Squire

PATTERNING after the cafeteria system for feeding people, more and more poultry keepers are finding that chickens make good use of the "self-service" plan of eating when and what they wish and as much as they want. Not long ago I observed how Mr. Charles Laros makes use of two types of self-feeders, one for inside the house and one for outdoors. The inside feeder is hung on the wall about 18 inches above the floor, and is made of any size and length required. His feeders are made of 1x6-inch floor boards 12 feet long. Nine boards were used in making each feeder. His self-feeders are divided into as many compartments as there are feeds for the chickens. In one end of his self-feeders he has a compartment for a water vessel. The top of the feeder is covered with composition roofing in order to keep the rain out.

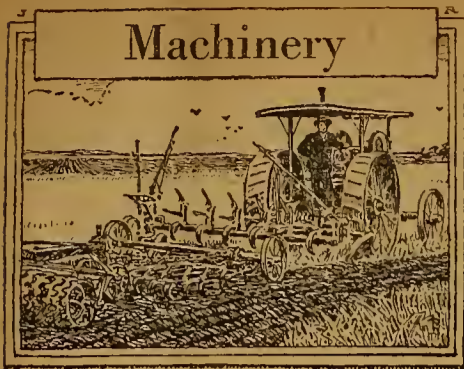
In these self-feeders Mr. Laros keeps a dry mash. He is now using the Cornell ration, and in addition to mash and scratch grain he feeds during the winter sprouted oats to his laying hens for their noon meal. He was troubled considerably by the oats molding while sprouting in mild weather, but by adding a teaspoonful of cresol to each two gallons of water in which the oats are soaked he has entirely overcome this trouble. For scratch grain he feeds his laying hens grain once a day—four quarts of corn and three quarts of wheat for each 100 hens. For additional green feed in the winter he raises mangels and cabbage. Last fall he seeded down the range to winter rye, and the chickens had green feed early in the spring. He also grows Swiss chard and lettuce for summer green feed.

The first feed given his young chicks is rolled oats containing a little charcoal and sand. They are fed lightly five times a day for the first week. At the end of that time the ration is changed to equal parts of cracked corn and cracked wheat. At six weeks of age they are fed whole wheat and corn in equal parts. Sour milk furnishes a part of the animal food in the ration.

Mr. Laros contends that no one need expect to succeed with poultry unless he is willing to work at both ends of the day with a lantern.



Self-feeders for outdoor use are a distinct help in getting results when poultry houses are hot and uncomfortable in summer



Blasting Stump Near House

By N. D. Rand

ONE afternoon last summer, while calling on a friend in a near-by town, I noticed that he had a workman engaged in digging around the roots of a large stump in front of his house. The man told me that he had been working on the stump all day, and that I could see what he had accomplished. In a very optimistic manner he observed that he thought he could get the stump out in a couple more days.

In a few minutes I was talking the matter over with my host. Yes, he knew dynamite would blow the stump out, but it was too near the house. "Quite true," I said, "but dynamite will help your man a whole lot in digging it out." He was very glad to know it could be done, and requested that I show him how. As I had made plans to take a trip on the morrow, I told him that I would leave tools, battery, etc., at his house on my way through town early in the morning, and that if his man could prepare the bore holes and have everything in readiness for me to set off the blast on my way back in the afternoon I would blow the dirt out from under the stump and it would then be an easy matter to cut off the roots.

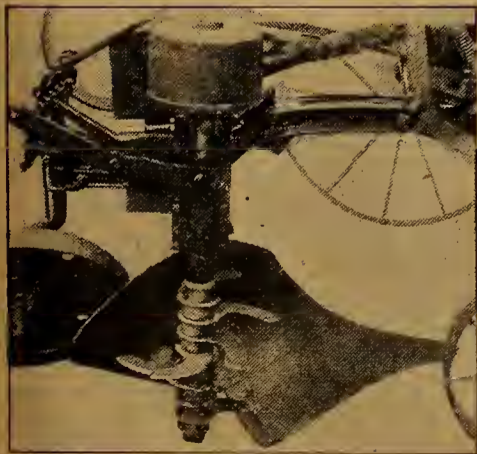
What digging had already been done on the stump was on the side farthest from the house. Taking advantage of this, I showed the man just where to bore the holes so that the charges could be located away from the roots and not under the stump, and in such a way that the dirt would be thrown out on the side away from the house. Then I told him to secure a number of heavy planks to be laid on the ground on the side of the stump nearest the house.

The next afternoon I found everything in readiness. Four holes were bored. In each of the two nearest the stump I loaded one-half stick of 20 per cent extra, and in each of the other two, one-half stick of 30 per cent straight, all primed with a No. 6 electric blasting cap. With the planks in place, and the shutters of the windows all closed, I hid around the corner of the building with the battery and fired the charge.

The result was just as expected. The soil under the stump was blown out and away from the house and the stump left suspended over the hole by the roots, which were now free and clear to be cut off with the exception of one root on the house side of the stump. However, the soil was loose around this root, and in a couple of minutes it was shoveled away and the root cut off. The workman told me he had put in only about an hour's work on that stump since I called on the previous afternoon.

New Tillage Device

ONE of the most interesting and promising of the machines for hastening seed-bed preparation is shown in the picture. The vertical rotor is equipped with knives which revolve at a high rate of speed when driven by a small gas engine mounted on the frame



The rotor attached to a sulky plow. Bearings are protected from dust

of the plow. This tillage device may be mounted on any standard make of sulky or gang plow, and in case a tractor is used the power can be taken directly from the tractor motor, thus doing away with the necessity of the small gas engine. Or for turning the rotor at only moderate speed it may be geared

to the land wheel of a horse-drawn plow.

The purpose of the machine is to put the soil in a condition ready to receive seed, thus doing away with harrowing and similar operations. The time required to put the device on a sulky plow or to take it off is about half an hour. A seeding and fertilizing attachment is also made for use with the rotor, whereby the crop may be put in the ground at the same time the land is plowed, a point that is useful when unfavorable conditions delay spring work.

Among points claimed for this new plow attachment is a 20 per cent better crop yield, caused by the better seed bed, a saving of time and labor, chopping up of weeds, and a uniform distribution of manure or fertilizer through the soil when such plant food is applied.

Barn vs. Field Stacking

By Leo Matthews

FOR several years a neighbor and myself have worked together in harvesting from 90 to 120 acres of hay. Occasionally we have stacked some of



The value of this stack of hay shrunk nearly \$30 worth in one season

this in the fields. By a study of our account books and observing the condition of the hay stacked in the field, although we knew there was some loss, we found that the loss far exceeded our estimates.

Labor for harvesting hay and putting it in the shed or mow costs approximately 75 cents a ton, while stacking by hand in the field costs approximately \$1.50 a ton. This greater cost is due to the fact that it requires practically as much help to stack, and on account of the hay being handled more and in smaller bunches, only about half as much could be put up in the same time.

Undoubtedly the greatest loss from stacking comes from weathering. Of course the amount of damage done to a stack depends upon several conditions: how well it was stacked, how well it settled before it was rained on, the length of time it stood, and severity of the season it went through.

With us, after a stack has gone through one winter, most of the ridge is rotted and the sides and ends must be sheared off the damaged portion, while the base, unless built on a platform, is musty because of absorbing dampness from the ground. We find on an average from one to two tons in every stack of 10 tons or over that are damaged so as to be unsalable.

Therefore, in a 10-ton stack the extra cost of stacking at 75 cents a ton would amount to \$7.50, while the loss from weathering, at ordinary prices for good hay, is from \$14 to \$28.

It can be seen from these figures that one season's loss would almost pay for enough lumber to cover the stack. It is certain that the man who makes considerable hay each year, and is now stacking it out in the weather, could save a good many dollars by building a hay shed. Two or three seasons' losses would easily pay for the shed.

EDITOR'S NOTE: While this is an interesting experience, the use of field hay stackers, sweep rakes, and other labor-saving hay machinery has apparently been overlooked. Stacking by machinery in the field is usually cheaper than putting hay into a barn some distance from the field.

Cost of Grinding Limestone

PERSONS who have become interested in the use of lime for improving their soils will welcome definite figures on the cost of grinding limestone at home by means of portable crushers. Counting the wages of an engineer, rental of engine, wages of three men, and depreciation of the crusher, the cost of ground limestone in 25-ton lots is \$1.25 a ton. Of this amount 50 cents a ton is the expense for quarrying, and 75 cents for grinding. These figures were obtained from men using portable crushers in Missouri under rather favorable conditions.

This Car Stays New

IN THE latest Mitchells, every vital part has 100 per cent over-strength. We have doubled our margins of safety.

The safety parts are oversize. The driving parts are built of Chrome-Vanadium. The gears are tested for 50,000 pounds per tooth. The springs are tested, so that in two years not a single rear spring has broken.

The result is a lifetime car. It has proved itself capable of 200,000 miles of service.

Rare Features

The bodies are built in our own plant, to last as long as the car. The finish coats are fixed by heat—in enormous ovens—to make the finish enduring.

We use a rare-grade leather.

There are also 31 features—like a power tire pump—which nearly all cars omit. You have never seen a car so complete.

No Extra Cost

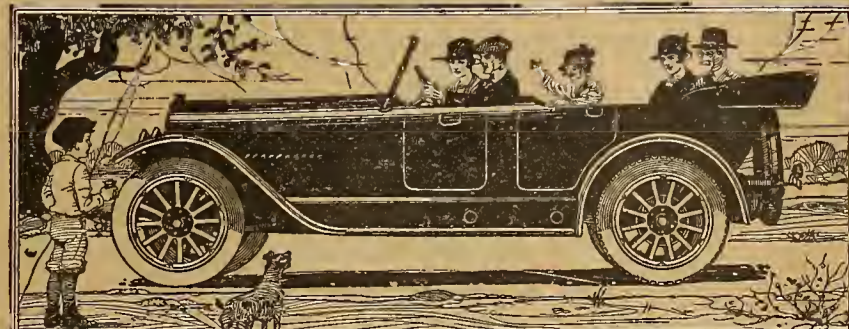
These extras cost us on this year's output about \$4,000,000. But note that Mitchells undersell most cars without these extras.

That fact is due to factory efficiency. Nowhere else could cars like these be built at the Mitchell cost.

John W. Bate, the efficiency expert, built and equipped this entire plant. He has spent years on the plant, and millions of dollars, to produce this one type economically. What he saves in this way pays for these added attractions.

You will want this over-strength, these extra features and this added beauty. A car without them will seem lacking when you see these latest Mitchells. If you do not know the nearest Mitchell dealer, ask us for his name.

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.



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SIXES

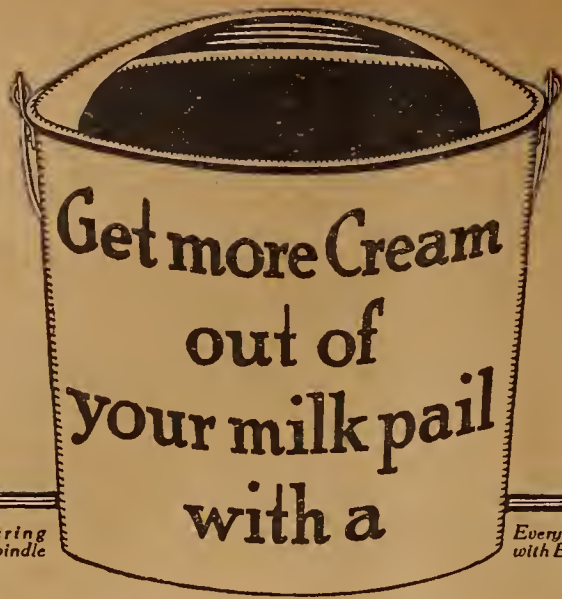
TWO SIZES

Mitchell—a roomy 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

\$1460 F.O.B. Racine
Also new Club Roadster

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Also 6 styles of enclosed and convertible bodies.



Get more Cream
out of
your milk pail
with a

Has self-centering
bowl; detached spindle

Every De Laval equipped
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NEW DE LAVAL CREAM SEPARATOR

THESE are the days when you are getting more milk in the pail, and with butter-fat at its present high price you want to be dead sure that you are getting all the cream out of the pail.

You certainly can't afford to feed butter-fat to the calves and pigs at from 30 to 40 cents a pound.

All sorts of "claims" are made for various cream separators, but what you are looking for is "proof."

Here is the most convincing kind of proof that the De Laval is the cleanest skimming machine:

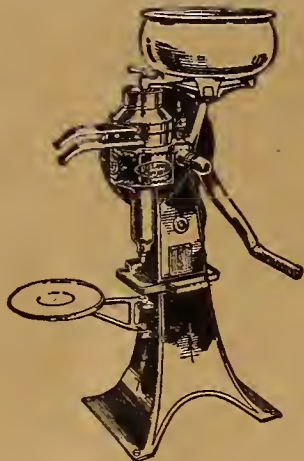
Fifteen years ago there were a dozen different makes of creamery or factory separators in use.

Today the creamerymen and large milk plants the world over use the De Laval almost exclusively. In fact, it's hard to find a large cream producer or creameryman who will allow any separator other than a De Laval in his plant, no matter what the price.

Why? Because they have found that it makes a difference of several thousand dollars a year to them whether a De Laval or some other make of machine is used. They simply can't afford to use any other machine.

This is proof of De Laval closer skimming that you can't afford to ignore. Even if you don't separate as much cream as the creameryman, you can't afford to waste it any more than he can.

Your local De Laval agent will be glad to let you try out a New De Laval on your own place. If you don't know the local agent, write to our nearest office for catalog or other information.



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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER



Don't let your cattle suffer from lameness, scouring, sore udders when Sloan's Liniment will give relief. Easily applied.

It quickly penetrates.

Farmers find many uses for Sloan's Liniment. At all dealers, 25c. 50c. \$1.00 a bottle. The \$1.00 bottle contains six times the 25c. size.

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PIGEONS PAY

Better than chickens. Young pigeons (squabs) bring 40c to 60c each when 8 to 4 weeks old. Big demand in city markets. Each pair of pigeons easily clear \$4 year. Always penned up. Free book explains all. MAJESTIC SQUAB CO., Dept. 10 Adel, Iowa.

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\$75 TO \$300 A MONTH!

Demand for capable automobile and tractor men far exceeds the supply. Our graduates secure good paying positions as Salesmen, Demonstrators, Factory Testers, Garage Managers, Drivers and Tractor Experts.

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Dairying

Silo Prevents Bankruptcy

By Chas. B. Corbin

IN ANSWER to the request by E. W. Maxwell for information on silage from shock fodder, I will give my experience. I have used a silo for seven years and find it the only way to store corn to get the best out of every part of it. Two different winters I have refilled my silo with shock fodder, once in January and the other time in February. I have my own cutter run by engine power.

For my winter filling I have a large tank of water with hose attached, and I run in three times as much water as I use when putting up silage in the fall. In about two weeks after filling, the silage begins to smell natural. My cattle do fine on this silage, and they eat it up clean without waste. It goes three times as far than when fed as shock corn, and the only important precaution, aside from plenty of water, is to tramp it well. The years when I made silage in this way were 1913 and 1915, when our crops here in Kansas nearly all failed us and I would have been bankrupt if it had not been for my silo, for I had only a little grain. In addition to the silage, I fed my dairy cows a little oats and wheat straw in the morning and a small feed of alfalfa at night. Don't be afraid of winter filling your silo, for it is far ahead of feeding corn out of the shock.

Sweet Corn for Cows

By E. V. Laughlin

MANY dairymen here in Iowa have found sweet corn, properly handled, a profitable feed for the dairy herd. Those who have tried it report that its milk-producing qualities are fully equal to those of alfalfa. If the proper varieties are planted the crop is easy to raise and care for. Many farmers grow as high as 30 or 40 acres exclusively for dairy purposes.

Sweet corn for this purpose, preferably, should not be planted until well past the first of June, as it is desirable that the crop make a rapid and uninterrupted growth. It is best if the ground is not plowed until just before planting time, in order that the crop may get the start of the weeds and grass, and may as a consequence be kept clean at a minimum of time and labor. All the usual initial preparations as to disking and harrowing, of course should be observed, for the soil needs to be especially mellow.

Plant varieties that produce large ears and stalks. White Evergreen is recommended highly because it possesses all of the qualities desired. The common practice is to drill in rows three feet six inches apart, two feet apart in the row, four seeds to the hill. The crop is cultivated the same as field corn except that it should be kept unusually clean.

Sweet corn is not as vigorous as field corn, and will not make a maximum growth unless weeds and grass are kept under subjection. Cultivation should be continued until the stalks are ready

to shoot. The last cultivation should be for the purpose of creating a mulch.

When the ears are in the dry dough the crop is cut and shocked, shocks being 16 hills square. When of this size the interior will keep bright and attractive much longer than when of smaller size. Pains should be taken to build the shocks so that they will stand securely against wind and rain. After the shocks have settled, tie them securely with twine or some other material. These precautions are necessary since sweet corn rots much easier than field corn.

The corn is not removed from the fodder at feeding time. Animals quickly develop a great fondness for the combined corn and fodder, and will clean almost all of it.

Nine Reasons for Records

NINE convincing reasons for keeping records of dairy cows are presented in a new circular issued by the extension division of Louisiana's state university. Here they are:

Records enable the dairyman to feed each cow according to the quantity of milk she produces.

They form the only basis on which a dairy herd can be improved. The time is here when no dairyman practicing business methods will buy a herd bull whose dam does not have an authentic record showing creditable milk and butterfat production.

Records alone will sell cows when no other quality will. Grade cows with records can be sold for from 25 to 50 per cent more than those without records.

A system of records is the first step in building up a herd. The unprofitable cows are the most expensive. Their heifer calves are usually low producers and should not be raised.

Records stimulate better feeding and breeding. The dairyman who keeps records, usually keeps a balanced ration and becomes interested in winter dairying, which has numerous advantages over breeding cows to freshen in the spring.

The weighing of the feed and milk keeps the owner in close touch with the daily condition of each cow.

Records stimulate better milking. Milk scales serve as a check on the milker and induce him to milk the cows better than when the milk is not weighed.

A knowledge of what each animal is doing develops personal pride and interest in the herd.

Finally, records make dairying a business proposition, and in various incidental ways mean more dollars to the man who milks.

Boys Train Bull Calf

By Jennie Carnes

THE young Holstein bull shown in the picture was born on a farm here in Allegany County, New York, and raised from a tottering calf into the sturdy road animal you see. Gentleness was chiefly responsible for his docility.

The three boys commenced breaking him as soon as he could scamper about. At first he often kicked over the traces and led the boys a long chase through the pastures. Once when on the edge of a brook he forced the boys into the deepest hole, making them scamper home after dry clothes.

Finally, however, they broke him so they could saddle him as well as use him for driving. The picture shows the three boys on their way to school in the village. The bull is left in a friend's barn until school is out.

Dandy Jim, as the young Holstein is called, is also used for cultivating, drawing stone boats, and other work.



This docile Holstein bull, trained by the boys, is a steady draft animal for both field and road work

Who Wants

I have one for any boy or girl who is willing to do a little easy work in spare time. You can positively earn a bicycle easily and quickly.

Models for girls or boys of all ages.

Pneumatic tires, sturdy construction, coaster brake.

Parents if you would like your boy or girl to have a thoroughly reliable, high-



A Bicycle?

grade bicycle, here is an opportunity you must not miss. The bicycle will be given absolutely free of cost. This is not a contest. You will be told exactly what is necessary in the first letter our club secretary sends you. Isn't it worth investigating?

Address

Secretary, "The Bicycle Club"
FARM AND FIRESIDE, Springfield, Ohio

Flaxseed vs. Whole Milk

By Carlton Fisher

ANY successful method that will cut down the period of feeding whole milk to calves is usually welcomed by dairymen. Experts at the North Dakota Experiment Station have used flaxseed and skim milk with good results in the following manner:

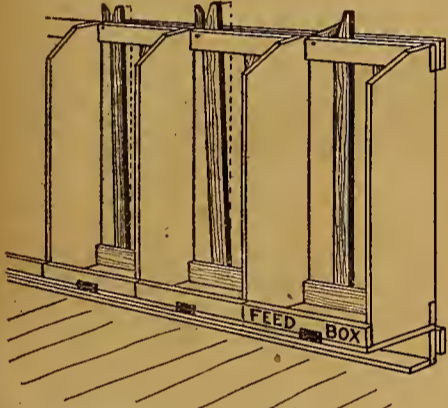
Whole milk was fed for the first three weeks. Then during the age from three weeks to six months skim milk was fed with enough flaxseed to take the place of the fat in whole milk. Each calf was given two gallons of skim milk a day.

Calves fed in this manner did not do quite so well the first three months as a similar group of calves fed whole milk, but at the end of the six months there was practically no difference in condition except that the calves fed whole milk averaged about four pounds less in weight. But considering that \$19 worth of whole milk per calf had been saved in the six months' period, the use of flaxseed was considered the better practice.

Stanchions Save Labor

SIMPLE stanchions for calves are a convenient means of preventing the larger calves from eating the small ones' share of the feed, also for feeding many calves quickly and without confusion. The diagram shows the construction.

While stanchions are usually built in the barn, a few panels of them are exceedingly useful as part of the fence in the calf lot. In such cases the calves come to the stanchions at feeding time, and may be safely fed by a child, since there is no occasion for entering the calf lot. Persons who have been accus-



Stanchions with partitions prevent calves stealing from each other

tomed to dealing with husky, bunting calves will appreciate the advantage of stanchion feeding.

Calf-Feeding Costs

By H. L. McGhee

WE HAVE solved the bull-calf problem at least to our own satisfaction, and in a way that returns a profit. In late winter or early spring we buy a few calves from neighbors. We can generally get them for about \$1 a head when the calves are a day or two old. These we add to the ones which our own Jersey cows produce, making a herd usually of 10 or 12 calves.

Skim milk is the principal feed they receive until they are old enough to make their way on grass. Then we let them practically take care of themselves, only seeing that they have plenty of water and pasture until about the first of November, when we put them into a small calf stable built especially for the purpose, and begin to fatten them for market. They are fed on silage, corn, and cottonseed meal.

By the first of March they are generally ready for market, and we like them to be about 14 months old at this time. You may judge for yourself whether this method is profitable or not from the following figures on our 1916 bunch of calves. After they had been on pasture all summer as described, we put them in the feeding stable November 1st, 1916. The ration consisted of one-half gallon of corn and 15 pounds of silage daily per calf. This makes 9 3/4 bushels of corn and 2,250 pounds of corn silage fed to each calf during the 150-day feeding period between November 1st and March 1st.

With corn at \$1 a bushel and corn silage at \$4.50 a ton, each calf consumed \$15.19 worth of feed. When sold for beef the calves brought an average of \$31.55. Deducting the cost of the feed, we find the net return per calf is \$16.36 with which to pay for our work and the other small expenses incurred. As the skim milk could not be used in any other way, we do not include any cost for it, as otherwise it would be a total loss. The labor all comes in the winter when we are not very busy and would be inclined to sit by the fire were it not for the calves.

"I Would rather be Right than be President"

H. Clay

To have the right standard and faithfully live up to it, this is the working motto of the Firestone Organization. Since Mr. Firestone founded the Company seventeen years ago, there has been no swerving from this quality rule. Success has come because Firestone standard is "right" and every member of the Organization upholds it.

The standard means that you must get riding comfort in the highest degree with a safe hold and Most Miles per Dollar on any road, through the whole year. Mr. Firestone's name on the tire is your assurance of this.

Your dealer and the nearest branch cooperate to give you prompt, saving service.

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TIRES

213 Atlases Damaged by Printer's Blunder

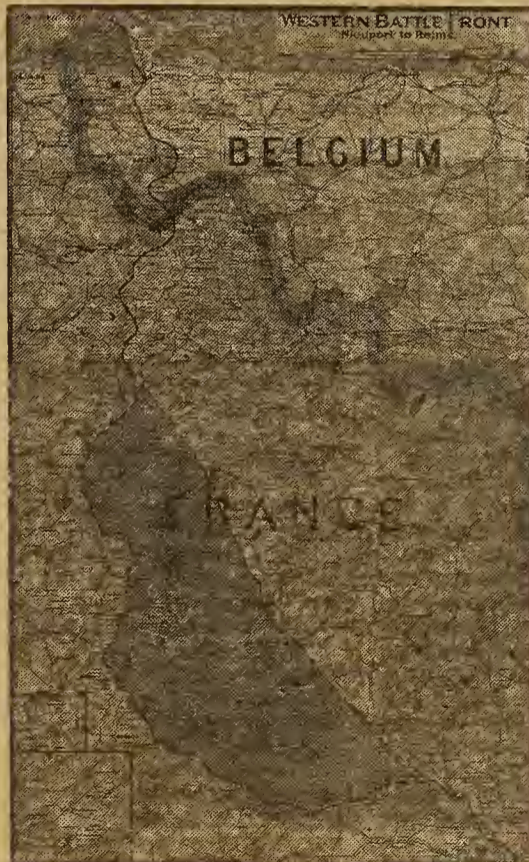
A printer's blunder caused the type matter on the cover of the first few copies of our *New War Atlas* to read badly. The mistake was discovered after 213 copies had been printed. The damage is slight; it doesn't hurt the book a bit, but we are going to sell them at exact cost while they last. One copy only to *Farm and Fireside* subscribers who wish to renew. Read the offer below.

A Wonderful Atlas

This is the first atlas to diagram the great retreat of the Germans before the avalanche of French and British. The map shown in the illustration appears in this atlas drawn, in four colors, to a scale of five miles to the inch. It shows the positions of the armies as they were five months ago, clinched in a mighty deadlock. It shows the direction of the great advance—the stretch of territory, mile by mile, that has been reclaimed. It shows every village, every city, every fortress on the Western battle front.

There is also a map of the Eastern theatre of war, and a map showing the situation on the North sea. Then there are maps of Europe, of France, of Turkey, of Germany—12 colored, page and double page maps.

The atlas contains fifty-five magnificent half-tone pictures. The great machines of war are illustrated. The great surprise of the war, "The Caterpillar Tank," is shown in operation. Two of the new machines to be used in combating submarines are pictured. French periscopes, anti-aircraft guns, mines, etc., are all brought vividly before the reader.



This Map in Five Colors, size 14 1/2 x 21 inches, is one of several similar maps in the atlas. The dark area shows the ground gained by the British and French in recent offenses.

Visualizes the War

America's big men of the war are all there: Wilson, Baker, Daniels, Wood, and Mayo. The military giants of France and England, Neville and Haig, are there, together with Lloyd George, the Kaiser, and the rulers of the world. Pictures show how the Germans have made a desert of northern France.

President Wilson's address to congress is given in full. It was called that great state paper by Theodore Roosevelt, and should be preserved. A chronology of the war is given which includes an itemized statement of the events from the assassination of the Archduke Ferdinand to the great French victories on the Somme.

For 78 Cents

We will send you the Atlas postpaid and extend your subscription to **FARM AND FIRESIDE** for one year.

The demand for this atlas has been wonderful. Although it has been in the hands of our agents less than two weeks the entire first edition is practically sold. We have picked out these 213 imperfect atlases and will sell them at cost to subscribers **NOW ON OUR MAILING LIST**, who wish to renew their subscriptions. It will not be sold at any one else.

GENTLEMEN: I enclose, herewith, 78 cents. Send me one of the imperfect war atlases and extend my subscription to **FARM AND FIRESIDE** one year. I am already a subscriber to **FARM AND FIRESIDE**.

We reserve the right to refund your money in case your order reaches us too late. There are only 213 of these imperfect atlases on hand. They will be snapped up in a very few days. Make up your mind **NOW** whether you want it or whether you don't want it. If you make up your mind that you **DO** want it, then fill out the coupon right now—this minute. Tomorrow may be too late. Don't wait until they are sold and then expect us to fill your order. Decide now. Decide whether you want it or not and if you decide that you **DO** want it then fill out the coupon **NOW**.

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Farm and
Fireside,
Springfield, Ohio

Here is a thrilling tale of the circus ring and of a game little animal trainer's struggle with Rajah, an angry tiger

A Matter of Nerve

What Happened When Annie Mullin Entered the Arena

By MARY BRONSON HARTT

SIGNORINA TOTTINI was afraid, and the tiger knew it. But she was not afraid of the tiger: she was afraid of Bill.

As she tripped into the arena to the throbbing roll of the kettledrums, and stood gayly bowing and saluting smartly with her whip,—a natty figure in frogged military coat, scarlet tights, and high varnished boots,—she had been for an instant vaguely aware of the familiar sight—the shabby folk crowding the tent outside the bars, the gray-brown billows of the ancient canvas top, the vivid blue of the tent poles, the hissing arclights, the faded uniforms of the blasé band; of the familiar animal scent, half beast, half human; and even, above the blare of the brass, of that indescribable pandemonium of illogical sounds that meant a good night at the amusement park.

Then of a sudden her senses focused sharply, as with a shock her eyes locked glances with Bill's. For there he sat, down yonder on a hard bench in the center of the third row, large as life and glowering like a thunder cloud.

Under her make-up she felt the color surge. If only the Hessian boots would rise to her ears, or the abbreviated scarlet coat stretch down to her toes!

Then the signal sounded, the clanking cage door opened, the band struck up the swift measures of the Horse Trot, and His Majesty the Tiger came slinking in. The Signorina shifted her whip and faced him.

Of course the tiger knew nothing of Bill, and cared less; and yet, without raising his evil eyes higher than the shiny Hessian boots, he was aware of something awry. The boots were not taking their accustomed firm base for the little figure in scarlet. Some accent of imperious control was wanting from the stamp of the Signorina's small foot, some bite from the crack of her whip.

"Hup!" ordered the Signorina, tapping a perch on the side of the cage.

The tiger snarled. "Hup!" The whip crackling viciously round his ears enforced the command. Habit was strong. The tiger's muscles gathered for the spring. "Hup! Hup!"—with the old peculiar lift in the voice. This time Rajah leaped.

The Signorina stroked his great striped paws testingly with the butt of her whip. Then for an instant she posed, the whip held across her knee, under the splendid beast's perch.

Rajah yawned in regal indifference. Nobody noticed a light of sinister interest that flared for a moment in his sullen eyes as he looked down on the girlish figure beneath him. Nobody, that is, except Bill, and Bill's whole heart was in the arena.

For Bill was doing mental acrobatics—trying desperately to reconcile the little scarlet tiger tamer with Annie Mullin, the prettiest waitress at the Lightning Lunch. His mind had flown back to an evening, three years before, when Annie had told him it was all off between them.

"Say, Billy," she had said, dropping the black fringes over those light gray Irish eyes, as she nervously polished the counter and rearranged the plates of pie, "you know that swell thirteen-dollar flat you was showin' me over last Sunday out to Roxbury? Well, don't take no lease of that—not on my account. I'm—I'm not thinkin' of gettin' married as much as I was. I like you fine, Bill, but I guess it's in my blood. I ain't never told you, but my mother was in the business with a circus, workin' a bunch of performin' lions. Say! she had Bonavita chased clear under the table! The show people that comes here to feed have been after me this long while. They say I've the trick with animals, and I guess I have all right, all right. They want to put me on with a trained tiger. I was round to the arenar again las' night after the show. Rajah's getting used to me. I've been in the cage twice already, an' he acted fine. I'm real sorry, Bill. But I guess marryin's too slow for me. I've got to have somethin' that takes nerve."

And Bill, in his helpless pain and anger, had only wanted to hurt her as she was hurting him.

"Nerve!" he had jeered savagely. "Aw, fade away! Them show animals are all doped. You have to punch 'em to make 'em roar. You think you want to show yer nerve. 'Tain't nerve yer so crazy t' show—it's yer shape! What if yer mother was a show woman? You can be respectable!"

And then Annie's eyes blazing as only Irish eyes can, and Annie's voice with an edge on it: "You—you—lobster! I wouldn't marry you now—not if I had to sweep the street!"

He had not seen her from that day to this. And

here she was, "showing her shape" at the biggest show on the beach. It was hard to tell which looked uglier, Bill or the tiger.

Uglier, that is, in spirit. The tiger was clearly the handsomer animal. When Bill cooled down enough to take note of the proceedings in the arena once more, Rajah was being made to do spectacular stunts on the back of a superb milk-white Arabian charger. And a sight it was to see the lithe, tawny-striped creature leap through tinselled hoops and bound on to high perches at the compelling word of a slender girl in scarlet.

Bill felt an odd pain somewhere about the heart as he watched, noting involuntarily how her girlish softness, the appealing curves of cheek and chin, the piquant lines of the profile, triumphed over the hardening mask of her make-up. He felt a great need to summon wrath and scorn to the defense of his manly fortitude.

Although a heavy wooden saddle, almost a platform, protected the horse's back from the claws of the great cat, and his neck and ears were armored with a singular spiked harness, the sensitive animal shivered all over every time the tiger dropped down upon him, his pink nostrils widening with fear.

"Huh!" growled Bill, addressing the man on his right. "What's that fool horse shakin' about? There's nothin' to be afraid of. That tiger's doped!"

"Doped, is he?" the man almost shouted, turning

neighbor muttering. "She's flustered. That's the third time she's had to move her props."

It was Bill's turn then to take a good look at the man at his elbow; and now, by the reflected glow from the stage, he easily discerned the keeper's togs.

The man met his abashed glance indulgently. "Yes, that's my tiger. I broke him in. The kid, there, only works him. You see, the public likes to watch a girl fooling with a brute like that. But you're wrong about tigers, Mister. This ain't no pussy-pussy business. I can snuggle up to Rajah when he's feelin' right; but then again—there's some of his work!"

HE STRETCHED out his left hand. Even in the dimness, Bill, bending over it, saw the twisted purple scar that seamed its back from thumb to forefinger. His wincing look traveled from the wound to the smooth cheek of Signorina Annie Mullin, at that moment playfully admonishing Rajah with lifted forefinger to sit up and be a good little tiger and do his best.

She was ready now for the climax of the act. The band, which had been drizzling indifferent melodies, as if tunelessly snoring in its sleep, woke up and began to shake out thrills.

The Signorina drove Rajah to a perch high up on the side of the cage; and then, while the band dramatically held its breath, she rolled the great ball

to the center of the arena, tapped it commandingly with her whip, stepped to one side, and dared the tiger to lead.

As usual, Rajah took a deal of daring. The Signorina's foot and the Signorina's whip executed a perfect fusillade of cracking and stamping before the great beast could be nerved to his work.

Then the graceful leap, the flash of black and yellow, the splendid curve of the lithe body through the air.

Miss Mullin had got well into her stride now. As Rajah leaped, she was conscious of a thrill of pride that Bill should be there to see how easily her will dominated the great, powerful brute. Show her shape, indeed! She guessed he'd see some nerve, too, before she was done with him.

Not too fast, Signorina! Was Rajah, too, indulging in vain-glory, underestimating the difficulty of his time-honored best trick?

His marvelous cat's muscles braced to land elastically, all four paws bunched together on the curving surface of the sphere, Rajah missed his aim by an inch. His fore paws, indeed, reached the ball. His hind paws struck the stage with a force that jarred every nerve in his body.

Then Rajah was mad! Spurning the ball violently from him, lashing his strong tail in short, angry twitches, his ugly jaws set in a snarl, he turned to wreak his temper on his trainer.

"Look out!" came in a thrilling undertone from the lips of the man at Bill's elbow. The keeper strained forward as if to project his authority inside the cage. Bill's heart hopped up into his mouth.

But at the first sign of active insurrection a change passed over the Signorina with the whip. She seemed to add inches to her stature, to be possessed of an invincible and dangerous calm. Her eyes opened wide and glowed with a strange fire. Her whip no longer cracked. When the lash flew out now, it sought and found, not empty air, but the tiger.

"H-up!" she ordered, tapping a pedestal, her voice low, with plenty of "punch" in it. Rajah, long used to respond to the mastery in that voice, half turned to obey, then wheeled again, snarling.

The girl shifted the whip, menacing the rebellious beast with the heavy butt. He cringed, but struck savagely at the descending weapon. The girl advanced on him fearlessly, stamping her foot. The beast gave ground, half cowed before the authority that seemed to radiate from every line of the slight figure. Still he made no move toward the pedestal.

Driven back by blows and obloquy, the tiger, in his fury of rage and pain, dashed against a hurdle supporting the inclined plane, bringing down the frame.

The accident might have quelled Rajah—did, for the moment, send him sprawling with a sharp sting in a bruised shoulder. But the debris, falling between him and the indomitable little trainer, afforded him a temporary shelter from her whip.

Well now for Annie Mullin had her mind been single for Rajah, as Rajah's evil mind was clear of all thought save of her. In that psychological fraction of a second when she should have pushed her advantage with eye and tongue and sheer compelling force of will, one swift thought of her old lover looking on



From one nerveless hand, as it came round into Bill's range of vision, there dangled the trainer's whip

on Bill with his fists clenched in a belligerent manner. Then he seemed to think better of his violence, and fell to studying Bill as if he were a strange animal, narrowing his eyes offensively.

"I suppose, now," he said in Bill's ear, "you know all about tiger-taming. In the business yourself?"

Bill missed the heavy sarcasm. He didn't look at the man, or even in the uncertain light he might have made out the frogged military coat and knee boots, and the whip, held furled, so to speak, in the powerful hands.

"WELL, no," Bill replied simply. "I'm a telephone lineman. But I ain't easy kidded. If them show animals was real dangerous, there'd be a roof to that there arenar!"

He pointed triumphantly to the top of the performing cage, where the great bars were bent downward and inward in a circle of murderous prongs.

The man seemed hugely entertained. "Well, you know, a tiger isn't a—telephone lineman," he chuckled. "He can't shinny up a perpendicular iron rod, nor he can't jump in the teeth o' those prongs, neither."

A burst of applause interrupted them. The little trainer having brought the horse episode to a close with a flourish and a pose that openly begged for hands, the cage door slid aside to let the nervous steed escape, his hoofs echoing on the boards of the passage.

And now Rajah rested majestically on a pedestal at the back of the arena, watching with those smoldering eyes of his the preparations for his final act.

As stage "supes" passed them to her through the bars, the Signorina skipped about, arranging the parts of a long inclined plane up which Rajah was scheduled to propel himself, balanced on a big ball. If there was one thing more than another that Rajah objected to, it was waltzing on a ball.

"Say, what's got into the kid?" Bill heard his

flashed through her mind. And in that fraction of a second Rajah leaped.

But not for his pedestal. Clearing the fallen framework with one magnificent bound, he launched himself straight for the scarlet shoulders of the trainer.

She was quick, but the tiger was quicker. Swift as light she darted aside, and her whip flew out to catch the first force of the impact—else there would be no story to tell. The whip cramped the style of Rajah's leap. But one of his great paws caught in the cloth of the trainer's scarlet-coated shoulder, and the two went down together.

Instantly the place was in wild uproar. Women shrieked and covered their faces. Men swore. The crowd near the cage fell over itself in its haste to get farther back. A guard rushed out and began to prod Rajah furiously, but ineffectively, through the bars with a prong on the end of a long pole. The band, which might have saved the day, forgot orders and stopped playing. The trainer man in the third row started madly for the door leading to the back of the cage, fighting his way over chairs and through the screaming, struggling crowd.

AND Bill? Bill went off automatically. As the tiger sprang, he started by the shortest cut to Annie—

A foot on a bench, a strong hand on the bars, a rest for the toe of his boot on the edge of a projecting hurdle, a knee on the horizontal of the cage, a clutch on one of Rajah's high perches, a mighty pull to the top of the incurved bars, and the big lineman balanced for the drop into the arena. Down he came, like the block of a pile driver, directly at the tiger's back. At the smashing sound, Rajah, whose nerves were in fiddle strings at the general uproar, gave back a bit in panic; and Bill, gathering himself up from his fall, saw Annie's white face crushed against the great brute's cruel paw.

At that a perfectly uncalculating fury possessed him. Rushing on Rajah as he might on a dog that was worrying a cat, he landed a terrific kick on the tiger's nose with the toe of his heavy boot. Almost at the same instant he snatched the barbed pole from the open-mouthed guard outside the cage.

With a roar of agony the tiger started up, loosing his hold on the girl. For the second he was too much hurt and astonished to do more than gape at his sudden assailant. Then, uttering a deep feline curse, he dashed at Bill to demolish him.

Bill shortened his weapon and stood his ground.

Meeting a grim reception at the point of the prong, Rajah retired to the side lines to consider his injuries. His cringing manner said obsequiously, "I guess you have me floored." But Bill saw the lust of murder in his furtive eyes.

Covering the yellow brute with eye and prong, Bill began to edge, inch by inch, toward the spot where the little trainer was lying.

Warily edging along, he at length reached Annie's side. Seizing a moment when Rajah was busy sympathizing with his bruised nose, he stooped, snatched the limp figure from the floor and swung it swiftly behind him, holding it with a tense left arm.

He wasn't a second too quick, for the tiger was coming back. Stealthily now, like the big sneak he was, he came crawling, belly to the boards. His eye followed the iron point. Painfully, he was in two minds about flinging himself on that again.

SHIFTING the stick, and watching the beast maneuvering for a chance to get past it, Bill felt a sickening doubt as to how long he could keep up a one-armed fence with the brute, burdened with the weight of an insensible girl.

He reckoned without the Signorina. His heart turned fairly over in his breast when he felt the unconscious figure shift in his grasp. Was she slipping from him? Then two arms began to steal weakly round his waist. The girl still leaned full upon him, her head against his shoulder; but she would hold herself.

And more. From one nerveless hand, as it came round into Bill's range of vision, there dangled the trainer's whip.

Bill took the cue. Leaving Annie to cling as best she might, he grasped the prong in his left hand, the whip in his right, and gave it a mighty crack.

"Hup!" he ordered, as nearly in Annie's style as he could. "Hup! Hup!" then imperiously tapped it on a pedestal. Rajah paused and looked at him in surprise. "Well, what do you know about that?" he seemed to be saying. He made a short rush at the pretender, snarling horribly.

Bill didn't mind his snarls nearly so much as his furtive crawling. He threw every atom of command he was capable of into his voice and the stinging crack of his whip.

[CONTINUED ON PAGE 23]

Looking Your Best

A Little Care Will Assure You Pretty Hands

By MARGARET DRUMMOND



PRETTY hands are one of woman's greatest charms, and while it is not given to every woman to have classically beautiful hands there is no woman who may not have attractive hands if she so desires. A few minutes each day an intelligent use of the proper materials and an earnest intention of persevering in the good work are the things that are necessary.

If you would have smooth white hands you must use some consideration regarding them. By that I do not mean "idle" hands, as my readers have the serious business of home-making to attend to, but one cannot expect to have the skin of the hands looking fine if one digs with them in the garden, or blacks them with the dust and ashes in sweeping, dusting, and attending to stoves and ashes. The scrubbing and amount of soap required to remove the dust of such labors are very hard on the skin, and protection must be given it whenever possible, and precautions taken when the hands have been exposed to the things which make for roughness.

In doing housework, rubber gloves, when it is practical to wear them, afford great protection, especially in winter, but they must not be worn too long at a time, as they have a tendency to draw the hands. Loose-fitting cloth or chamois gloves also give valuable protection, especially where one is liable to scratches or bruises.

Before putting down carpets, cleaning house, or working in the garden rub the nails lightly over a cake of soap. When the work is done most of the soap can be pressed out and the rest is easily removed with a nail brush. A little lard rubbed around and under the nails before blacking the stove will protect them, and the grime of the blacking will be more easily removed. Stains should be removed at once. The skin of a raw tomato and lemon juice are excellent for this, and for ink stains the fumes from a burning match.

On washing day, when the work is done rub the hands well with vinegar. This will do away with the stiffness as well as the puckered-up feeling which accompanies this weekly ordeal. These are homely hints that bring good results.

Perfect cleanliness is the first rule for the seeker of beautiful hands. Every day give the hands a thorough scrubbing in warm water, using plenty of soap and a soft-bristled nail brush. In the operating-rooms of our hospitals the hands of the doctors and nurses are not considered thoroughly clean until they have been scrubbed for twenty minutes, but if one devotes five minutes to the scrubbing process a good deal will be accomplished. Dry very carefully, as carelessness in this is responsible for more roughness and chaps than anything else, and in the drying rub each finger in turn and gently press back the scarfskin.

GOOD clear rainwater is of course best if one can have it for washing, or a little bran or oatmeal added to the water has a softening effect, and makes the skin velvety and pliable, and almond meal is also excellent for this purpose.

When hands are red and rough, massage well after the nightly washing with a good cold cream and draw on a roomy pair of gloves which have had the finger tips cut off. Keep these on all night. It is a very good plan to keep on your washstand a mixture of lemon juice, glycerin, and alcohol (equal parts) to apply every day when the housework is finished. Use it after washing while the hands are still wet.

The condition of the nails in their shape, color, and sheen is the crowning attraction of a pretty hand. Every day the nails must be cleaned, and once a week at least half an hour given up to manicuring them. For the daily cleaning wrap a piece of absorbent cotton around the point of an orange-wood stick and run it gently under the nail, taking care not to push the inner skin away from the nail, or to bruise the nail itself. Gently push back the scarfskin. Never use a metal instrument to clean the nails, as it not only thickens them but corrugates the under side and makes them more liable to stain.

For the weekly treatment the instru-

ments required are a good slender nail file, two pairs of scissors, both curved, but one much finer than the other, emery boards, orange-wood sticks, a chamois buffer, a small bottle of peroxide, and a little absorbent cotton. This sounds like a rather long list to the woman who has not been in the habit of taking care of her hands, but with care the instruments last a long time.

First file the nails, following as closely as possible the outline of the finger tips. When they have been filed and shaped, place them in a bowl of warm sudsy water. Soak for five minutes, then dry and with an orange-wood stick, which has wrapped around it a little absorbent cotton that has been dipped in the soapy water, gently push back the cuticle to show the crescent at the bottom of the nail. Use the greatest care in doing this, as it is very easy to bruise the skin and start hangnails. If there are already torn spots in the cuticle, trim the edges with the thin scissors and apply a drop of the peroxide of hydrogen. Next trim the edges of the nails, using the emery board.

The finger nails are now ready for polishing. Touch the surface very lightly with cold cream—just enough to hold the polishing powder which is next applied. Rub each nail briskly up and down and across for a hundred times. Do not treat the nail roughly, because if it is bruised in any way white spots will come. After polishing, wash the hands in warm water and with the nail brush remove every bit of powder. Then rub the nails briskly across the palm of the hand and your task is ended.

To Make Eyebrows Grow

L. E. S., MINNESOTA—There is nothing better than pure white vaseline for promoting the growth of the eyelashes and eyebrows. Apply it with a small brush, being careful not to get it into the eyes, and brush the eyebrows vigorously every day to promote circulation and stimulate the growth of hair. It is best to apply the vaseline at night and wash it off in the morning.

Care of the Teeth

M. J., MISSOURI—Once a day is not often enough to brush your teeth. It must be done three times a day to keep the teeth in good condition. However, no matter how often one brushes the teeth or how clean they appear to be, it is well to visit a dentist once or twice a year and have them thoroughly cleaned.

Treatment for Blackheads

L. S., IDAHO—For blackheads, wash the face thoroughly every night, using first hot then cold water. The hot water will soften the black part, which is nothing more than an accumulation of dust which has settled on the tops of the little pores of the skin. These pores have become choked with perspiration, and you must massage your face when washing so that this accumulation is loosened and the blood from underneath the surface will force it out with your assistance from the outside. Twice a week apply a good cold cream.

To Abolish Pimples

C. E., MINNESOTA—Pimples are usually the result of improper eating and not enough exercise and sleep. Eat simple food, lots of milk and eggs, fruit and fresh vegetables, see that you are not constipated, get eight hours of sleep daily, and take exercise frequently in the open air.

Prematurely Gray Hair

W. B., OHIO—Please do not be so foolish as to think of dyeing your hair. There is no dye that I know of that can be safely recommended. If you have inherited prematurely gray hair, why not accept your lot, and make the most of it by dressing your hair in a becoming and youthful fashion? Gray hair, especially when it frames a youthful face, is always charming. Take good care of it, because gray hair shows the lack of care worse than any other color.

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?	?	?	

Can you arrange the numbers in these squares so that every column will equal 6? If you can, I will send you a valuable prize. I am anxious to have more bright boys and girls join my Prize Club. I want to be sure that every member is bright. The only way I could think of to find who was bright and who was not bright was to see who could solve the puzzle. Send me your answer to the puzzle. I will send you a valuable prize by return mail. I will also make you a member of my Prize Club. I will show you how you can get dozens and dozens of prizes for 10 or 15 minutes' work. I will tell you just exactly what to do to earn as many prizes as you want. Send me your answer to the puzzle. If it is correct I will send you a prize. Enclose 4 cents in stamps to cover the cost of mailing and packing the prize. Address
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Housewife's Club

Some Canning Questions

By Cecilia Sharp

Can one can peas and beans at home in glass jars so that they will keep?

MANY of our readers are asking us how to can particular vegetables, such as beans, peas, or corn. Some of them have been canning fruit for years, and perhaps they have canned tomatoes, but they hesitate to try other vegetables. The general principles for all canning are the same. The "cold pack" method, the one used most commonly by the farmer's wife to-day, involves a few simple operations—cleaning and preparing the fruit or vegetable, blanching, cold dipping, packing, and sterilizing.

Here is the process for beans in detail: Select beans of the same age and color, and plan to can immediately after picking. String and wash well, and if you do not wish to can them whole cut them into uniform pieces. I like them canned whole. Blanch by placing in boiling water from five to ten minutes, depending on the age of the beans, and then plunge them quickly into cold water. Fill the jars, packing closely. Add one teaspoonful of salt to each quart of beans, fill the jars with boiling water, and put on the tops loosely. Put the jars in the canner. This may be simply a lard pail or wash boiler with a false bottom of wooden slats or, better, a wire rack, and the water in it should cover the cans about one inch. Have the water hot when the jars are set in and bring to a boil quickly. Count the time from the moment it starts boiling, and sterilize the beans two hours. Then remove jars and tighten covers. Use the same method for peas.

One of my neighbors uses a preservative in canning vegetables. Is this all right?

DO NOT use preservatives. They are unnecessary and may be harmful. If you follow directions, choose your jars and rubbers carefully, and then sterilize the vegetable itself long enough, you will have no difficulty in keeping it. Be sure to use perfect-fitting tops on the jars, and good rubbers.

Sometimes after sterilizing I find that my jars are not quite full because the process has made the vegetable shrink. How can I remedy this?

THE blanching and cold dip usually shrink the product so that you will not have this trouble. Perhaps your packing has not been close enough, or you may have sterilized for too long a period. However, you need not worry about the vegetables not keeping if they have been carefully canned. The sterilizing process sterilizes the air in the jar along with the product, and so a jar half full should keep as well as a full one.

Some corn that I canned last year had a sour taste. What caused this? I was very careful in canning it.

YOU probably did not can the corn immediately after it was gathered. Plan to can all vegetables as soon as possible after picking.

Storing Winter Clothing

By Mrs. Emily H. West

WHO has not had the experience of searching hopelessly for winter caps and mittens which had been tucked away somewhere during the summer and could not be found when cold weather had descended and they were needed?

I have found that the easiest way to avoid this is to sort out winter clothing carefully when warm weather begins and put it away systematically. I wrap up woolen clothing in paper bundles marked "Children's underwear," "Mit-

tens and leggings," etc., and store these things on the shelves of a closet which is too inconvenient for everyday use. For woolen blankets and bedding I have a long pine box lined with heavy paper. On the inside of the lid I tack a list of the things which are stored away in the box, so that a glance will show me whether what I am seeking is there or not.

Before putting away clothes and blankets, I do any needed mending on them, clean them thoroughly, and hang them in the sun for several hours in order to dislodge any moth eggs or larvæ which may be on them. Cedar chests and moth balls repel the insects, but if eggs or larvæ are already present when the clothing is put away, these remedies are of no avail. I spray cracks and corners of the closet and box with gasoline in order to kill any larvæ that may be hidden there, and I distribute a few camphor balls among the folds of the clothing.

For woolen coats, dresses, and furs I use ordinary pasteboard suit boxes made moth-tight by pasting strips of paper around the edges to seal them. I use cedar chips or strong sachets freely distributed among the folds.

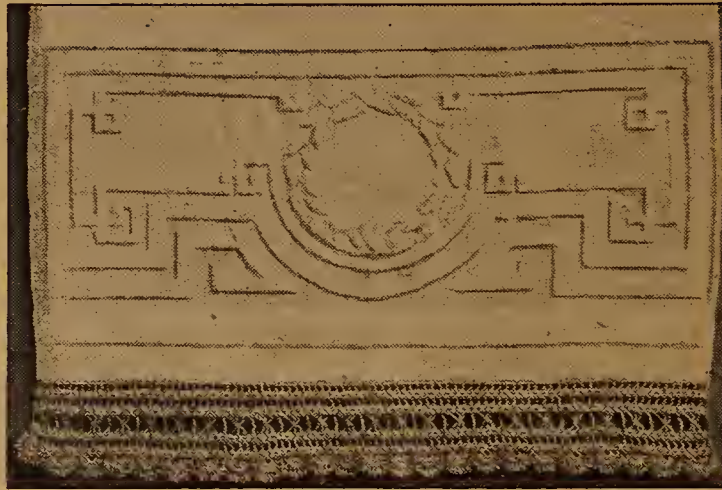
Aluminum Ware

By Jane Macpherson

ALTHOUGH the price of aluminum kitchen utensils is double the cost of any other kind, such utensils will give more than double the amount of service. They will not only outwear all other utensils, with the possible exception of iron, but they are lighter and more convenient to use.

Aluminum ware is light, consequently for a skillet, or a roaster, where the food cooked is heavy, they are much easier to handle. Aluminum saucepans

Nun's Lace



THE simple design of this lace makes it very practical for towel ends and table and bed linens. Complete directions for making will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

are indispensable in the well-equipped kitchen, in any kitchen in fact, as the acids of fruits and vegetables will not act on the metal as in the case of tin.

Heat is distributed evenly over all parts of an aluminum utensil. This makes it a good ware for baking. Another important point in favor of aluminum ware is that it does not chip as do enamel, tinned-iron, or agate-lined utensils. Aluminum kitchenware cannot be destroyed by dropping or knocking against other utensils. Aluminum ware, though more expensive, will prove more economical and satisfactory in the end.

The Center of Hospitality

THE center of hospitality in the home is that point about which the family itself gathers most often. This point is in most homes the fireplace. Hence its location and construction are of vast importance in building a home.

The fireplace, if there is only one, should be in the living-room, for there the family and friends can enjoy it most. It should be located in the center of a wall space, either on one side or at one end of the room. Select the space which will permit the greatest number of people to sit around it.

In the construction of the fireplace you must not forget that its chief purpose is for a fire. The more simple the lines of construction, the better taste is displayed, and the more room the open fire receives.

There is a great variety of materials suitable for a fireplace, and your individuality and taste can be well expressed in this important factor of the home. Brick, tile, wood, and many tile substitutes may be used. These offer great possibilities both for good color and design, and lend themselves to any style of architecture.



Cookery

Preserving Strawberries

By Ida M. Shepler

STRAWBERRIES are a favorite fruit, but must be given particular care in canning if they keep well. Wash and drain the fruit after hulling. While doing this, have cans and lids both heating in hot water. Measure the drained berries, and for each quart of berries allow one cupful of white sugar. Place the sugar in an aluminum or granite kettle, and add a few spoonfuls of water to keep it from burning until it melts. When the sugar has boiled long enough to drive all air out of it, add the berries. As these boil up gently, stir them down. When they have boiled up the second time, lift off the fire and can, taking the cans from the warm water one at a time as you can; put on the lid before filling the next can, tighten the lids, turn the can upside down, and leave in that position four or five days. The berries then, when turned, will resume their proper position in the cans. I never lose strawberries when I follow this recipe.

For preserving I use only firm berries, and prepare as for canning. I measure the berries, and for each quart of berries allow a full quart of white sugar. I place this sugar in the preserving kettle with enough water to keep it from burning until the sugar melts and boils. I allow the sugar to boil, stirring it until it strings from the spoon. I take the strawberries gently from the vessel they have been drained in, and gently add them to the boiling sugar. This cools the sugar, but they soon boil up again, and I stir them down. When they have thoroughly boiled up again I consider them done and put them in the cans. You see, I make but little difference between preserving and canning, with the exception that I give more sugar to the preserves and allow it to thicken before adding the berries. It is the surest way of getting them to keep safely that I know of, and to retain their shape and color. Too many housewives cook the strawberries too long.

Sun preserves of strawberries I make this way: After preparing the berries I measure berries and sugar to equal amounts, placing the dry sugar on the berries, then set them on the back of the stove and let them cook gently until the sugar has slightly thickened. Then I spread on shallow dishes set direct in the sun, and cover with mosquito netting on frames to keep off flies and birds. One day of hot sun should thicken the syrup, leaving the berries a bright red; but if it doesn't, set them back on the stove and keep merely warm until the sun again shines.

ELM STREET PUDDING—Put one quart of milk in double boiler, and when hot add two packages of powdered gelatine and one cupful of sugar. When this is cool, beat it into the well-beaten whites of two eggs. Cut stale cake into strips, put into a mold until nearly full, then pour over it the gelatine mixture. When solid, turn out and put strawberry sauce around it, and serve with cream. This can be made Saturday for Sunday's dinner. C. B., Florida.

SOUR CREAM CAKE—Break two eggs in a cup. Fill cup with sour cream. Pour into a mixing bowl, and add one cupful of sugar, one scant teaspoonful of soda dissolved in water, one and one-half cupfuls of flour, two teaspoonfuls of baking powder. Beat well the ingredients mixed together in the order named, and bake in muffin tins. L. M. Z., Ohio.

BAKED TOMATOES—Take large, firm, fairly ripe tomatoes, cut off a slice from the top, sprinkle over the top a generous amount of grated cheese, and over the cheese a slice of bacon. Bake until the bacon is crisp, in a hot oven. H. B., Vermont.

A Matter of Nerve

[CONTINUED FROM PAGE 21]

"I will make him mind!" was singing in his brain. "I will! I will! I will!" Over and over again he flattered himself that Rajah was beaten. Then back he came, spitting and snarling and making ugly passes at the whip, trying to run in under Bill's guard and get at his legs.

His mechanical instinct told Bill that if once he could force Rajah to mount his pedestal with all four powerful legs bunched under him, he could risk a dash for the door of the cage, for the tiger would be in no position for an effective spring.

Over and over again, man and beast footed it round the cage, the man never quite losing the upper hand, the beast never thoroughly cowed. Big drops of perspiration began to trickle down Bill's face. His throat ached with growling out orders, his arm with the incessant snapping of the whip. He began to feel that while this might be fun for the tiger, there were limits.

Rajah, too, appeared to think it appropriate to bring things to a climax. He gathered himself for a savage rush.

Whether or not Bill's hold was weakening, the tiger got in a blow on the shaft of the stick that nearly paralyzed Bill's arm. His hideous snarling came almost in Bill's face. A dreadful confusion blurred his brain.

Annie! Would the brute get Annie, after all?

At that instant a streak of fire flashed out from Bill's right elbow, along with an ear-splitting report. Annie had answered.

WHEN Bill fairly came to from the shock, Rajah was disgustedly trying to wipe away the smoke and powder of a blank cartridge fired full in his face. He was a stunned and chastened tiger.

And now it was Annie's voice, low, throaty, weak, but incisive, that ordered "Hup!" and Annie's hands on his shoulders that drew Bill gradually backward toward the door of the cage.

Rajah swore a little, chewed on the sulphurous taste in his mouth, and eyed the pedestal askance. Once more, "Hup!" cried Annie desperately. It was the last order left in her.

"Aw, well, what's the use?" snarled Rajah. And slowly, sullenly, he got up on his perch.

It was Rajah's own keeper who slid open the cage door and caught Annie as she fell. He was as white as his collar, and panting.

"Thought she was gone, sure!" he gasped. "Door into the passage was locked, and it took me a week to break in. The door guard ran away. How the devil did you get in here?"

But Bill had no words to waste. Jealously taking Annie's limp figure into his own arms, his eyes on the torn shoulder of her trainer's coat, he began to stride excitedly along the passage. "Bring us to a doctor!" he demanded wildly.

And then, as the girl's eyelids began to flutter, he put his mouth to her ear.

"Me brave Annie—me brave Annie!" he whispered. And the girl closed her eyes again with a satisfied sigh.

New Puzzles

Concealed Geography

The following sentences contain the names of nine foreign cities: 1. A city in Turkey. 2. An ancient city of Palestine. 3. The chief city of ancient Bœotia. 4. A city in England. 5. A city in France. 6. A city in Germany. 7. A city in Scotland. 8. A city in Italy.

1. There is one thing you should be constant in, O plebeian!

2. The Empress Regent thinks she is a Maria Theresa.

3. Old wine, old books, old friends are the best.

4. Jump on, are you all on, don't forget the baby.

5. They say that our small worries are worse than the large ones, but I prefer the small ones for myself.

6. I galloped to Lynn and met Zachariah galloping back.

7. Kind Alfred, in burgher clothes, burnt the cakes.

8. No knowledge, no attainments, can take the place of goodness.

Answers to Puzzles

Puzzles Printed Last Issue

Substitute Letter Puzzle

Edge, agile, shriek.

Summer Styles

Patterns That are Simple and New



No. 3298—Dress with Novelty Sleeves and Large Pockets. 34 to 44 bust. Width of skirt, two and one-fourth yards. Suitable for the spring bride's wardrobe. Price of this pattern is twenty cents



No. 3282



No. 3286



HOT-WEATHER clothes, loose-fitting yet stylish indoors or out, are shown on this page. A frock for home and one for dress wear are shown for both Mother and small members of the family.

No. 3261—Slip-on Blouse with Transfer Pattern for Beading. 32, 36, 40, and 44 bust. The price of this pattern is twenty cents

No. 3262—Gathered Skirt Attached to Lining. 14 to 18 years. 34 to 44 inst. (Order by bust measure.) Width, two and one-fourth yards. Pattern, fourteen cents

Beaded frocks are the rage for summer, and this is an especially simple and attractive design. A transfer for the heading comes with the blouse pattern. Use Georgette crepe, Japanese silk, or fine voile



No. 3293



No. 3286



No. 3286, laid out flat

No. 3282—Child's Smock, Shirred Front and Back. 6 months, 1, 2, and 4 years. (Back is plain, except for shirring.) Pattern, fourteen cents

No. 3286—Child's Rompers with Hat. 6 months, 1, 2, and 4 years. This little romper can be laid flat for ironing. Pattern, fourteen cents



No. 3262



Girdle for No. 3261



No. 3261



No. 3262

Order patterns, with numbers and your name and address clearly written, from the Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.

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That Worthless Pup

By D. E. Spahr

FIVE minutes after the car had left the station of the village, I arrived perspiring and no little disconcerted to find that the next car would not be due for an hour. No better entertainment being available, I took a seat on the station platform and contemplated the village—a mere hamlet consisting of five buildings. The station did duty as grocery store as well as ticket office.

A man came strolling up to the grocery. I paid but little attention to him, for the two dogs that were following him absorbed me. They were extra fine black-and-tan hounds. The younger was an overgrown, lubberly puppy which, after an unsuccessful attempt to get a romp out of the old dog, came over to me and tried to relieve me of my umbrella.

When the man returned he found us in a good-natured scuffle.

"Fine young dog," I remarked. He looked at me rather disgustedly for a minute while he lit his pipe, and said: "That's the oneriest, no-accountest, worthless, good-for-nothing pup that the Lord ever made."

"What do you call him?"

"Oh, I call him Trailer, but I ought to have called him Villa. Say," he lowered his voice confidentially as he took a seat on the bench, "I got that pup when he was no bigger than a rabbit, just four big feet and a mouth, and I have had him only about a year by the calendar, but with what I have gone through with him it seems like forty."

"He seems to be well bred," I ventured.

"WELL bred! Oh, yes. His breeding is way up in G. But for that matter so was mine. My father was a preacher, high up, honored, and just look at me. Live in a little old cabin and possess two dogs, including this cantankerous pup. Breeding, bah! I have to get up in the night to feed him to stop his howling, and spend my days rescuing him from horses, wagons, and autos. He's been kicked, run over, short-clubbed, poisoned, but you can't hurt him. Old Drum there sets him a good example, but little he cares for that. For that matter, I never followed a good example myself, though."

"Old Drum there is his father, and what that dog has to put up with is

simply scandalous. Trailer has made life miserable for him, pulled his ears, bit his legs when he was tired and sleepy, grabbed the meat out of his very mouth when he was hungry, and pestered and tormented him till I know he has wished he was dead. Didn't you, old Drum?"

The dog, hearing his name called, looked up with an intelligent expression as though he understood and assented to it all.

"This has been a year of tribulation for old Drum and I. But we ain't goin' to raise any more children, are we Drum? We have been trying to train him to hunt coon, but you can't teach that fool pup anything. I guess he takes after me in that. Last night it was warm, with a south wind and a hazy atmosphere—just a royal night for coon. And old Drum had been following me about begging to go hunting, so we started out.

"WE WERE so disgusted with Trailer that we locked him in the hog house. But we hadn't got to the first woods hardly until we heard an unearthly howling, and that pup had got out and followed us and was fast in the fence, and I had to go and let him through. Then just as we were getting to where the varmints all congregate, and I was expecting every moment for old Drum to strike a trail, that darnation pup jumped over a log upon an old sow and eleven pigs, and she took him. He came running to me howling worse than a pack of hyenas. I fought the sow off with a club, but Drum was so thoroughly disgusted that, there and then, he quit—laid down on his job. I petted him, talked to him, but to no purpose. He just simply trailed at my heels and pouted. We came to a log and I sat down, and Drum put his head in my lap.

"Thus we sat in despair, totally unmindful of what had become of the pup. All at once there came the longest, loudest, most musical bay we had ever heard. Old Drum's head was up, his ears forward, and he was all alert in an instant. It came again, and Drum was gone. The pup had started a trail. I followed tearing through the brush like a hurricane. They crossed the big woods, for the beast was evidently making his den in the big tree in Jones's clearing. But the trail kept getting hotter and hotter, and soon they crowd-

ed him so close he finally had to tree. "When I arrived that pup was trying to climb a small tree in which the coon had taken refuge. I climbed the tree and shook him down, then dropped down myself as quick as possible and caught Drum. I wanted the pup to fight him alone. So I stood back and held Drum, and watched that pup get his deserts. Drum and I wanted to even up with him, and we did. He just naturally laid down and howled like a Comanche till the coon let loose and started to run, and then his courage came to him, and he just literally jumped on to that coon and shook and chewed him up until there wasn't a whole bone left in his body."

"What will you take for that no 'count pup?" I asked. "I want to buy him."

"Say, Mister, I don't owe you no grudge. I've got nothing agin' you to cause me to sell you that worthless pup."

"Would you take that for him?" I said, displaying the end of a ten-dollar bill.

"Ah, go long! Take your greenbacks and buy you a victroler or a pianner player. The music of Trailer and Drum is good enough for me, and the only kind I know enough to appreciate."

And he and his dogs went on down the road.

Just a Letter

NOW, there is that old friend who moved out of the neighborhood a year or two ago. You said when he went away, "I'll write to you," but you haven't done it. He feels badly about it. Get out your pen, ink, and paper, and send him a good long letter, filled to the last corner with the story of the old home since he went away. You never will know how much joy that will bring.

The Gingerbread Man

By Alice Crowell Hoffman

THE Gingerbread Man, Who lives in a can On grandmother's cookie shelf, Just waits all the day, For Grandma to say, "Now, my dear, go help yourself."

Yes, he smiles at me Right lovingly While I eat his raisin eyes. I nibble his toes And his icing nose, And he never even cries.

Oh, it is a shame! I know I'm to blame. There's nothing to do, you see, But to eat my friend And so put an end To all of his misery.

Indigo Bunting

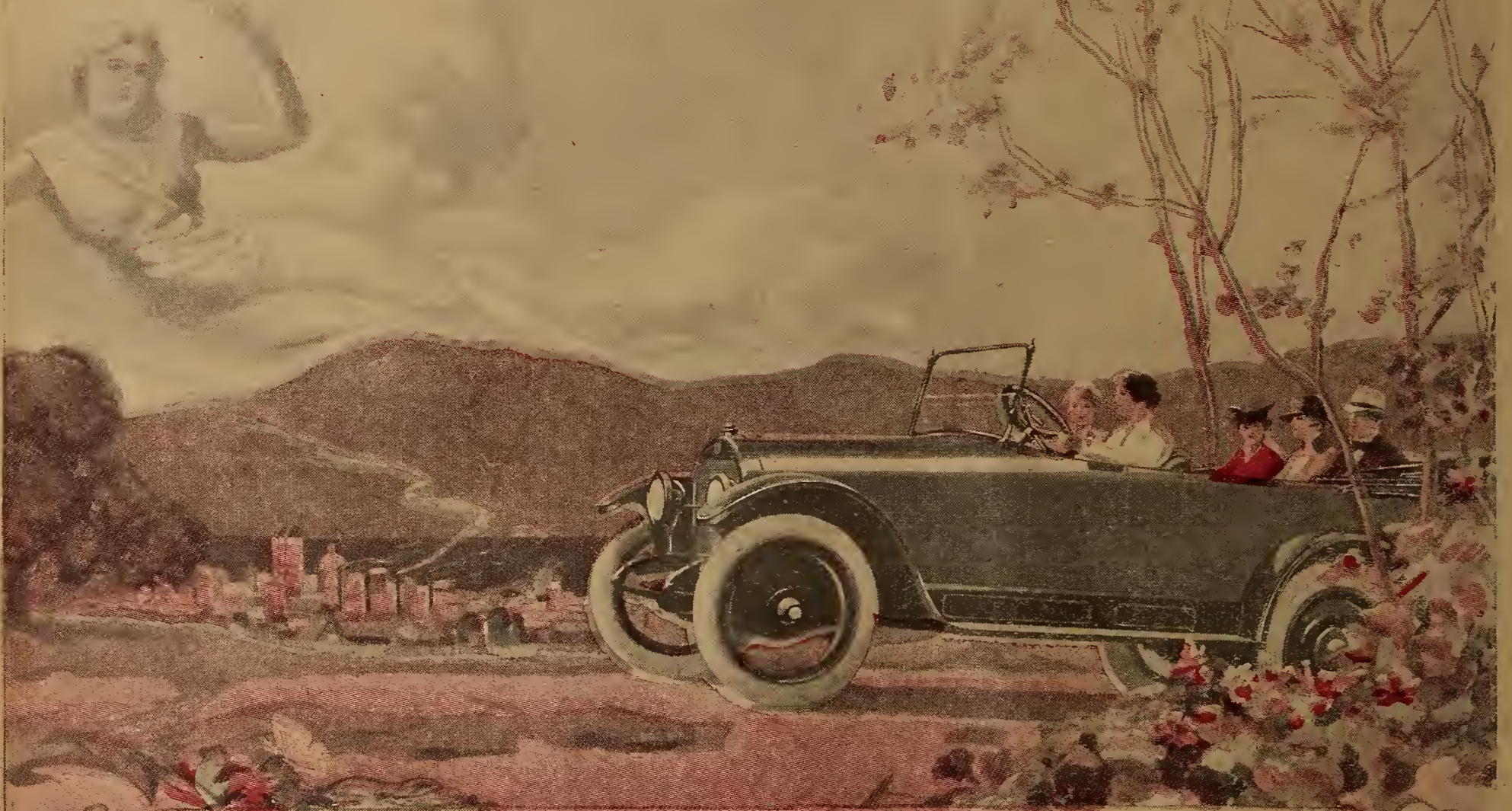
ONE morning last summer, I passed a small tract of woodland and came to the brush-grown bordering fields, ideal indigo bunting territory, where these little birds were unusually common. As one after the other of the boys or young ladies would point out specimens, they grew excited. Then, when a most handsome specimen perched in a small tree that overhung the roadway, just ahead of us, I let out an exclamation that indicated that I had grown as excited as the pupils.



The small size of the indigo bunting, the dark blue coat, and blackish tail and wings, the short conical bill, should distinguish it from the larger, common bluebird. The immature are motley specimens of blue, black, and brown, while the females are rather like sparrows in appearance. The song is a sweet, canary-like warble that can be heard through the hot summer days when our other birds are usually silent. They rank high as the farmers' helpers, their food being weed seeds, while the young are fed an insect diet.

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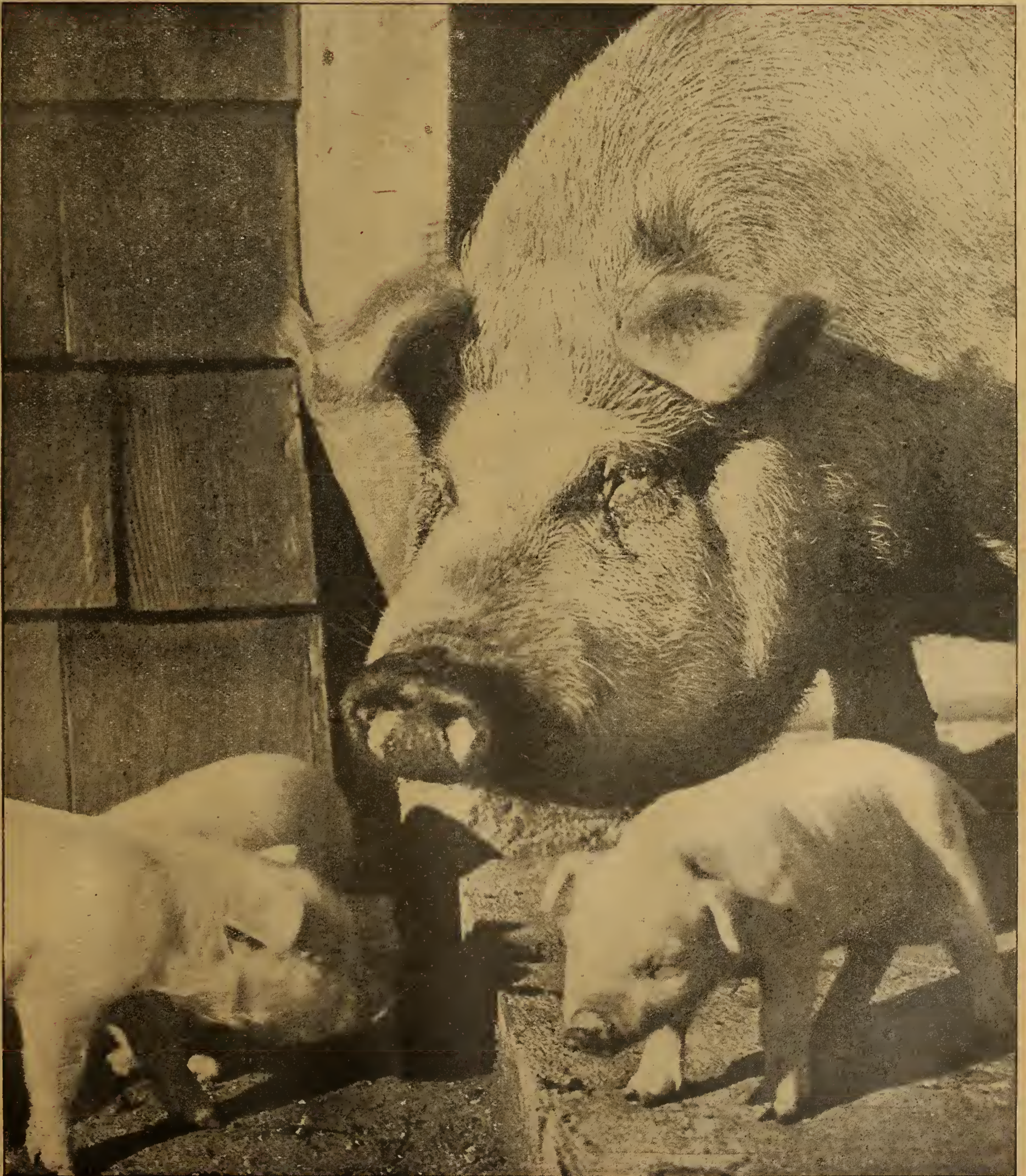
The National Farm Paper - Twice a Month

ESTABLISHED 1877

5 cents a copy

Saturday, June 16, 1917

Eastern Edition



PHOTOGRAPH BY CLARENCE A. PURCHASE

The Pork Route to Independence

The New Hupmobile

Dominant Dollar-Value In This Beauty-Car

Bright finish, long grain, French seam upholstery

Improved cushions and lace type back springs in seats

Leather-covered molding finish along edge of upholstery

Neverleak top, black outside, tan inside—waterproof

Tonneau gipsy quarter curtains, integral with top

Hupmobile-Bishop door-curtain carriers, folding with curtains—exclusive feature

Large door pockets, weighted flaps

New body color—Hupmobile blue

New variable dimming device graduates brilliance of head lights

Tail lamp independent of other lamps

New soft operating clutch

The new Hupmobile has shown itself supreme in beauty-value, in performance-value. From this supremacy comes dominance in dollar-value also.

You sense this fact with your first glimpse of the car. Closer study is wholly convincing. The Hupmobile does dominate in dollar-value. No room is left for doubt.

In January the Hupmobile became the year-ahead beauty-car. Long before, by performance, it had won distinction as the world's best Four.

A Year Ahead In Beauty

Look about you. Mark the cars you see. Try to put them on the same beauty plane with the Hupmobile. The more you see of others, the higher looms the Hupmobile.

Beauty is sound value today. Hupmobile beauty is year-ahead beauty. We added 25 style features, many exclusive. Even next year, and the next, allowing for new refinements, its style will be good. That is why beauty, in this case, is value.

To get this extra beauty, this greater value, we increased our production. We built factory additions. We installed new machinery. We invested almost another million in buildings and equipment. To build more cars and absorb the cost of greater beauty, without lowering quality.

So you get more than the year-ahead beauty-car. You get the year's most brilliant performer.

The car with the motor which other makers term "fit for a \$3000 car." The same costly clutch, transmission and rear axle that have helped build Hupmobile reputation for long-life. You get all the old-time Hupmobile goodness.

Holds Its Lead in Performance

And with it, performance that is supreme. For the Hupmobile has won not only over other fours. It has won over sixes, eights, twelves. The new Hupmobile holds the same supremacy.

Again and again it has demonstrated its superior pulling power. In deep mud and stubborn sand; on high hills and mountain climbs. Not alone in dealer-demonstration, but in owner-service everywhere.

Facts That Will Prove Themselves

Beauty-value, performance-value, dollar-value. Some cars give you one or another in some degree. The Hupmobile gives all, in heaping measure. It is the year-ahead beauty-car. It has proved its sheer mechanical ability to dominate in performance. It stands at the top in dollar-value. These facts are unquestioned.

Test it and compare it as you like. We are confident of the outcome.

Four Models—Two Chassis

Five-passenger Touring Car, Roadster, Sedan, 119-inch wheelbase; Seven-passenger Touring Car, 134-inch wheelbase.

Hupp Motor Car Corporation
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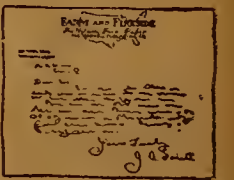


The Mark of Superior

Motor Car Service

The Editor's Letter

A Farm Woman's Sound Ideas on Recreation



IT IS characteristic of Americans to do things quickly. We like to see results. The United States is known the world over as an efficient nation; we have the reputation for making a success of the things we undertake. We make mistakes—plenty of them—but they are soon forgotten, buried under an avalanche of progress.

I suppose this national temperament is due at least in part to our youthfulness. Great Britain has been fifteen centuries in developing. The German Empire has traditions at least 700 years old, and the foundations of France are buried somewhere in the Middle Ages.

But here in the United States scarcely nine generations of human effort have transformed a wilderness into a nation that is now the hope of the civilized world. This period of rapid development and growth must help to account for the virility of the American mind, which is never at a loss for ideas with which to carry out most any program.

At present we are deeply interested in the duration of the war, control of U-boats and seeing Old Glory flying over former German positions. There is a temptation to advance decided opinions as to how these things should be brought about. When we feel strongly on a subject, we naturally express ourselves strongly, and nearly everybody has a private scheme of some sort for solving the nation's problems. Some advance their ideas modestly; others are insistent to the point of boring their friends.

But cool common sense should tell us that, in the handling of big problems, trained ideas are mostly likely to be best. By trained ideas I mean the logical reasoning of those men who have studied the problems and understand the multitude of details bearing on them. One of the best patriotic speeches I have heard since war was declared was a simple remark addressed to a group of men on a street corner. Each had a scheme for capturing submarines and bringing them home to New York harbor like dead fish on a string. A public-school principal who happened along stopped to get the drift of the discussion. But in a moment he withdrew, remarking, "Well, boys, I'm willing to let Edison and the Navy settle that question. It's a little out of my line."

This man, by the way, is a close reader of current events and freely exchanges with his friends opinions bearing on the progress of the war. But he is too intelligent to propose definite solutions to problems the details of which he knows are not public property for military reasons. And though active in his own work and in the local affairs of the community, he is satisfied, as far as the drama of world's events is concerned, to be merely an interested on-looker, glad that he is privileged to live in this age.

An incident like this suggests that all Americans are not so lacking in self-control as some social critics would have us believe. But haven't we a general tendency toward talking about the big things instead of actually doing the little things which are needed to make big things? If this country is to become a really efficient nation during wartime, the first application of our ingenuity and ideas may well be made closer at home in the endeavor to increase our personal usefulness.

I THINK you will be interested in the philosophy of a farmer's wife who modestly prefers that her name be withheld. She lives in Kentucky, and she has solved to her own satisfaction, and apparently that of the family, the problem of her recreation, and with it the problem of her work. Her purpose in writing me was to suggest that possibly other readers of FARM AND FIRESIDE might benefit by her success.

"In every paper we read," she begins, "there is so much said about work and ways of doing work, but very little about rest. I don't mean to underestimate the value and importance of work, for idleness is Satan's workshop. I do all my housework, cooking, washing,

ironing, and sewing for a family of five. But every few days I let some things go undone, temporarily, to take a

drive of eight or ten miles with my husband in our machine. He always wants me to go with him, and there are very few times that I don't go. After we return I soon get the work done, for I am rested and feel so much more like doing it. This has gone on now for three years, and I am always up with my work. Many women work their lives away and then censure someone else, especially their husbands. But a woman has no one to blame but herself, for she knows her own strength best. What if you can't get everything done you planned. Remember there are other days. Don't say, 'I haven't time.' There is no greater infringer on needed rest than the common excuse, 'I haven't time.'" Then she proceeds with some specific examples of her former failings that are still prevalent the country over.

"LET us," she says, "dress our children plainer and feed them on simple, well-cooked food. Then we shall have more time to rest and to train our children's minds and spiritual natures. It is all too easy to fall below our real standard of living and thinking by becoming a slave to material and physical duties. Every woman should rest an hour or more each day. And when some member of our family is sick at night and I lose my needed rest, I make it up by sleeping part of the next day instead of trying to do a big day's work and consequently becoming ill and cross."

"I used to do just such foolish things, and be so tired I could scarcely sleep when night finally came. But I have learned better. It ought not to take us forever to learn some things. Our hearts ache for the wounded and hungry people over in Europe. What a sad lot! Let us help them all we can by sending money, food, and anything that will be useful. But we must not let our minds dwell on that too much if we are weary or depressed."

"Take up some good book or farm paper and read. Recreation, knowledge, valuable experience—are these not worth taking time for? Certainly. Books and papers are the chief source from which the world gets all it knows. Reading leads one out of the old channel or rut. Read aloud. It is a mother's duty to maintain a pleasant companionship with husband and children."

"You mustn't think I sit with my hands folded, for I like a nicely kept house, but I have learned to economize my time and work to advantage."

Notice that most of her letter is about recreation, but it all leads to telling how much better she does her work. This farm woman has unconsciously given a convincing efficiency talk. For industrial experiments have proved that the human body when allowed frequent intervals of rest can do more actual work than when kept working continuously.

To some who read this the very suggestion of recreation under such conditions may be distasteful. But just as the French keep up their spirits by joking about hardships and even death as a relief for their pent-up feelings, perhaps we also can raise our personal efficiency by giving mind and body frequent and refreshing changes of atmosphere. Recreation—do not confuse this with wanton amusement—is as much a form of rest as a sound night's sleep. This Kentucky woman's story is an example of practical American progress, having its origin in sound thinking followed by a wise conclusion. And I'll allow the reader to decide who is more worthy of praise—the person who, professing patriotism, ignores his own problems and gropes for a solution to national questions which he only partially understands, or this wife who has worked out a plan by which she keeps strong and well while doing all the work for a family of five and at the same time is a close companion to her husband and children.

The Editor

FARM and FIRESIDE

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No. 18

Marketing Alfalfa Hay

Oklahoma Grower Tells How He Sells This Valuable Crop

By E. R. ADAMS

MANY growers of alfalfa used to figure on marketing their entire output in the form of hay, but the passing years have proved the folly of this plan, for the rains would come and catch the grower with a lot of hay in the swath. Cut alfalfa that has been rained on will seldom make No. 1 hay. To-day, on many big hay farms, the owner is feeding a large portion of his lower grade hay to beef or dairy stock, and is realizing more money from the cheaper hay he feeds than from the Choice or No. 1 grades that he ships to market.

The seed crop is another item in alfalfa-growing that is receiving more attention here in Oklahoma than formerly, when most growers were raising hay for market only. At that time the threshed hay from a seed crop was considered almost a total loss. Threshed hay, as a rule, will not bring enough to pay marketing expenses. When saving a seed crop the grower is certain to lose two cuttings of hay, but with seed at prevailing prices, and a bunch of young stock to eat the threshed hay, a seed crop is surely a mortgage lifter.

One cannot produce and market a ton of alfalfa hay for less than \$4 and realize a profit. Experience proves to me that the actual cash outlay necessary in marketing a ton of hay from our fields, under favorable conditions, is \$3. This accounts for labor only; interest and taxes are not considered, and we are only three miles from our shipping point.

Unless the demand is strong it does not pay to ship hay that grades lower than Standard—better feed it. The next best thing to do is to sell it to local feeders.

Baling from Windrow is Best

A FEW rules for grading alfalfa hay may be useful: **CHOICE ALFALFA**—Shall be reasonably fine, leafy alfalfa of a bright green color, properly cured, sound, sweet, and well baled.

NO. 1 ALFALFA—Shall be somewhat coarse alfalfa of bright green color, or reasonably fine, leafy, of good color, and may contain five per cent foreign grasses; must be well baled, sound, and sweet.

STANDARD ALFALFA—Shall be coarse alfalfa of bright green color, or leafy of fair color, sound, sweet, and well baled. (This is the lowest grade to ship.)

NO. 2 ALFALFA—Shall include alfalfa somewhat bleached, but of fair color, reasonably leafy, not more than one eighth foreign grasses, sound and well baled.

NO. 3 ALFALFA—Shall include bleached alfalfa or alfalfa mixed with not to exceed one fourth foreign grasses, but when mixed must be of fair color, sound and well baled.

NO-GRADE ALFALFA—Shall include alfalfa not good enough for other grades, caked, musty, grassy, or threshed.

One can always find a market for Choice or No. 1 alfalfa hay, but many times it is practically impossible to sell the lower grades at a profit. No matter how much care one may use, it's a hard matter to stack alfalfa so it will keep in perfect condition. Even when the best of stack covers are used, the sides of the stack will bleach and mold; and unless this outside hay is carefully removed, enough will get into the bales to lower the grade from a possible Choice to Standard.

Loose hay that has been placed in a close



Even with modern machinery, one cannot produce and market good hay for less than \$4 a ton

barn, if properly cured, will often bale out a good grade—much better than if stacked—but the finest hay is that which is baled from the windrow, and pressing from the windrow is the cheapest method of all. Handling expenses are reduced to a minimum, and hay is saved in better condition than in any other way.

Alfalfa that is allowed to mature fully before cutting will produce more hay and a better grade than if cut a week earlier. The purple bloom on well-cured and well-baled hay goes a long way in securing the much-sought-for Choice grade when it goes on the market.

If alfalfa hay has been perfectly cured before it is baled, it can be loaded direct from the press into cars for shipping, but if the hay is the least bit damp it is likely to heat or "set" in the bale and go on the market in bad condition. There's little demand at any time for heated hay.

When baling out of the windrow, the first few bales run out in the morning are sometimes damp and heavy on account of dew. These bales should be

piled separately and not allowed to go in a car with the better hay, for it does not require much foreign moisture to start heating in a car of new hay when closely loaded and the doors are closed.

In ordering cars for the shipping of hay it is well to insist on a certain size and kind. One can put from 400 to 500 standard bales of hay in a 40-foot furniture car if placed on edge and lengthwise of car. Naturally, the higher the car the more bales you can get in. By having a large car it is an easy matter to get in your minimum capacity, which in most States is 24,000 pounds on shipments going outside the State and 17,000 for shipments within the State. But remember this, you have to pay freight on the minimum capacity whether you get it in the car or not—that's up to you. These weights are based on a car 40 feet in length, inside measurement. With shorter cars the minimum capacity is somewhat lower, while with longer cars it is higher.

I have had considerable dealings with many classes of commission men. When shipping hay to a strange market it is a good idea to connect with a reputable dealer before you start loading. Pick out a man or firm which has been established several years, and which can give you something more than bank references. I know a fellow in the commission business who has changed his business name and slogan three times within the last two years, yet he can give you bank references galore.

Grade Close When Loading

HE HAS to play square with his bank or they would close down on him in a minute. The talk of a satisfied customer is the best reference any firm can have. Try to locate a concern which makes a specialty of satisfied customers and you don't go wrong.

When you connect with a reliable man or firm, don't be in a hurry to change. Ninety-nine times out of a hundred you will not better matters by making a change, for the plain-spoken word of an honest man carries conviction, and he can make more and better sales than the crook who promises much and delivers little. There's no logical reason why you cannot ship your surplus hay and make a neat profit by doing so. You may rest assured that the local buyer is not buying hay for amusement. No, he's in the game for the profit of from \$1.50 to \$2.50 a ton he takes because he thinks he is a smarter business man than you are.

Of course, as in every other business, you will find dishonest men among the hay dealers in almost every large market, and you must ship your hay with your eyes wide open. There is a class of dealers who will gladly beat you out of every penny they possibly can and then grouch because they can't trim you some more. But others—the majority perhaps—are as straight as a string, and apply the Golden Rule to all their business transactions.

The secret of success in shipping hay is to grade close and see that ragged, weedy, grassy, and caked bales are not allowed to get in the car. Load only hay that is worth the money you expect to get from the other fellow. Keep a close watch on the markets.

A few dollars spent for daily papers will prove a mighty good investment if you expect to get the most out of your alfalfa.



Alfalfa hay that has been stacked in the field will bleach and mold to a certain extent even when the greatest care is used. Portions so damaged should be removed before baling

Dry Vegetables and Fruits

Saving the Perishable Foodstuffs May Turn the Tide of War

By ROBERT R. RUTLAND

EVERY fact bearing on the practical means of preserving surplus food products is now of nation-wide interest and importance. It was my good fortune recently to get first-hand views from a number of federal specialists in the Department of Agriculture who are now devoting their time and energy to working out new plans and improving old methods for preserving surplus garden and orchard crops by drying or desiccating. The serious shortage and costliness of tin cans and the need of these cans for packing army and navy supplies make the commercial and home preservation of surplus perishable food supplies by drying an absolute necessity. After this, when the supply of glass cans are filled, drying and evaporating should go steadily on to the end of the season.

We can well profit by the experience of the far-sighted Germans, against whom the Allies and our country are now contending, in the matter of preserving food for future use by drying. Germany has successfully dried fruit and vegetables on a large scale for years, and the dried products now form a substantial part of the nation's diet. The Germans do not can products as extensively as we do, and the dried food largely takes the place of canned fruit and vegetables.

The Allies have found that vegetables are a necessity for the men in the trenches, and in the fall of 1915 they contracted for great quantities of dried vegetables which were purchased and dried in western New York. Last year, partly because of poor crops in that section, vegetables were purchased and dried in Canada. Much may depend on our ability to be able to furnish dried vegetables and fruit products to the Allies this fall and winter in large quantities. It has been demonstrated that the dried products, even though crudely dried, are acceptable to the soldiers and sailors.

A few large plants are now in operation in this country where drying and evaporating are being carried on to the fullest capacity of the plants. Some of the best commercial driers are of the "tunnel" type. The products to be dried are placed in trays in a large tight room on one side of which are large coils of hot steam pipes. These trays are slowly moved in front of the pipes and the moisture is evaporated from the products. In order to facilitate the evaporation, some driers have large electric fans which force the air over and through the drying products. Of course these large commercial driers can be operated to advantage only where there is a large surplus of vegetables and fruits that can be supplied steadily and in quantity sufficient to do the work economically.

An important consideration when contemplating the drying of surplus perishable products is that when dried it is not necessary to market the material at a specified time when the market may be oversupplied.

Drying Avoids Rush Marketing

IT IS now the intention to renew the usefulness of some of the apple evaporating plants that in many cases proved unprofitable when in use several years ago on account of the small demand at that time for dried and evaporated products. There is also a lively interest now being manifested in municipal and community drying undertakings in the hop kilns in those areas of New York, Oregon, Washington, and California where hop growing and drying has in the past been more important than at the present time. Also in the South where several crops of vegetables are produced during a single season.

The long-practiced drying processes in the homes of our forefathers had until recently become almost a lost art. We now have a better knowledge of sanitary processing and handling dried food products, and can save enormous amounts of valuable food in the aggregate by drying the surplus which heretofore has been fed to stock or allowed to decay for lack of a profitable market.

There are two general types of appliances which have been made use of for drying products in the home, and several modifications of each type are now being put into active use. One of these is a modification of the cabinet type of drier,

made of galvanized iron something after the plan of a large oven with a tight-fitting door. This type of container is provided with a number of trays the bottom of which is made of coarse-mesh galvanized wire. Some of these cabinet forms of driers have the bottom tray made out of metal so that water can be kept hot in it to prevent danger of overheating or burning the product. In either case, these cabinets are placed over a cook stove or heating stove containing a slow fire in a room where the heat will be retained and yet ventilated to allow the moisture to escape at the top of the room.

Another form of drier that has been found to give good results by the Department of Agriculture is a series of trays tiered up one above the other and swung up over the stove so that the drying may continue when the stove is being used for other purposes. Of course, both of these plans are essentially the

dried beyond the danger point of decaying or molding. Indeed, by the help of the electric fan natural summer temperature will dry the products as well or even better than a moderate artificial heat, and give a better quality of product. By means of the fanning treatment the government officials have successfully dried sweet and Irish potatoes, tomatoes, apples, corn, peas, string beans, onions, etc., when these vegetables were thinly sliced with a mechanical slicer. Drying by the fanning process gave a cured product that was of good color, and the flavor of the vegetables was well retained. Another plan is, first, partially to cook vegetables, then run them through a meat grinder, and the shoestring form issuing from the grinder has been found to dry out readily and give a quite satisfactory product.

Advantage is also being taken of the sun-drying method, using protected locations like porch roofs and portable frames set at an incline to get the fullest drying power from the direct sun rays. Some of the trays used in this plan of sun-drying are ten feet long and three or four feet wide, using galvanized wire screen of one-fourth-inch mesh. These trays are made of uniform size, so they can be readily stacked one above another and covered with oilcloth or tarred paper to protect them from dew and rain. This plan of drying is of course more efficient in the warmer climates and arid and semi-arid sections of the country.

With any plan of drying followed it is highly important to have nothing go into the drying trays or containers except perfectly sound, well-flavored products. A small piece of spoiled or bad-flavored fruit or vegetable will destroy the value of the whole container in which it is stored. Insects of all kinds must be excluded by means of cheesecloth or, better yet, frames of wire-covered screen to enclose the trays or cabinets.

A most important part of all methods of preserving food products as described is slow drying. Too rapid drying hardens the outside, forming a tough shell, and retards complete evaporation. It also injures the quality of the finished product. A temperature not over 140 to 150 degrees Fahrenheit is best. Drop the sliced fruit into a bath of salt water for several minutes to prevent the fruit from turning dark.

Making Dried Fruit Attractive

THE fruit coming from the drying trays should not be so dry as to snap when broken, but dry enough to show no signs of the natural fruit grain. An even whiter, more attractive appearance is secured by treating the sliced fruit to the fumes of sulphur by placing the trays over burning sulphur in a suitable box. After the sulphur gets well ignited, keep the fruit in the fumes for an hour or two. A pound of sulphur will treat 600 to 800 pounds of fruit.

Plums are improved by dropping into a solution of boiling lye (one pound of caustic soda to 10 or 12 gallons of water). Plums are left in the lye only five to ten seconds, and then the basket is dipped into fresh water. Before going into the drier, cut the plums open and remove the pit. Peaches and apricots are sometimes peeled and sometimes dropped in lye.

Cherries need nothing but pitting, and are also dried without pitting.

Vegetables like Irish and sweet potatoes, sweet corn, string and shelled beans, require particular care to prevent souring during the drying process.

Raspberries, blackberries, loganberries, and huckleberries are usually overdried and become like shot in hardness and the quality suffers by thus overdrying. The right stage with berries is when they can be squeezed without showing stain on the hands.

It is a safe precaution before storing all dried products to keep them in a screened warm and rat-proof airy place like an attic, in baskets or other ventilated containers where they can be examined daily for a week or two to make sure there is no interior moisture that might cause spoilage were the dried products at once tightly stored.

If you desire additional information about any of the driers or methods described in this article, write to Mr. Rutland, care of FARM AND FIRESIDE.

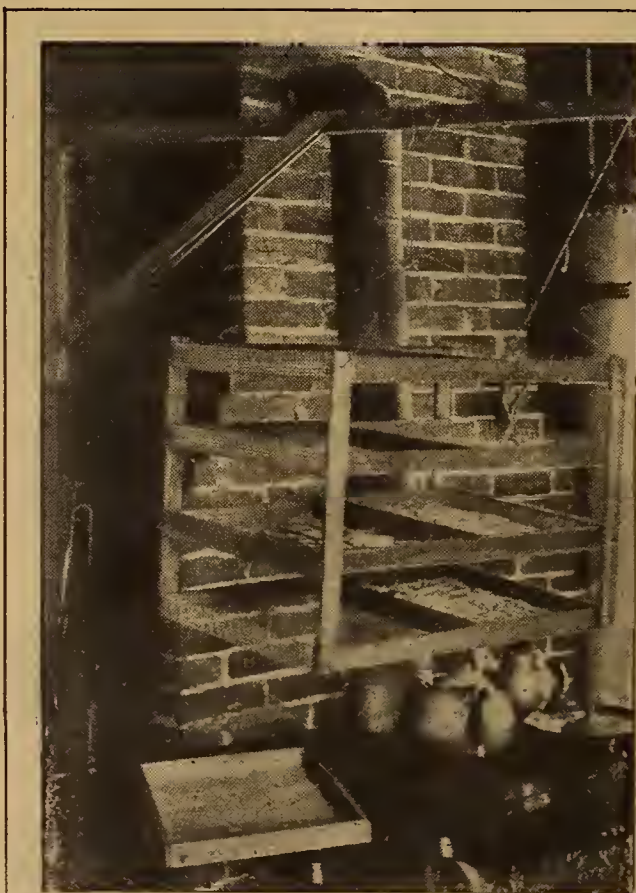


Improved shredders have superseded tiresome hand slicing, and deposit snap beans, carrots, onions, etc., directly into drying trays

same as have been used in the homes of many farmers years ago, but many of the present generation have but a very imperfect knowledge of how the drying process was then carried on. In any case where trays are tiered one above another there must be ample space between the trays to allow a good circulation of air, for if there is dead air, mold and decay of the products will soon ensue.

Where electric power is available an electric fan has proved to be a great hastener of the drying process by circulating the warm dry air over and through the drying products constantly. An arrangement for use along with the electric fan is to tier up trays a foot wide and two or three feet long and place the fan so that the fullest advantage of the drying current will be secured. The advantage of the electric fan for circulating the air is that very much less heat will accomplish even better results as the moisture from the evaporating products is carried away and fresh warm air takes its place, thus allowing the drying to go on steadily until the product has

sliced fruit into a bath of salt water for several minutes to prevent the fruit from turning dark.



Crude but effective home-made suspended drier. Cooking and drying go on at same time



Close view of machine potato slicing, making possible any desired thinness of potato "chips"



The daily egg receipts in New York City require about 50 dray or motor truck loads of 100 cases to the load to deliver them



Live poultry when unloaded from the great steel cars is delivered to dealers in live poultry, and slaughtered before reaching the retailers

Our Greatest Egg Market

How New York City Handles Its Poultry Products Business

By H. E. BOTSFORD

I RECENTLY had the privilege of being one of an observation party, under the direction of the poultry department of Cornell University, which had for its object the study of poultry products marketing in New York City. I feel sure FARM AND FIRESIDE readers will be interested to learn what we discovered.

The bulk of eggs entering New York City are now sold through the commission houses, and are gathered up through the country by grocers and others. The eggs receive no especial care, neither at the farm nor by the collectors. In many cases practically as much is received for cases containing a few "rots," as if they were not in. About 400 cases are bunched together and shipped by grocers or dealers as a carload to New York City.

There are two New York exchanges where the prices of these eggs are determined day by day. As we entered one of these exchanges when operating we saw in front of the members a large blackboard, arranged as here shown:

No.	Seller.	Pkgs.	Grade.	Off'd.	Bid.	Bidder.	Sold to.
1...
2...
3, etc.

A clerk writes the offers and bids on this board as they are called out by the commission men in the room. For example, Mr. X called out, "1 car, Illinois seconds, 33." Accordingly the entry was made as follows:

No.	Seller.	Pkgs.	Grade.	Off'd.	Bid.	Bidder.	Sold to.
1...	X	car	Ill. 2d.	33

Next we heard a call: "Offer 32½ on No. 1." If a higher bid is offered, the previous bid and bidder is erased and the higher one entered. When the seller agrees to accept any bid made on his offer he says so, and the buyer's name is entered in the space provided. The highest bidder previous to the sale is left on the board. When the exchange closes, the prices on these various grades are taken and go far in determining the prices of eggs for that day. These prices are usually very close to the prices we get in our price quotations.

From 3,000 to 5,000 cases a day are handled by the wholesalers, and due to this large business little candling is done by wholesalers. The jobbers usually buy from the commission men, and handle from 300 to 500 cases a week. The jobber has professional men candling the eggs. These men work about eight hours a day and candle from three to four cases an hour, depending on the time of year. Warm weather and fertile eggs slow down the candling process, due to the poorer quality of the eggs, and this, of course, raises the price to the consumer.

Eggs are usually graded into:

- FANCIES—Clean eggs with full, solid bodies, small air cell and indistinct yolk.
- FIRSTS—Yolk heavier and darker, air cell larger, showing more evaporation.
- SECONDS—Yolk much darker, settled and contents shrunken.
- CHECKS—Cracked eggs.

Eggs are also sorted as to color and size. This work is necessary before going to the retailer. A few jobbers pack eggs in cartons, and then pack the cartons in a case. All of this increases the price.

One jobber gave me the proposition they had to face: "Suppose I pay 30 cents a dozen for a case of eggs from the wholesaler. On candling I may find two dozen bad eggs. That puts the price of the rest up

about two cents a dozen. Itemized it is like this:

Original price	30c
Two dozen bad eggs	2
Labor in candling	$\frac{1}{3}$
Carton	1
Packing in carton	$\frac{1}{3}$
Transportation	2
	<hr/>
	35 $\frac{2}{3}$ c

"This brings the cost to 35 $\frac{2}{3}$ c and we must receive our profit when selling to the retailer, as we can't keep our establishment without some return."

There are ways in which both producer and consumer can benefit in the price of eggs. The one by producing infertile eggs, candling and shipping eggs of good quality himself; the other by demanding good eggs regardless of package.

Quality Always Commands Premium

THERE are firms in New York City who buy their eggs from a collector in the country. The eggs are brought to a central point, and are shipped daily to New York. At one of these places the manager explained their method of operating, then he said: "We've got one man who always ships us fine eggs, about 10 cases a day. . . . Jim, get down one of those cases and open it up." The eggs proved to be as he stated they would. They were white, large, carefully packed, and, he said, always of fancy quality. Because these eggs were candled before being sent to New York, and because they could always depend on the quality, the shipper was given two or three cents above the highest market quotations. All eggs are candled, packed in cartons, and sent to distributing branches from the New York receiving stations on wagons, to be delivered to the retailer or consumer along with other goods.

It is often possible for poultrymen to make an arrangement with a dealer in a city whereby he will agree to take a certain number of eggs daily or weekly and pay a premium for quality. Accordingly, where one producer may not have enough to retain such a market, a number of poultrymen in a community may combine their shipments, each one doing his own candling and grading, or, what would in most cases be better, establish a central receiving

station where eggs are brought, and have the work done and shipments made from there. More associations of this sort are sure to come and a better product will be put upon the market. Dealers appreciate receiving such high-quality goods, and they soon know from whom they receive them, and are willing to pay a premium for these eggs when regular shipments of sufficient quantities to make it an object can be depended upon.

Another method of selling—which, more than any other perhaps, is the dream of the producer—is the trade with hotels, sanatoriums, and the like. Accordingly we made a visit to one of the largest and most exclusive hotels in New York City. We were conducted through the kitchens of this hotel, where evidence of management efficiency was plain everywhere. The steward, later, talked with us about their methods of purchasing eggs and poultry. Both white and brown eggs are used by these high-class hotels. But for every use where the shell is exposed when the egg is placed on the table—as when boiled—the white-shelled eggs are used. For cooking and baking the brown-shelled eggs are used. About 600 dozen eggs a day are required by the hotel we visited, one fourth of these being white. From 95 to 98 per cent of all eggs used are purchased from the producers, to whom 2 to 5 cents is paid above the highest market price quoted for near-by henry whites or browns. The remaining two to five per cent are emergency orders, and are purchased from jobbers in the city or from retailers. The hotels are steady customers, keeping the same shippers for many years. They do not make contracts, as they use more eggs in the fall than in the spring, while the producer has more in the spring than in the fall, as a rule. So, rather than cause the producer inconvenience in filling an order, the hotel steward prefers to take what he has and fill out any discrepancy himself.

The shippers are expected to candle all eggs before shipping, for the eggs must be fresh and contain no blood spots. One musty egg will spoil a large amount of cake. Shippers may stamp their eggs if they wish, but it is not required, as the system employed in the kitchen is such that any trouble resulting from an egg not up to standard can be traced to the shipper. Hotels desire that the shipper pay the express, otherwise it involves much more trouble to straighten out the transactions at the receiving end.

Poultry for these hotels is purchased locally for the most part. It is absolutely necessary that broilers, roasters, etc., be very nearly the same weight. Broilers, for example, must not vary more than two ounces either way from the average. For this reason, and because it is so very difficult to secure uniform products direct from the consumer, they are obliged to purchase from the large dealers in dressed poultry. Birds of the following weights are used:

- 1 lb broilers.
- 1½ lb broilers, served whole or one half to person.
- 2½ lb broilers, served to two people.
- 3 and 4 lb roasters.
- 5 lb fowls and over, used for soup.

The Leghorn cannot be used for this purpose, as it is too small, except for the small broiler. Poultry is received with head and feet on and undrawn, one to two dozen to the box. They may be shipped in barrels, a layer of ice on the bottom, then alternate layers of poultry and ice.

The trade with hotels, hospitals, etc., is very desirable, but it must be remembered that quality goods are essential, and that they must be supplied in sufficient numbers to be an inducement.



A commercial expert can candle 10,000 to 12,000 eggs in eight hours—at the rate of 25 eggs per minute—for the big jobbers before reaching the retailers



The Eyes of America Turned on Her Farmers

AT last the American farmer occupies his rightful place in the esteem of the world. Manufacturers, merchants, bankers and city dwellers of all kinds heretofore have taken their food for granted and have overlooked the man behind the plow—the man who feeds them.

Conditions today are such that the producer of foodstuffs is recognized as the mightiest force—not only in the welfare and prosperity of the nations of the world but in the very existence of nations and their peoples.

A noticeable feature of the situation, which has shown the American farmer to be on a high moral plane as well as holding an important industrial place is the fact that he has not taken advantage of conditions to extort unreasonable prices from his fellow Americans. He has patriotically increased his production in order to prevent famine prices instead of keeping production down to force prices up.

He has shamed the food speculator—though unfortunately his example has not been followed by all manufacturers—particularly among the makers of so-called luxuries; though

many big manufacturers in this country have followed the farmer's lead.

One of the most noticeable cases among those who have kept faith is that of the makers of Coca-Cola. In spite of the enormously high price of cane sugar—the principal ingredient of Coca-Cola—and in spite of the higher cost of its other ingredients the Coca-Cola Company have not raised the price to consumers nor lowered the quality of that delicious and refreshing beverage one iota. Like the farmers they have kept faith with the people to their own cost.

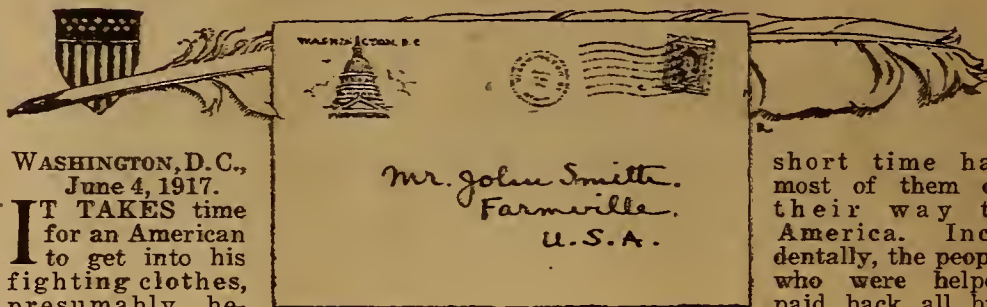
Perhaps the lessons of fair-dealing and helpfulness that the heads of that institution learned as boys on the farm (for they are products of the soil) have strengthened them to stand firm in this crisis. So let us remember that the beverage Coca-Cola, known as the National Beverage because of its great popularity, has proved itself indeed national by doing its bit to keep down the cost of living.



Herbert C. Hoover

The Man Who Directs Nation's Food Problem

By JOHN SNURE



WASHINGTON, D. C.,
June 4, 1917.

IT TAKES time for an American to get into his fighting clothes, presumably because he wears them so seldom. And the war has a much different aspect, now that we're in it, from what it did while we stood afar off and looked on and talked about it.

To-day no phase of the war looms up bigger than the food question. The more the authorities in Washington learn about it, the more momentous it appears. This is not to say in any alarmist fashion that it can't be solved, but it does mean that brains are needed to solve it.

This brings me to speak of Herbert Clark Hoover, the chairman of the food committee of the Council of National Defense, and who has lately been chosen by the President to administer the general food problem of the country.

Mr. Hoover is a man whose soul goes out to humanity. He has sympathy for the men and women on the farms of America by whose labor the foodstuffs of the nation are produced, and he has an understanding, too, of the problems of the consumer.

When it comes to the elements that stand between the producer and the consumer, that is another matter. Mr. Hoover is not going out by any means to crush the middleman, but I feel warranted in saying that in dealing with them he may be expected to speak softly and reasonably and "carry a big stick."

In this he will doubtless have the backing of President Wilson, who not long ago took occasion to tell the agricultural committees of House and Senate that he found it difficult to express "in parliamentary language" his feelings about men who would speculate in foodstuffs and hoard up great quantities of them for purposes of making exorbitant profits at a time like this.

Hoover was born in Iowa, spent his early days in his father's agricultural implement house at West Branch in that State, was left an orphan when young, went to Oregon, and worked on a farm until he entered Leland Stanford University in California. He earned his own way through that institution, and found out what hard knocks mean. He took a course in mining engineering, became an expert in mining matters, and when still in his early twenties was engaged in managing great mining properties in Australia.

Before he was thirty he was chief engineer of the Chinese Imperial Bureau of Mines. He explored much of the interior of China, and knows that country's marvelous resources of minerals, forests, and agriculture as well as its people. The outbreak of the Boxer riots found him in Tientsin, China. The Boxers laid siege to it and tried to kill off all the whites and also the Chinese who had any sympathy with Americans and Europeans.

HOOVER, by this time, had become an executive. He had acquired a deep knowledge of handling large business affairs and of managing large forces of men, running sometimes into many thousands. When Tientsin was besieged he took a leading part in organizing the resistance and especially in handling the food supply. When the siege was over, Hoover was credited with having saved a large share of the population from starvation.

Going to London, which is a great world mining interest center, Hoover was engaged, when the European war broke out, in putting on its feet a vast mining proposition in Russia employing 65,000 men, and another great proposition in northern Burmah. He was just forty years old, and is now only forty-three. In 1914 he was called on to help out the American consular and diplomatic officials in London when the swelling tide of war drove a hundred thousand Americans with their guidebooks out of the continent of Europe and sent them scurrying to England hunting for a way home.

They rolled down on London like a flood. Hoover and a group of friends made up a fund of some thousands of dollars, loaned it to those needing help on their mere promise to pay, and in a

short time had most of them on their way to America. Incidentally, the people who were helped paid back all but \$15, which shows

that one can put some faith in human nature after all.

Hoover's work in caring for stranded Americans when the war opened so impressed Ambassador Page that when folks began to cast about for some way to feed the Belgians Page said, "Send for Hoover."

Hoover was sent for, and in a little while had 20,000 tons of foodstuffs on shipboard for Belgium and steaming away from London before the Board of Trade could prevent it. When told the food had gone, the Board of Trade gave its permission. Incidentally, Hoover, who has become a man of means, was one of a committee of Americans who stood good for \$1,500,000 to make the first purchases of supplies for the starving Belgian people.

IT WOULD take a book to tell all about the relief work for Belgium which Hoover commanded for two years and a half. It is sufficient to say he got food to 10,000,000 people, mainly Belgian, part French, in the territory overrun by the Germans. In that time he was in a continual fight to secure fair treatment for the hapless Belgians. If a German commander got balky, Hoover went to Berlin and got the matter straightened out with the Secretary of the German Foreign Office.

Of course, when the United States declared a state of war with Germany, that ended his usefulness in that field, and he left it with Belgium pouring out her thanks through her tears.

I asked Hoover the other day what his idea was of the food problem which confronts this country as one of the nations at war with Germany. He said in substance that the United States had to raise and produce food enough to feed itself and to provide a large amount of that needed by the Allies. He pointed out how the food supply of the allied countries had dwindled, how the man power had been taken from the fields for the armies, how the submarine ravages had depleted shipping, and how necessary it was that the United States, as the great agricultural region nearest to the warring countries of western Europe, should be the provider.

With reference to fixing prices, Hoover's view is to avoid it, if possible, though it may be necessary. He did not find that the maximum price worked well abroad. But if it does come to price-fixing he would assure the producer of a reasonable figure.

Hoover isn't a politician. He hasn't taken hold of the food problem which confronts the United States and its allies, as well as neutrals, because of his own ambitions. He has come into prominence in it because the National Council of Defense cabled over to London and asked him to head its food committee. He dropped everything else and hurried to Washington as soon as he could make a close personal investigation into food facts in England, France, and the allied countries. He prepared an exhaustive report on the subject for the Council of National Defense. It is not too much to say that it opened the eyes of officials here and astonished the Senate and House committees on agriculture because it drove home the fact that grave food shortage, even danger of famine, stares the fighting nations in the face, and unless the United States produces and ships plenty of foodstuffs, the war may end disastrously for the nations fighting against Germany.

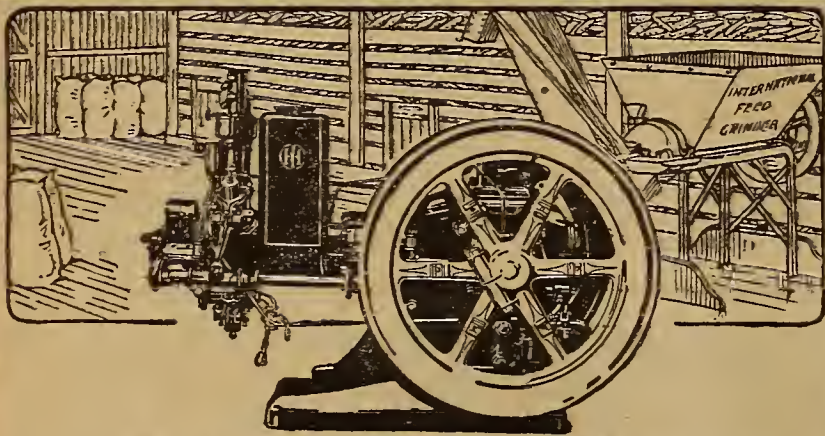
Some men are born organizers, and it looks as if Hoover were one of them. He may prove the Moses to lead the warring nations of the alliance against Germany out of the wilderness of food shortage into something more promising. Quiet, unostentatious, he looks like any fairly prosperous man of affairs, but he thinks quickly, acts with decision, and draws men to him by force of character. The men who have worked with him through the throes of Belgian relief call him "The Chief." They have no hesitation in saying that if Hoover is given the latitude, he can handle the food task for the Government.

F.W.

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IT pays to buy a Mogul kerosene engine, both because it is a good engine and because it operates on kerosene. It takes about five gallons of fuel to run a 4-H. P. engine at full capacity for ten hours. Five gallons of gasoline costs close to \$1.00. The same amount of kerosene costs only 40 cents or so. That is a big saving. It makes Mogul power wonderfully cheap.

Remember this too—the Mogul engine that operates successfully on kerosene has got to be a better engine than one that works on gasoline. It must be built more carefully and of better material. It also runs more steadily. It lasts longer. Because it burns kerosene it costs so little to operate that it is far and away the cheapest engine to use.

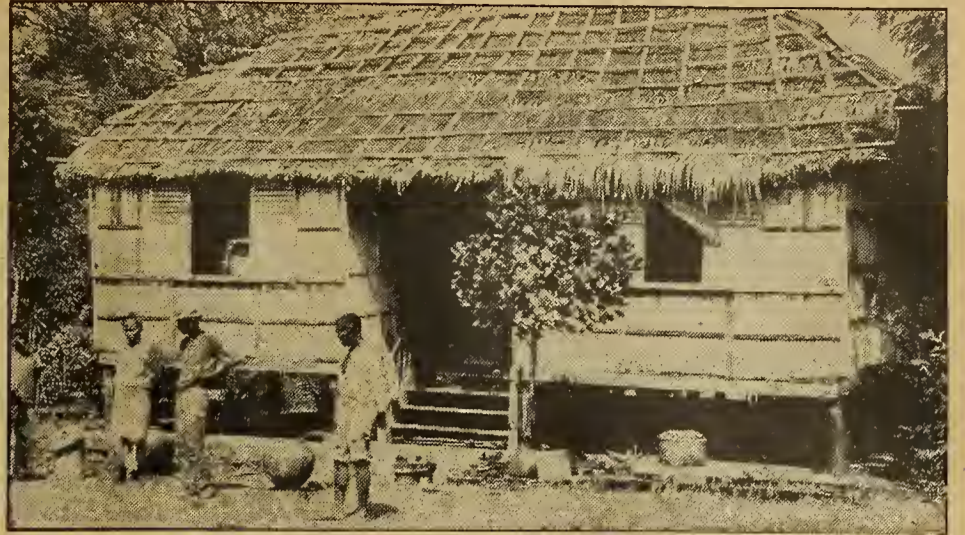
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Freight charges on coconuts are very low when huge quantities can be made into a raft like this and floated down a stream



The Philippine house is of bamboo roofed with coarse grass and elevated on poles to keep it dry during the rainy season

THE principal crop of the Philippine Islands is rice, but climatic conditions are so different in various parts of the islands that numerous other crops, such as corn, abacá, sugar cane, tobacco, coconuts, small vegetables, bananas, and many other fruits are grown.

The total production of any one of these crops could be increased at least threefold if the people would use modern machinery and practice seed selection and better cultivation after planting their crops. However, the farmers' careless methods and lack of capital, associated with a large degree of laziness, make them satisfied with small production and small income for their year's work.

The single-handed modern plow and wooden harrow is used on the majority of farms. These plows make a furrow about four inches wide and perhaps three inches deep. Since they are so small and very light they are very easy for the Filipino to handle and one carabao or ox pulls them very readily.

A farmer usually works from 6 A. M. to 10 A. M. and 4 P. M. to 7 P. M. in preparing his land for crops. These hours are necessary because all the field work is done with oxen and carabao and they cannot stand the intense heat which is always present during the middle of the day. To avoid the terrific heat hundreds of bull carts travel the road at night during the busy season.

Nearly all varieties of rice are planted in small seed beds. There the plants are kept growing until they reach the height of 8 to 12 inches when they are replanted in a permanent field. Each individual stalk is set in the soil by hand.

The plowing for rice is completed immediately after the land has been thoroughly irrigated. This operation is followed by the modern harrow, upon which a Filipino rides to give it greater weight. This man stands on the harrow by holding on to the tail of the carabao. When the farmer has his rice planted he is at leisure for several months. This time is spent idly waiting for the rice to ripen.

Natives Co-operate in Rice Harvest

THE rice harvest is very interesting because of the large number of natives it brings together. Different varieties of rice are sown at different periods of the rice season. This enables neighbors to co-operate in their harvesting. It is not an uncommon thing to see as many as three hundred natives—men and women—in a single five-acre field, cutting the rice by hand.

The rice is tied into small bundles and placed in piles where it is left for a short time. Later it is hauled to market or to the farmer's home, where it is stored for his own use. When threshing time comes a number of these bundles are laid on a sheet and the grain threshed by women beating it out with large

Farming in the Philippines

Where Backward Methods Retard Prosperity of a Nation

By DAVID F. LAUBMANN

poles. This is a slow process, but they are contented.

The general feeling among most Filipinos is that corn products are a food for animals only, and not a great deal has been used for human consumption. However, in recent years we Americans have been teaching them that much nourishment can be gotten from corn when properly prepared.

Abacá is grown mostly in the southern islands. Its product has become world known, and in nearly every rope establishment of to-day you observe the adver-

brought in annually from this source. At present the Philippine Government is advertising a great deal as a means of finding a market for the large number of cigars and cigarettes manufactured there.

Coconuts are one of the largest money-making crops of the islands. While they will grow in almost any province, there are localities that are especially known for their great nut production.

There was until recently no system for planting these trees, as plantations were usually sold after the trees were two and three years old. The object was to get as many trees on a given area as was possible to grow. These plantations were then sold for so much a tree. When it was seen that the trees would not bear the quality of fruit they should, more pains were taken in the planting and some definite planting scheme adhered to. This has greatly increased the size of the nut and the quality of the meat.

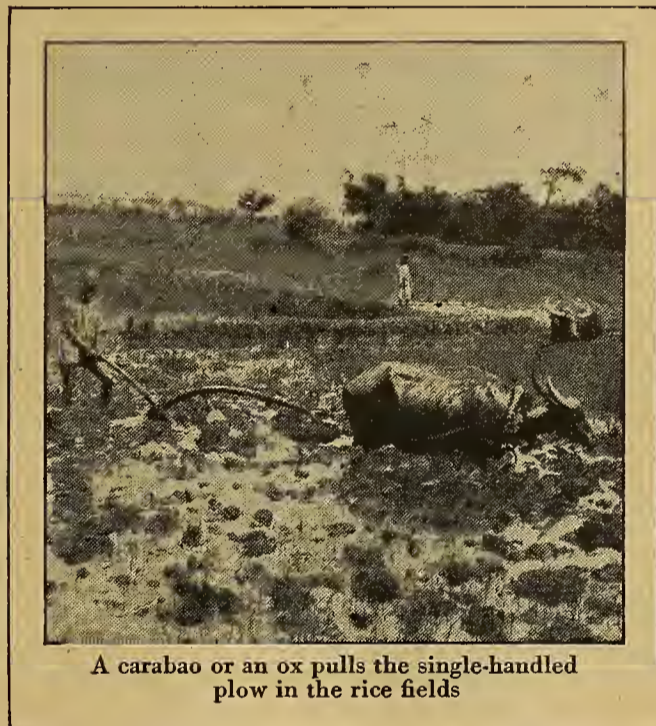
Must Destroy the Diseased Trees

WITHIN the last two years there has been a law passed compelling people to destroy all their trees that had become infected with bud rot—a tropical disease. This has greatly increased the interest of coconut production in that this law affords some protection to newly started plantations.

The Philippines have natural advantages for live-stock production. However, there are pests to be contended with as in all other live-stock countries, and usually large losses occur before diseases are checked. Among cattle and carabao the great plague rinder pest kills thousands of animals each year. There seems to be no cure for the disease when once an animal contracts it.

No Filipino ever knew what it was to enforce quarantine regulations. Consequently all enforcement of law has to be carried out by Americans. Naturally, it was just that rinder-pest quarantine should come under the supervision of the Veterinary Division of the Bureau of Agriculture. The ignorance of the native and his hatred of an American official cause him much grief when rinder pest makes its appearance.

When the time comes that the Filipino realizes that his calling is the tilling of the soil instead of seeking some political office, then it is much more probable that the opportunities that are at hand will be more fully realized. But not until that time will the Philippines ever become prosperous, nor the Filipinos real business men who are capable of conducting their own governmental affairs.

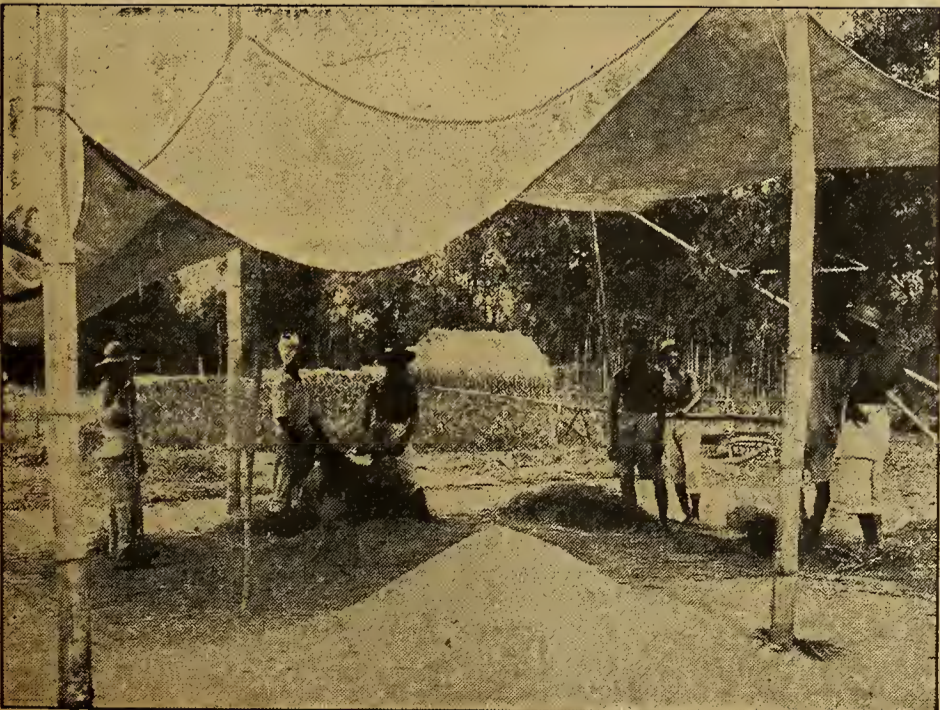


A carabao or an ox pulls the single-handed plow in the rice fields

tisement of Manila hemp which it has for sale.

The sugar industry of the islands has very bright prospects. While there are several large sugar estates in the islands, this industry requires too much capital for single individuals to enter the field.

The co-operative spirit does not exist among the natives sufficiently ever to make a big thing out of sugar production if left to their own initiative. Leadership and capital are lacking, but should the Philip-



Many natives thresh rice for home use by laying the small bundles on the ground and beating them with heavy poles



A public market where dogs are sold for human food. Mr. Laubmann, the writer of this article, is standing in the foreground

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June 16, 1917

For Better Roads

A FEW years ago a county in one of the Mississippi Valley States inaugurated a movement to better its highways. There was nothing spectacular about the start. It was not even proposed to hard-surface the roads. No bonds were voted. The county court announced that money raised for road work by any community would be duplicated by the county. With a chance to get two dollars for one, the more progressive neighborhoods went to work. Hills were cut down, seepy stretches tiled, permanent concrete culverts built in place of small but dangerous wooden bridges, and long stretches of dirt road graded and crowned at a season of the year when the work was most effective.

Within five years approximately \$125,000 went out from the county treasury in the form of bonuses for road-building. Individual communities had, of course, raised equal amounts—and what the individual paid represented so much saved to the county. So the county got a quarter million dollars' worth of road work in addition to what would have resulted under the old plan.

While the roads of this county are only dirt roads crowned to perfection, dragged after each rain, with some especially heavy-traveled stretches oiled, they are said to be superior to the dirt roads of any county in the United States.

Are the roads of this county worth what they cost? Have the better highways added to land values? Here are what actual farm land sales show for five years since road improvement was undertaken, the prices quoted being the yearly average per acre: \$51.06, \$56.40, \$62.33, \$65.95, and \$72.52.

There is yet a better side to the story. These roads have done more than add to land values. During the five years there has been expended in this county more money for the building of churches than the people, with the aid of the court, have raised for roads. Needless to say, the decline of the rural church is not a serious problem among such a people.

Here, as everywhere, improved highways have done more than add to land values. They have given permanency to the rural church and doubtless to all other forces that make for the strength and stability of society.

Bank Provides Waiting-Room

A RECEPTION and waiting-room for farmers and their families and an exhibition hall for choice farm products has been established by a national bank in North Carolina. The room has been furnished comfortably and the State Department of Agriculture and county demonstration agent exercise supervision in the display of farm products. Chairs, tables, electric lights, and lavatories are a part of the equipment.

Farm journals and agricultural literature are supplied farmer patrons for immediate use or as samples to take to their homes. Agricultural exhibits are tagged so as to identify the grower. The farmers frequently demonstrate the rarest products of their toil.

As an expression of its intelligent interest in better farming, this bank has mailed to every farmer in the county an invitation to make use of this reception-room.

To Keep Mule Busy

THE Southern mule certainly has a happy time if idleness is the yardstick with which he measures happiness, for he works, on the average, about 90 days in the year. The other nine months he rests and eats. His vacation is a long one. The Northern mule doesn't have quite as easy a time.

The authorities of the North Carolina Department of Agriculture are making certain studies relative to feeding, caring for, and working farm mules. In this study it has been learned that, when everything is considered, it costs a little more than \$100 to maintain each work animal a year.

Upon the state farms fall crops are always planted, but even then it is diffi-

Butterine for Boys

A CERTAIN school in Chicago has awarded a contract to a packing firm for butterine to feed the boys for the next year, thereby saving several hundred dollars on the butter bill.

Economy, but at whose expense? The researches of Dr. McCollom at the University of Wisconsin prove that young animals cannot grow on ordinary fats such as those from which butterine is made. The fats secreted by the maternal organs of the female animals seem to be what nature has provided for the young of all animals. These fats are found in the fat in the yolks of eggs and the butterfat of milk. Vegetable fats and other animal fats will not do.

The boys in that school are young animals. If they are to be well fed and properly nourished, they need either butterfat or the yolks of eggs. Whatever small amount of butterfat may be used in making butterine, if any, will help them to grow; but that could be bought more cheaply in butter. Eggs in sufficient quantity for their needs would cost much more than butter.

There is no substitute for butter, even in the matter of flavor; and even if the taste could be counterfeited, Nature could not be fooled.

into a bank barn, a silo built, and a new well and water system installed, so there was a good deal of expense. As a result the boy was unable to meet the first note without sacrificing stock that he needed.

The boy has a span of brood mares and a fine herd of high-grade Guernsey cows and heifers, and he does not feel like giving them up yet. The lender has been very considerate, and agreed to carry the note for a short time longer. But as he is quite an old man, he feels that a different adjustment should be made soon. The boy has worked very hard and economized. He could sell the farm for more than double what he was to pay for it, but he wants to keep it for a home.

I think this is a commendable course for a young man, but it requires lots of hard work, patience, and grit to see it through.

There are many bright young men who would like to stay on farms were it not for the difficulties in the way to acquiring a home.

J. WARREN MOORE, *Indiana.*

Inspiration for Institutes

DEAR EDITOR: The Farmers' Institute season is once again past. Hundreds of institutes have been held throughout this State, at least one in every county, and in some counties as many as six or eight have been held. Much good can be obtained by attending institutes and exchanging ideas with our neighbors and friends besides gaining much new knowledge from the instructors.

I have often thought that the greatest good to be gained from an institute is not so much the new things we learn in the way of agriculture, but the renewed interest taken in farm work. If there is any time that farmers strive to do their work better than ever before, that time is after their attendance at an institute or Farmers' Week at the state agricultural college.

There are farmers in every community who aver that they cannot learn anything at an institute. This is equivalent to their saying that they know it all, in so far as farming is concerned, at least.

Such men should apply for positions as state demonstrators, and disseminate their wondrous store of knowledge among their less learned fellow men.

FRANK LENHART, *Ohio.*

Wants to Earn Education

DEAR EDITOR: Will someone in the FARM AND FIRESIDE family tell me how a girl of fourteen who desires an education and wants to pay her own way should go about it? I can go to a nearby town where my tuition would be free, but I would have to earn my board. If there is anyone who has had this experience I should like to hear from her through FARM AND FIRESIDE. If anyone can suggest ways of making money before I go, I should like to hear about that also.

HELEN P. GRAYSON, *Oklahoma.*

Another Fire Story

DEAR EDITOR: I put pine knots in with the wood and coal to make my fire burn more quickly. I always make a fire in my nightdress and slippers, and while it is burning I dress. On this morning there was a high wind, and since I am always watchful about a fire, I opened my kitchen door and stepped out into the yard to look at the stovepipe which goes through the roof, as it is a lean-to with no chimney.

I always keep a ladder standing against the house so that it will be useful in case of fire. This morning I saw that the flames were coming out of the top of the stovepipe, and the heat had caused the pitch tar on the roof to ignite around the pipe. While the flames were only beginning to shoot up, delay would spell a dangerous fire. I ran back to my kitchen, seized a pail of water, was up the ladder in a minute, and emptied the pail around the pipe. Another pail of water put out the blaze, and when back in the kitchen I dumped the fire into the ash pan.

All this time I had on only a nightdress and slippers. Had I not had the ladder at the house my home would no doubt have burned up in a short time.

MRS. R. HAYCOCK, *Colorado.*

Starting a Bank Account

DEAR EDITOR: I am twelve years old and am in the sixth grade. I came from California to Missouri, and my grandfather gave my brother and me a sow pig apiece. My brother's sow had six pigs, and mine had seven pigs. We sold them at seven months old, and they brought us \$284, making my share about \$142.

Mother has taken FARM AND FIRESIDE for years, and wouldn't give it up for anything.

GUY C. GROSHONG, *Missouri.*

E W



Have you helped him on his way to the front?

Our Letter Box

Paying for a Farm

DEAR EDITOR: I have been very much interested in the Farm Loan Act, and would like to describe the case of my son, for there are doubtless many others like it.

My boy was graduated from the agricultural college in 1910. After he had worked a year on a dairy farm an opportunity came to buy a run-down farm of 40 acres which was within 1½ miles from town and near our home. We were offered the farm for about half the price at which the surrounding farms were selling.

We found a man who had the money and was willing to buy the farm and sell it to us on contract—we to make the improvements and keep the buildings insured and in repair, pay the taxes, and pay him seven per cent interest. Four notes were given to the lender: one coming due in four years, the second in five years, the third in six, and the fourth in seven.

We thought this a good proposition, and it was; but it required much work to clean up the place. Much fencing was necessary, and as the boy desired to keep a number of cows and other stock as the best means of building up the farm, the barn had to be remodeled

cult to keep the mules busy. In fact, they are not kept busy. During January each mule worked only 112 hours. In February they were somewhat busier. In March they were kept relatively busy, each one working 185 hours, or 18 days. On account of the usual rains in April the number of busy hours dropped slightly below 150. Even in May, the busiest month of the year, the animals were at work only a little more than two thirds of their time.

From May to August the number of working hours gradually decreased, and during August the mules were loafing just a trifle more than half the time. During September and October they were busy just half the time, but November proved to be one of the busiest months of the year, each mule working just 200 hours. As soon, however, as the fall crops were planted a resting period followed, each animal working only eleven days during December.

Here is the moral of these figures: Even when a scientific system of crop rotation is followed it is a difficult problem to keep the mules busy one half the time. When a one-crop system is practiced it is just about as difficult to keep them busy one fourth the time.



Automobiles

Rubber Tubing Over Wires

By W. B. Ellsworth

HERE is a method that I have used with very good results for reinsulating the electric wires of an automobile. When the insulation has worn off only in places, or is ragged and subject to grease and wear, take a piece of rubber tubing large enough to slip over the wire snugly. Fasten a stout string or wire to the ignition wire, thread this through the tubing, and pull the ignition wire through.

This will give a first-class job at a cost of a few cents. It is much better than tape and can be renewed indefinitely.

I renewed the insulation on all my short magneto wires this way a year ago and they are still good and work perfectly.

Gasoline Economy

By A. Burns

SINCE the high cost of living has begun seriously to include the price of gasoline, I have been seeking to devise ways and means by which a greater mileage can be obtained. A few of my experiments have proved so successful that I will give them for the benefit of other motorists.

If one will remember to leave the cut-out open when coasting along undulating country roads the engine may be cut off completely without fear of bursting the muffler. The slight exertion of energy necessary to throw the switch off and on will, in a day's running, save a considerable amount of fuel.

Driving on pavement and city streets one can also be economical by shutting off the engine half a block or more before the stopping place is reached. It is quite unnecessary, and harmful as well, to tax the motor with gas, only to jam on the brakes at the curb a moment later. The natural impetus of the car will carry it much further than one realizes.

A strong spark may be employed to strengthen the motive power of the gasoline. Inexperienced drivers too often leave their spark lever below its point of highest efficiency, thereby overheating the motor and reducing the speed value of the open throttle.

Through these and similar simple devices I am getting an average of 16 miles to the gallon from my "Big Six."

Repairing Tube Cuts

By H. E. Knies

IT SOMETIMES happens that an almost new and otherwise perfectly good inner tube will receive a long tear or cut and be thrown away because the owner thinks a satisfactory repair cannot be made. Now this is all a mistake, as I have proved to my own satisfaction on more than one occasion.

My first experience of this kind was when an almost new tire for some unknown reason (some thought it had been improperly attached) blew off its rim

and tore an almost straight slit in the new inner tube about 30 inches long. I was told that the inner tube was beyond repair, but it outraged my sense of economy to think of throwing away that practically new tube. I had a small vulcanizer with which a hole nearly four inches long could be repaired at one time, and with this I started to work.

A four-inch portion at one end of the long tear was filled with the repair gum according to the directions for making ordinary repairs. After allowing the cement to dry the recommended length of time, I clamped the tube in my vulcanizer, which was then lighted. It happened to be a steam vulcanizer, and after lighting the heating element no further watching was necessary, as the vulcanizer is entirely automatic in its action.

The Repair Was Permanent

In the meantime the opposite end of the tear was filled with repair gum in the same manner, so that by the time the first repair was vulcanized the second was ready. Thus the repair progressed, first one end and then the other, the tear being gradually closed until at last one patch closed it entirely. I tested the tube in a pan of water and was gratified to find no leaks. Afterward this same tube gave thousands of miles of service, and was finally scrapped because of old age.

I should state, perhaps, that the repair was not made at one time or one day, spare time only being used, which otherwise might have been wasted or used less profitably.

The repair described in the foregoing was done some years ago, and since then I have mended even longer tears, and always with perfect success. All that is required is patience, a little time, repair material, and a good vulcanizer. One that is automatic in its action is to be preferred.

Low-Gear Performance

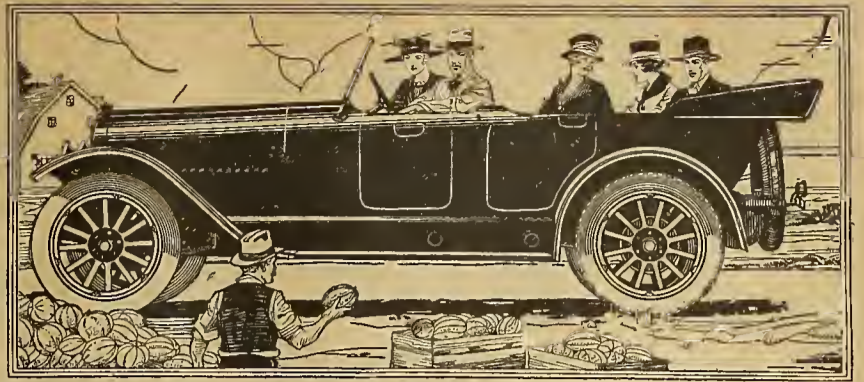
By B. D. Stockwell

WHAT is your opinion about using a motor car for work that requires hard pulling in low gear? And is there any way of telling whether any parts of a car have been strained? These questions come from a Wisconsin reader who apparently thinks he has abused his car, judging from other remarks made.

The use of a motor car for pulling heavy loads that require it to be in low gear is not particularly injurious if the amount of such work is limited. Naturally a great deal depends on the skill of the driver in handling his clutch and throttle. However, continual low-gear performance is likely to make the water in the radiator boil and also cause considerable carbon in the cylinders. Do not let the water in the radiator get below the upper hose connection. And if the water boils violently and continuously, that is a warning to stop.

But probably the greatest injury is suffered by the rear tires when an automobile is used for heavy pulling. Putting chains on the rear wheels will help considerably to reduce this injury should the wheels show a tendency to spin around without getting traction. There is no definite means of determining whether any parts have been strained, except that excessive wear is indicated by a noisy rattling mechanism.

The picture of the motor car pulling a loaded hay wagon shows a type of usefulness permissible on a small scale, but if a person has much hauling to do he had better get a tractor. An automobile is designed to do most of its work in high gear and at fairly high speeds.



Note What We Add

The average car seems pretty complete. But the Mitchell has 31 features which nearly all cars omit.

The average car seems handsome, as did last year's Mitchell. But this year we have added 24 per cent to the luxury cost.

The average car seems strong and enduring. But every vital part in Mitchells has 100 per cent over-strength. We know of two Mitchells that have already run over 200,000 miles each.

That is 40 years of ordinary service.

See These Extras

These extras will cost us on this year's output about \$4,000,000. But the result is a lifetime car with every wanted feature, and as handsome as a car can be. There are 440 parts made of toughened steel. There are springs which have never broken. There is a power tire pump, a dashboard engine primer, a light in the tonneau, reversible headlights.



There is a finish which lasts for years. There is deep, plaited upholstery. All the known attractions are combined in one car. See what these things mean. The Mitchell is the only car which has them at near the Mitchell price.

Due to John W. Bate

You ask how the Mitchell can afford so many extras. It is because of factory savings, due to John W. Bate. This efficiency expert has spent years on this plant, to produce this one car economically. What he saves in the factory he spends on the car.

There are two sizes of Mitchells, both roomy and powerful Sixes. Both of them differ in a hundred ways from other cars in their class. We believe you will want a car like this when you buy a car to keep.

If you do not know our nearest dealer, ask us for his name.

Mitchell — a roomy 7-passenger Six, with 127-inch wheelbase and a highly-developed 48-horsepower motor.

\$1460 F. o. b. Racine

Mitchell Junior — a 5-passenger Six on similar lines, with 120-inch wheelbase and a 40-horsepower motor—1/4-inch smaller bore.

\$1195 F. o. b. Racine

MITCHELL MOTORS COMPANY, Inc., Racine, Wis., U. S. A.

Four-Passenger Roadster, \$1495 Coupe, \$1995 Sedan, \$2175 Cabriolet, \$1895 Also Town Car and Limousine



In busy seasons the family car may be drafted into such work as this, but it is unwise to overdo heavy pulling, requiring the use of low gears

Chandler Price Must Advance \$200 June 30

The price of the Chandler Six becomes \$1595 on the first day of July. The present model, identically the same car, will be continued after that date. UNTIL THAT DATE THE PRICE REMAINS \$1395.

It has always been a basic part of Chandler policy to keep the Chandler price low

We have kept it low. Men considered the original Chandler price of \$1785 established four years ago an impossible price. Later when the Chandler Company reduced that price to \$1595 the trade thought we were courting disaster. Further reductions came as a positive shock to the industry. Meanwhile the Chandler business grew to front-rank proportions.

The Chandler car was never cheapened, but, rather, improved and refined from season to season until the whole motor car purchasing public has come to recognize that the Chandler car is a car of surpassing values.

We have sold the Chandler for hundreds of dollars less than cars of similar quality

Now, however, the Chandler price must be advanced.

It must be materially advanced to cover greatly increased costs which have arisen this Spring by reason of unprecedented conditions in the material supply and labor markets and in problems of transportation.

This is a condition which we cannot control. It is a condition which we must meet.

At \$1595 the Chandler car will still be under-priced. By test of any conceivable comparison this statement is a provable fact.

Now you can buy this great Six at \$1395 f. o. b. Cleveland.

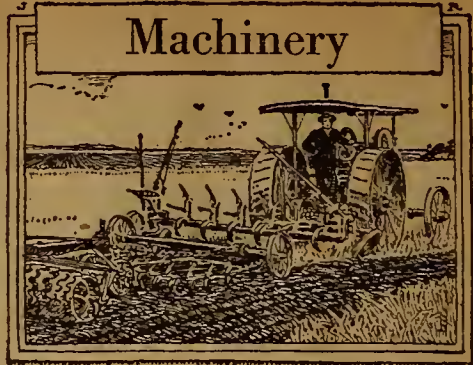
While the \$1395 price holds, the demand will continue to greatly exceed our production, and we cannot guarantee deliveries.

Seven-Passenger Touring Car, \$1395
Four-Passenger Roadster, \$1395
F. O. B. Cleveland

Choose The Fact-Six For Your Six

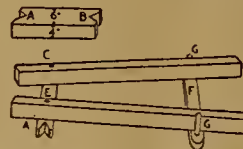
Write us today for catalog and booklet "See How The Chandler Checks With High-Priced Cars," and name of your nearest Chandler dealer.

CHANDLER MOTOR CAR CO., Dept.D.D.,Cleveland, O.



Short-Turn Rack Bottom

By F. B. Vories



IN a recent issue of FARM AND FIRESIDE there was a description of a hay rack made for shortturning. Here is a plan of my own

which I have found practical, and which may interest other readers. Make a false bolster of 4x6-inch material, and at the ends cut notches (A and B) to fit over the standards on front bolster of wagon.

Now place the sills or long pieces (C G and E G) so that they are the full width of the bolster apart at the rear (F). But have them only 18 inches apart at the front. The false bolster keeps the front of the rack steady, but as the bed is narrow at the front and raised the height of the sills, it allows a much shorter turn than an ordinary box.

Choosing Explosives

By C. O. Reeder

MOST farmers in buying powder or dynamite take what a dealer may have in stock, choosing between different grades and kinds according to price or incomplete observation of stone quarry or mine operations.

The important thing is to get a grade of powder that is suited to the work in hand and all its conditions. No one explosive will suit all purposes equally well, any more than a wagon or a sled could be used the year around with entire satisfaction. Some explosives are made to give a comparatively slow, lifting, and cracking action; others to act as violently as possible. Some freeze at about 50 degrees; others not until the temperature gets very low. Some will stand immersion in water without protection while they are loaded, and others will not.

For stump-blasting in ordinary heavy soil, particularly if it is wet—the condition which makes the tightest covering for the explosion—the very best explosive is the cheapest high explosive you can buy, a 20 per cent powder called farm powder. In fact, some of the excellent results this grade of powder can be made to give in soil-blasting are impossible to get with the higher percentage powders. For ditch-blasting such a powder is serviceable when all the charges are fired electrically, and will make the ditches cheaper, perhaps, than any other explosive. But it cannot be used at all for ditching unless it is fired electrically.

For boulder-blasting you should get, not a 20 per cent explosive, but one of about 50 per cent.

All the blasting explosives, however, are undergoing improvement continuously, to make them safer and more efficient. It is therefore an excellent practice to ask the maker of the powder you propose using to tell you exactly which of his powders would be best for your work, and how to use it.

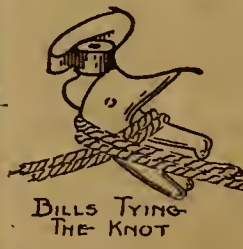
Binder Knotting Adjustment

By Leo Matthews

WHEN I first purchased a grain binder the salesman of whom I bought it asked me to let him know when I would start cutting my grain and he would send a binder expert to my farm to see that I got started all right. I knew a little about binders, but not as much as I wanted to know.

The expert came, and as the binder was just out of the factory it worked perfectly. He made a few minor adjustments, gave fewer instructions, then departed.

I was not satisfied with this arrangement. I wanted instructions, and asked the dealer for printed matter on the binder. He claimed he had nothing of the sort, but assured me that if anything went wrong he would hurry a

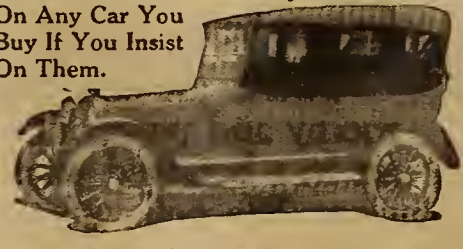


Write for These Books on Game Birds and Game Farming

They tell all about game farming—the profit and pleasure to be obtained from it. "Game Farming for Profit and Pleasure" is sent free on request. It treats of the subject as a whole, describes the many game birds, tells of their food and habits, etc. "American Pheasant Breeding and Shooting" is sent on receipt of 10c. in stamps. It is a complete manual on the subject.

HERCULES POWDER CO.
1032 Market Street
Wilmington Delaware

You Can Have Collins-System Curtains On Any Car You Buy If You Insist On Them.



Be Independent of The Weather Man

That means having Collins-System Curtains on your car. Most of the quality cars in every price-class have them as regular equipment. You can get them on any car you buy, if you insist on them.



Each section of Collins-System Curtains is right at hand when you want it. You can beat the first rain-drops in a summer shower; and have the curtains out of the way again in time to catch the first glimpse of the returning sun.

Tell the dealer you want Collins-System Curtains. And look for the license tag—your protection against imitations.

JACKSON TOP COMPANY, Jackson, Michigan

Collins Always Ready Curtains
License No. K18996
JACKSON TOP CO., JACKSON, MICH.
DIVISION—NOVELTY LEATHER WORKS

Here is another style of the genuine Victrola you can get for little money.

Write to us for the handsome illustrated Victor catalogs, and the name and address of nearest Victor dealer.

Victor Talking Machine Co.
Camden, N. J.

Victrola VIII, \$40

Other styles \$15 to \$400

man out to help me. Therefore it was up to me to learn by experience, for I did not intend to stop my harvesting a half-day or more until the binder man could come out from the city.

Now I have no trouble in operating grain binders, for I have investigated until I understand the working principle, and this is something every farmer should do.

The main source of trouble is in the knotted head, but if one attacks the trouble from an analytical point of view rather than a haphazard monkey-wrench fashion, he will be able to solve the trouble quickly without putting something else out of business.

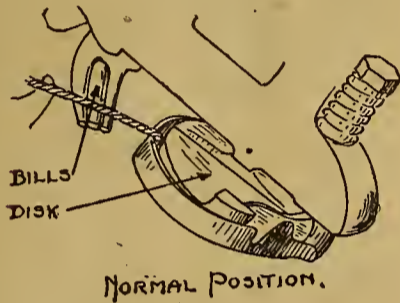
Last Band is Clue to Trouble

First, we must know that in the tying of the knot there are two principal parts that operate—one, the knotted bills; the other, the disk. All binders that I have ever investigated have these two parts, and so what I have to say applies to all binders.

The purpose of the disk is to receive the twine from the needle and hold the ends while the knot is being tied, then to cut and release them.

The bills as they turn around go first under, then over. Then they open and grasp the twine and hold it until after the knot is pulled off.

It is easy to see that if either of these parts do not perform their duty properly, the bundle of grain will not be



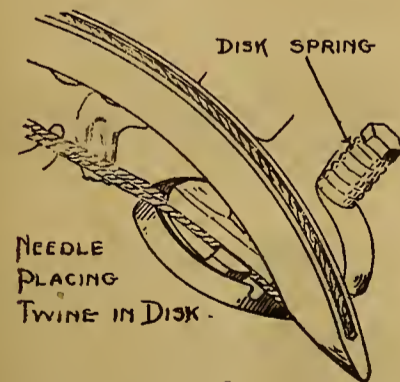
knotted. Both the bills and the disk are controlled by springs, which are the chief means of adjustment. If the disk spring is too loose the disk will not hold the ends of the twine, and consequently there will be no knot. If they are held too tight the twine breaks.

The same is true of the bills. If they are too loose or the hump is broken or worn from the upper bill they will not hold the twine. If the bills are too tight the band will break.

The quickest way to discover what is wrong is to find and examine the last band to see whether it dropped or is still on the binder. If a single knot appears and the twine is broken or frayed at the loose end, the disk is too tight. If a double knot is tied but the band is broken, the bills are too tight. In this case you will find the band on the bills.

Examine Disk for Trash

When a single knot appears on one end and the other is properly severed, the disk is too loose and did not hold the end. There is an exception to this case when working with old binders. This is where the bill's pinion is worn so that it lets the bill hang too low, or the bill's cam roller is badly worn. In either case the upper bill may pass between the two strands, and hence only tie a knot on one end.



Many times trash wraps around the disk and bills in such a manner as to prevent these parts from doing their proper work. In rare cases the needle becomes bent so that it cannot place the twine in the disk.

If you have trouble analyze it. Make sure that you know just what is the matter, and then doctor. Learn all about your binder.

If you do learn the working principle thoroughly you can let the expert binder man call on someone else while you go ahead and finish your harvest.

AN OKLAHOMA inventor has invented a threshing machine which separates the grain from the straw by centrifugal force. It is a small machine intended for use with farm tractors, and is said to thresh very clean.



Marketing Wheat

By M. N. Harrison

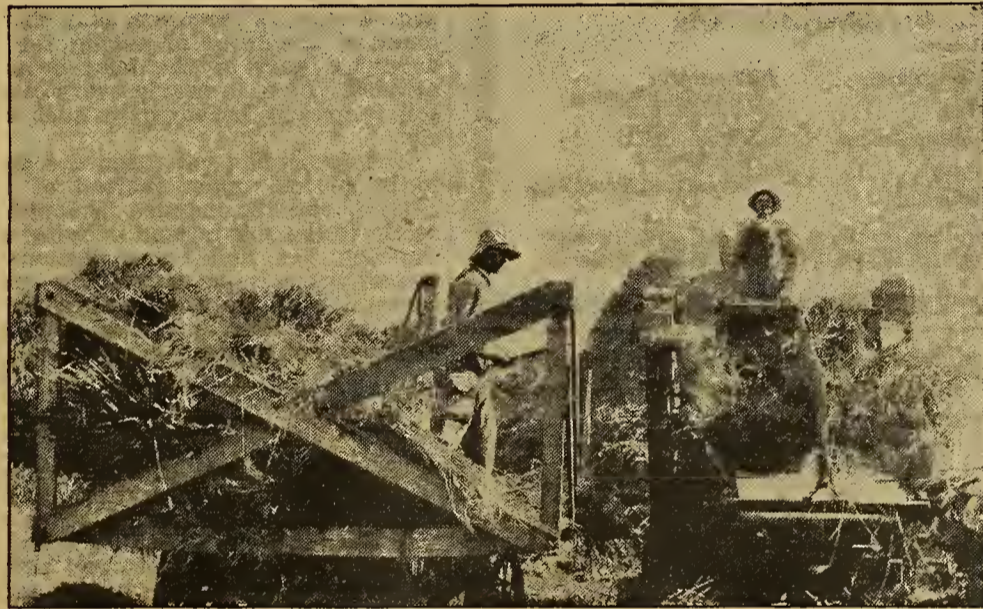
PERHAPS a greater value will be derived this year than ever before from storing the wheat crop on the farm. There are two reasons for this—first, the shortage of freight cars, resulting from the congestion of freight on the Atlantic seaboard; second, the lower price a bushel during the early threshing season.

This much lower price of wheat necessarily results from inability to get transportation facilities, from the greater risk and, hence, greater margin taken by elevators to handle grain before it has gone through the sweating process, and from the fact that the whole grain trade knows that great quantities of wheat will be marketed during July, August, and September, whatever the price may be.

In a study of wheat-marketing, it has been found that two thirds of the grain is marketed in July, August, September, and October, and almost without exception prices are lower than later in the year.

The principal remedy for this condition is in the hands of the grower himself and consists in the storing of grain on the farm for a short period to several months. This may be done by stacking the grain, by storing it in farm elevators, granaries or metal bins, or by a combination of stacking first and storing in bins afterward.

Grain well stacked immediately after harvest does not germinate or become bleached. It goes through the sweating



Even though you thresh out of the shock this year, it will pay you to store your grain until late fall or early winter

process in the stack and not in the bin, and when threshed and placed on the market will average one or two grades better than if threshed out of the shock. This means two to four cents more a bushel. The difference is especially marked in a season of wet harvest. Even if bleached in the shock before stacking, the grain regains much of its original color in the stack.

The expense of stacking and threshing may be a little more than if the grain is threshed out of the shock. The fact that many can use their labor more effectively over a period of stacking than over a shorter period of threshing out of the shock, that some can stack by exchange of neighborhood help, and that less is charged a bushel for threshing out of the stack than out of the shock, more than counterbalances any loss that may result from the additional labor in stacking.

Storing the grain on the farm, if it is threshed out of the shock, also may be practiced.

Unless the grain is put into these bins very dry, it may become bin-burnt. This may result also in the regular sweating process which grain goes through after being threshed out of the shock. Chance for loss in this way is lessened if the grain is stored and handled in farm elevators where the farms or ranches are sufficiently large to justify the erection of an elevator, or by shoveling, stirring, or otherwise ventilating the grain in the bins. As a rule, the preferable method of primary storage is stacking the grain and later threshing.

Fighting Chinch Bugs

By M. Baird

WHEREVER chinch bugs were observed last summer on corn or sorghum, a close inspection should be made of the clumps of blue-stem and sedge grass adjoining the fields. If a dozen or more chinch bugs are found in each of these clumps the back-fire treatment should be given. It is rarely necessary to burn a prairie meadow except along the edge next to the cornfield.

Special attention should be given to the dense grass along the fence rows. The railroads are doing their part to dispose of this. There is no better way to use spare time after fall seeding is over, and thus prevent the chinch bugs from getting another foothold. First examine the bunch of grass, and if the bugs are present, fire the grass when it is dry down to the crown.

To Conserve Man Power

LABOR is the limiting factor in crop production this year. Horses are relatively plentiful in comparison. Many a person has put aside one-man and two-horse tools and uses those that require more horses so that more work to the man can be done. One man with three horses to a 16-inch breaking plow will turn over three acres or less in a day. The same man with a gang plow consisting of two 12-inch bottoms will average 4 3/4 acres a day and will use one more horse. Tractors are playing an important part in increasing the acreage devoted to crops.

Investigations have actually shown that a man on a riding implement will do more work in a day than the same man and the same team with implements that require him to walk.

To Kill Gophers

GOPHERS have begun their work of burrow extension, and steps should be taken for their extermination, advises Dr. Lee R. Dice, in charge of injurious mammal investigation in the Kansas Experiment Station.

"Poisoning is the cheaper method

where the gophers are numerous, but it is not quite so efficient as trapping," says Dr. Dice. "When one is trapping he may always be sure of just what results are obtained. The ordinary steel trap may be used or, what is somewhat better, those traps designed especially for this animal."

Poisoning is the most effective and easily applied method of ridding a badly infested farm. Openings into the burrow are made with a sharp iron or stick and the corn as treated is introduced into the runways. Sulphate of strychnine crystals may be purchased also and inserted into raisins, prunes, or pieces of sweet potatoes by means of slits made with a sharp knife, and then introduced into the gopher runways.

Harrowing Corn

A CORNFIELD can be covered more rapidly with a harrow than with any other type of cultivating implement, and if the harrowing is done at the right time it is an effective way of killing weeds. Weeds that are just germinating or that have not made much growth, and therefore have not obtained a good root hold, can be easily killed with a harrow. The harrow can also be used to advantage in breaking up a crust caused by a heavy, dashing rain.

Listed corn is sometimes harrowed. As a rule, however, little is gained by harrowing listed corn, for the lister-cultivator can ordinarily be used as soon as the corn needs attention.

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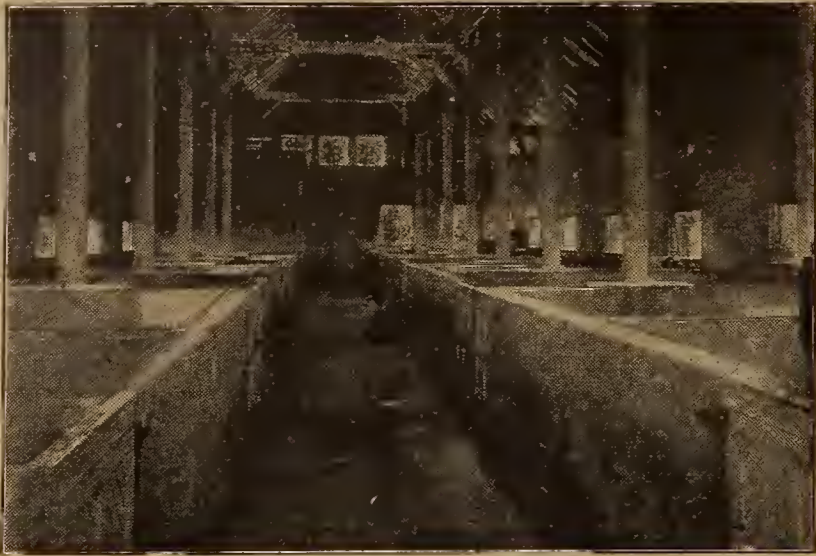
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Live Stock

Sweet Corn for Feeding

By Daniel Prowant

THERE are two methods of feeding sweet corn. It may be either jerked from the stalk and fed in amounts of just what they will clean up, or it may be hogged off; the latter method being preferable for reasons to be set forth. In feeding it is never advisable to allow the hogs all they want without accustoming them to it somewhat, and we never feed any until the corn is well past the roasting-ear stage and the grains wrinkled. We always begin to feed it lightly and in addition to other feeds about a week before the hogs are given access to it. In this way their stomachs become used to it, although I do not consider sweet corn as dangerous to feed as unripe field corn.

If the corn is hogged off, the fodder is eaten, or most of it, as well as the corn. Cows also relish sweet-corn fodder better than other corn fodder. By allowing the hogs access to the field the time and labor necessary to jerk the corn and feed it to them is saved, which is often no small item. However, in a field of one or two acres, unless there are enough hogs to be turned in to eat it up in two or three weeks, it is best to divide the field and only allow part of the field to them until it is cleaned up, and then let them have the balance of it.

In this way they will not muss over the field and waste as much corn as would be the case if a few hogs were to have access to more corn than they could clean up in a short time.

We think it is usually profitable to hog off some of the crops, as in this way much of the labor of caring for hogs during a part of the busy season is avoided. Also, in nearly every case the soil is greatly benefited by such methods.

The cornstalks not eaten are certain to be plowed under instead of being burned, and the manure is applied directly to the soil instead of lying about the hog pen and being wasted. Of course there is no excuse for burning cornstalks or for not hauling the manure to the field, but it is often done, although not so much so as formerly.

To Prevent Disease

PROPER cleaning of the farm would largely eliminate sickness of stock. Many persons think their place is properly cleaned when in reality it has dozens of places in the lots and pastures which are harbors for parasites and disease germs.

There is scarcely a vicinity, where hogs are grown to any extent, that has not some disease. The same drastic measures that are used with foot-and-mouth disease, glanders, or any other fatal stock disease should be taken to free these vicinities from hog cholera.

There are only a very few herds that are not infected more or less with parasites. There is much danger from feeding green corn since it has a natural tendency to lower the vitality of growing hogs.

Getting Ahead of Bots

By Mrs. T. D. Shupe

BOTS have given me considerable trouble in the past, but of late I have not had any serious trouble with them. I find that a little grease of any kind rubbed over the horse's hair where the eggs of the botfly are attached will prevent them from hatching, and in this way the pests are held in check.

But in case a horse gets badly infested with these parasites, I keep the animal in the barn from twelve to twenty-four hours without feed, but supply all the water the horse will drink. I then drench him with a quart of black molasses diluted with water. This seems to cause the hungry bots to let go of the inner walls of the intestinal tract, as they seem fond of anything sweet.

Immediately after drenching the horse with molasses I give a pound of Epsom salts or other strong purgative. This carries the bots off and affords the horse relief. In bad cases a second treatment after the lapse of a week will be of advantage.

To Lead a Slow Horse

By W. C. Howdle



TO LEAD a horse that is slow or that has a habit of lagging, take a half-inch rope 20 feet long. Tie to halter and run the free end through breast-strap ring

in hame of the off horse of team you are driving. Then run through halter ring of horse to be lead and finally to driver.

A slight touch with the end of the rope will send the horse forward and abreast with the team, but he cannot run around ahead. By this method I took a semi-outlaw 35 miles.

Raising Orphan Colts

RAISING orphan colts is a hard task which requires time and patience. Cow's milk is the usual substitute for mare's milk. Allowance must be made for the fact that cow's milk is lower in per cent of protein, fat, and ash than mare's milk, while the latter is lower in per cent of water and milk sugar.

At first a bottle and nipple probably will be found the cheapest and most satisfactory means of inducing the colt to take the milk. The milk should always be warmed to body temperature before feeding.

Add enough warm water to a tablespoonful of sugar to dissolve it, then add from three to five tablespoonfuls of lime water and enough milk to make a pint. Feed one fourth of this mixture every hour for a few days, gradually lengthening the intervals and increasing the amount given at a feed as the colt grows older.

When the colt is three or four weeks old the sugar in the milk may be discontinued. At three months the colt should be put on a ration of all the sweet milk it will drink three times a day.

If the colt scours, cut down on the amount of milk and give two to four ounces of a mixture of two parts castor oil to one part sweet oil.

As soon as possible teach the young colt to eat grain and alfalfa or clover, and allow it access to grass. Crushed oats and a little bran make the best grain feed, but if these are not available substitute crushed corn and bran in equal parts by bulk with a little linseed meal.



Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta

160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre

The great demand for Canadian Wheat will keep up the price. Where a farmer can get over \$2 for wheat and raise 20 to 45 bushels to the acre he is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of Oats, Barley and Flax. Mixed Farming in Western Canada is fully as profitable an industry as grain raising.

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Plenty of shade in the pastures will help the stock cattle to make greater gains on grass this summer



Dairying

Frequency of Breeding

By Carlton Fisher

AN ARKANSAS reader who has three cows which bring calves only every other year wishes to know how he can improve their productiveness. Also how soon after calving a cow may again be bred, and whether sex of the offspring can be regulated.

Lacking particulars of the condition of the cows in question, I am of the opinion that liberal grain-feeding would be most likely to put the cows in a condition that would enable them to produce healthy calves yearly. From five to six weeks should elapse between the time of calving and subsequent breeding, though if the calf is not permitted to nurse the time may be slightly shortened.

While there is some experimental evidence that supports the ability of skillful breeders to influence the sex of animals, no reliable methods of control have thus far been established.

Clean Up the Pastures

By Alton D. Spencer

PICK up the odds and ends of trash in the barnyard and pastures as you go through them.

A farmer in Ottawa County, Michigan, lost a valuable Holstein cow which died of a strange malady. The post-mortem disclosed the fact that the animal had swallowed several nails, belt buckles, other bits of metal, and a piece of fence wire six inches long which had punctured the wall of the stomach.

And remember, also, that pieces of barbed wire a few feet long invite trouble when left in the horse pasture. A horse or a colt finds such snags even more quickly than a barefooted man finds carpet tacks in the house at night.

Feed, \$134; Profit, \$407

AT THE age of two years and five months, when her first calf was born, Lipsa, the Jersey cow shown in the picture, weighed 673 pounds. At the end of her year's milking period she weighed 884 pounds. During the year this cow produced 11,509.3 pounds of milk which, selling at 10 cents a quart, brought \$541.60.

The feed required to produce this yield and to permit the gain of 211 pounds in weight cost \$134.54. Thus the net earnings of this cow for her owner was \$407.06, not counting the calf, which was a heifer. This cow is owned by an Ohio breeder, and the accuracy of the record is vouched for by the Ohio State University, which sent its testers to the owner's farm



This cow gained 211 pounds in weight and produced 11,509.3 pounds of milk in a year

twenty-two times during the year. The feed was chiefly hay, ensilage, gluten meal, ground oats, bran, and beets.

Off-Flavor Butter Improved

By Chas. E. Richardson

I REMEMBER calling to see a dairyman that lived a few miles from my farm. He was just getting ready to milk, and I knew that he made butter with his wife's help. When I inquired how business was, he told me that he was thinking of giving up making butter, as there was too much complaint all the time about the butter.

"What seems to be the thing they find fault with most?" I inquired.

"Oh, it's the flavor that is generally the trouble," he replied, "and I can't see but what the butter is made the same each time."

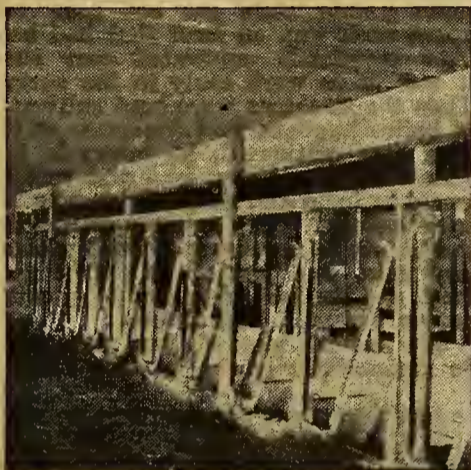
By that time we had reached the barn and he started to milk. I was surprised to see the cows as he began to milk. They were covered all over the hind parts and udder with lumps of manure. In fact they had not been brushed off for months. All that he did was to brush away a place so that he would not get his hands dirty. When he got through, all over the top of the milk were specks and lumps of dirt that had fallen into the milk.

"Is that the way that you always have your milk come after milking?" I asked him.

"Well, this winter they have been some dirty, and it gets into the milk, I suppose. But it gets pretty well out by the time that it goes through the separator," he answered.

Avoid Dust During Milking

"I wish that you would try my method for a while, I told him. "Keep out all the dirt possible, do not feed the hay and silage while the milk is here in the barn, as the odor from the silage and the dust from the hay get into the milk.



He had installed modern stanchions, and revised his ideas about dairying

How can you expect that the butter will be without some sort of an off flavor?"

"Now you may be right," he said, "but I separate all the milk just as soon as I take it to the house, and the agent that sold me the separator said it would take all of the impurities out of the milk."

"No doubt but what a separator will extract the solid impurities in a way," I explained, "but the liquid part cannot be taken out. I feel sure that if you are more careful you will have fewer complaints."

He began to take more pains with his cows and stable, and fed the silage after he milked. Some time later I was in his neighborhood and called to look at his cows. They were in swing stanchions and were clean. He told me that after he began to keep the cows brushed off the butter customers stopped "kicking," and that it seemed as though he were on the right track to good buttermaking. To make it easier for him to keep the cows clean, he had taken out the old chain hitch and replaced them with the swing stanchions, which saved him work. I could see that he had taken new courage and was interested, now that the cause of his trouble had been corrected.

Groom Cows with Stiff Brush

Cleaning the cows off and grooming them keeps them in better condition. Grooming with a good brush makes a pleasant circulation of the blood through the system, which is noticeable in the increased amount of milk. Many persons are careful to curry their horses, and feel that it is beneficial to them, which no doubt it is. Then why should not a cow be benefited also? I have also found that it is a good thing to massage the udder a few minutes before starting to milk. And I also do the same afterwards. Then, to prevent drying off too soon, I strip the cows thoroughly.

All of these little things may seem to some farmers too fussy, but when done every day they soon get to be a habit. It is no longer work but a pleasure to notice the improved looks of the cows and the increase in the sales of butter.

Nowadays most people want quality in the butter they buy. It pays to be particular.

The storekeeper in my town told me that he had down in the cellar of his store a large tub which he keeps for the sole purpose of receiving butter which is too poor to sell. "But it does not fill up quite as fast as it did some years ago," he said. Which goes to show that dairymen are learning that the old-fashioned buttermaking by guess is being replaced by butter made by a method.



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Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

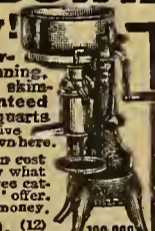
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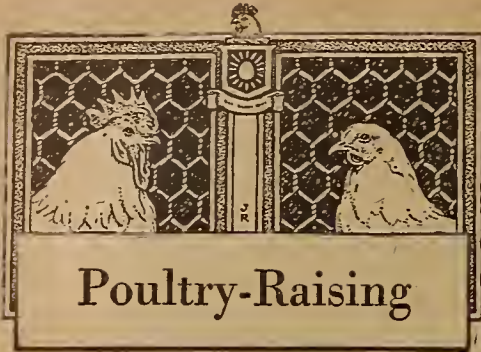
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Poultry-Raising

New Lice Exterminator

By F. W. Orr

A COMPARATIVELY new and little known lice remedy is sodium fluoride, which can be used as a dust or to make a dipping fluid. One pound, costing at present 40 to 50 cents, will treat 100 full-grown fowls. If made into a dip it will be sufficient for 300 birds. This remedy has been found to kill all of the seven common varieties of poultry lice. When applied as a dust, the usual plan is to place a pinch of the chemical in the feathers next to the skin on the head, neck, back, tail, breast, thighs, under wings, and below the vent, or say 10 to 12 pinches of the powder for each bird. This dust is harmless to the chickens and operator, but it will irritate the eyes of birds or operator should it get into them.

For dipping with this preparation, dissolve two thirds of an ounce of pure sodium fluoride poison in each gallon of tepid water. Dip the birds, with wings raised, for half a minute, ruffling the feathers meanwhile. Do not dip the birds' heads under the fluid at first, but just before removing from the dip, place the bird's head under the surface of the dip once or twice. Experiments show that the cost of this chemical for dipping is about 13 cents for each 100 fowls dipped.

Sudan for Poultry Greens

By B. F. W. Thorpe

THE high cost of grain behooves poultry keepers to supply an abundance of succulent feed. Sudan grass is proving to be an ideal crop for this purpose, as it sprouts readily after cutting, thus furnishing crisp fresh greens during the entire summer. A few square rods drilled in on the fertile soil will furnish successive cutting for 50 to 100 birds. It can be sown as late as July 1st for this purpose. A pound of seed (costing 35 to 40 cents sold by all leading seedsmen) drilled to cultivate like corn will plant a quarter of an acre. What is not wanted for the poultry will be eaten greedily by all kinds of farm stock.

Profit from Late Broods

By L. H. Cobb

PRICES for late chickens promise to be high and the later hatches can get more of their food from the range. By giving them a little longer to make the salable size, and only forcing them when putting them in condition for market, they can be grown at much less cost than can the early broods. To do this with the greatest profit, the range must be good. I find it best to keep small flocks in colony coops that can be well separated. Not only will the chickens get insects to supply the animal matter needed, but they will learn to gather many weed seeds and shattered grains.

When the feed is not supplied them as freely as they really need it for rapid growth, chicks will be hungry enough to seek other foods to take its place, and range foods will answer almost as well.



Over 50 per cent of these young turkeys raised in confinement and fed continuously on sour milk at the Rhode Island Experiment Station grew to maturity

Roots, tender weeds, clover leaves, etc., will all be used to supplement the bugs and seeds. This year it is very important that we grow the most of every kind of meat food that we can, and there is no greater opportunity to add to the supply than in increasing the number of chickens, ducks, turkeys, and geese.

The turkeys will need no grain at all if the turkey hens can be turned loose with the little turkeys on a good range. Even though the poults grow a little slower, they will be more healthy than where heavily fed. Geese eat an enormous amount of greens and can be practically kept on pasture alone. Guineas can be turned loose in an orchard or pasture and they will hatch and rear their young with no further attention. All these make welcome additions to the food supply, but chickens will be the most profitable with the average farmer.

Caponizing offers another way to increase the food supply. A bunch of roosters of the heavier breeds turned into capons can be grown to weigh 8 or 10 pounds each, and will bring the price of young chickens, or more.

Feterita for Poultry

By F. W. Orr

EXPERIMENTS are showing that there is a great future for feterita as a poultry feed to take the place of wheat. This grain in composition is quite similar to wheat or barley, except it is richer in fat but it is lower in fat content, however, than Indian corn. The grains being small size, it is well adapted for scratch feed and for young chicks without cracking. Best of all, it is a sure cropper in practically every part of this country, as it will mature in 80 to 90 days and will make a heavier yield of grain on soil of fair fertility than will corn.

Several other good points of feterita are its ability to withstand drought and the small quantity of seed required—4 or 5 pounds of good seed will plant an acre drilled in rows 3½ feet apart and the kernels 6 inches apart in the row. It is a warm-weather crop and should be planted a week or ten days later than corn, and in localities where frost holds off until October 1st feterita can be planted as late as June 25th to July 1st and still mature the grain.

The fodder is quite similar to corn stover in feeding value, as feterita belongs to the sorghum family. Any of the leading seedsmen will send you a pound to try by mail for about 20 cents.

Yolks a Muddy Green Color

ONE of the largest commercial egg-producing plants of which I have knowledge says that they have evidence that the feeding of cottonseed meal causes the yolks of eggs to assume a "bilious muddy green color." The only similar coloring of eggs that has come to the manager's attention was from hens that had access to large quantities of army worms. This correspondent does not know just how much cottonseed meal or army worms were eaten by the hens whose egg yolks were off color. Has any FARM AND FIRESIDE poultry keeper observed similar influence from either of these causes?

READING the enthusiastic praise of some of the newer breeds might lead one to think that there would be small chance for the older breeds to hold their places. The old saw had it: "There are many men of many minds." So there are many breeds to satisfy all fancies, and no breed, new or old, will have a monopoly of all the best qualities.



Garden—Orchard

Getting Ahead of Drought

By Mrs. C. D. Smith

OUR neighborhood (central Kansas) got an impressive lesson last summer in raising garden crops in spite of drought. Nearly all of our gardens started out well and gave early promise of good yields, but later failed for lack of moisture. For example, one neighbor and his wife, who showed us the trick, were marketing bushels and bushels of big, smooth, ripe tomatoes when all the surrounding gardens, on soil that was identical, had nothing but withering, fruitless vines.

This is how they did it: Their tomato plants were set out four feet apart each way on land that had been kept frequently cultivated ever since it was fit to work early in the spring. Then the tomatoes were kept cultivated in both directions just the same as the corn was cultivated, at intervals frequent enough so that no crust was allowed to form and none of the moisture could escape. This cultivation enabled the plants to develop and fruit without any rain, and produce a fairly good crop, and the rest of us had to go without or buy at a high price.

We had all learned that corn could be successfully grown by this kind of

time when there is so much other work to do. However, we do like a few for the enjoyment they give us, as we are able to have fresh strawberries or a shortcake at unexpected moments.

Here in Lancaster County, Nebraska, we have been visited by a strawberry pest for a season or two past which will practically destroy all the strawberry plants unless it is controlled. I have been able to overcome this pest by spraying with one tablespoonful of Paris green in four gallons of water.

Our strawberries are now safely covered with a straw mulch which will be raked off between the rows when the blossoms begin to open. The straw is convenient to kneel on while picking, and the berries are always free from dirt. Of course, we cut out and pull the weeds which appear in the rows, but no cultivation is given until the strawberries are harvested. Then the field is mowed, given a good cultivation, and fertilized.

The All-Season Garden

By Inez Maddox

HOW many gardeners plan their gardens for all summer? Here is a picture of our 1916 garden taken in the middle of August, which continued productive till October. To be sure, the small beds, like lettuce, radishes, and things of that kind, gave out before that date, but the early stuff was followed with fall radishes, spinach, and turnips for the winter.

In the center of the picture can be seen the row of pie plant which no garden should be without. On one side are shown onions, cucumbers, tomatoes, and Kentucky Wonder beans. And on the other, stock beets, tomatoes, and corn.

The field corn was a good substitute late in the season after the sweet corn was gone. All of our garden is planted



This garden loaded our table daily from early spring to late fall, and stored the cellar besides for winter use

culture even though there was little rain, but we had failed to put in practice the same idea with vegetables. Hereafter our gardens will be so arranged that they can be given the same kind of culture that brings success with our corn crop.

After Failure Try Again

By E. B. Cave

ON ACCOUNT of too much rain and cold weather, our garden bean crop first planted in the spring of 1916 was hopeless. The weather continued so unfavorable our last planting was not made until the middle of August, when four rows of beans were planted three rods long.

From this planting we gathered 30 gallons to can, beside supplying the family with green beans. The vines were also well filled with small beans when frost came. To get such good results from so late a planting we encouraged the growth by more than ordinary cultivation. This result with late-planted beans will encourage us to follow the same plan in future years.

Hints from Berry Harvest

By Grace Dietz

IN HARVESTING our berry and small-fruit crops we employ neighbors who are glad to get a chance to "pick on the share." We find the Senator Dunlap variety of strawberries takes first rank in our locality, and best fills our requirements. As for the ever-bearing variety of strawberries, I have not had much experience with the variety in a commercial way, but think I should not care for a great quantity of them, since their harvesting comes at a

long rows so it can be worked often with the horse and cultivator. There are only a few days in the summer from the time the pieplant comes until it gets too cold for spinach that we cannot get something nice from our garden. Then we turn our steps to the cellar, where throughout the summer and fall we have been storing good things for winter in cans, boxes, and barrels.

Pruning Pole Limas

By Anna Wade Galligher

WE HAVE found that removing the surplus growth at the proper time will not only hasten the development of lima beans but helps to increase the yield.

When the vines have "set" enough pods and blossoms to produce a good crop we clip off the ends of all vines. The clipping is begun when the first beans are large enough to shell. The vines grow very fast and the pruning must be repeated about once a week. If very thick and rank, a few of the leaves are clipped off also.

This plan of pruning forces the pods to develop a good crop in place of having a lot of small pods and blossoms to be caught by the first frost.

Last year we sold 146 quarts of shelled lima beans at 20 to 25 cents a quart basket. We had about 200 hills planted. In addition to those sold, we had all the green limas we could use, besides several gallons of dried beans for winter. We plant Early Leviathan and Green Seeded Carpenteria.

Two or three cultivations with hand-power implements in the garden can be made with less effort than one when the culture is delayed too long and the soil gets hard and weedy.



Farm Building

Sunlight for the Cellar

By William F. Miller

THERE is a mistaken idea that a house is warmer if the cellar is not under the entire building. The argument is that there are no windows with crevices to let in the cold air. That may be true concerning the cracks next to the frames, but without doubt there will be dampness where the ground has not been excavated. Then the first-floor joists are nearer to the frost in the earth in the winter.

Set the first-story beams well up from the grade, not less than 24 inches from the soil. If there is a distance of 30 inches between it is still better.

Excavate for a basement beneath the whole house, and do not be afraid to provide sufficient windows. There is nothing quite so dingy as that dark and damp space under the house. The expenditure of a few dollars would have made it light and cheerful. Do not try to bar the sunlight. Let it in. It is not on a meter. It does not cost you anything for the use of it.

If you have a large light cellar, though you have more room than you need, what better place could there be for storage purposes?

Depth of Silo in Ground

"WOULD it be practical to build a silo 12 feet in the ground, 12 feet above ground, and 14 feet in diameter," writes an Illinois dairyman, who explains that he would not encounter water if he excavated to that depth. By this arrangement he would hope to get a much larger capacity at but little extra expense.

The method proposed is in most cases impractical for a number of reasons. The work of feeding the last six or eight feet of silage would be extremely laborious and would probably require some sort of hoisting apparatus such as is used with pit silos. Secondly, it would be impractical to provide drainage at the bottom of the silo, and there would be danger of water accumulating in it during wet weather. In addition, the proportions proposed would not result in close packing of the silage since the diameter is too great in proportion to the height. Better results would be obtained and the silo would hold a greater tonnage in proportion to its cubical contents if the height were increased to at least twice the diameter, and more would be better still. A convenient practical height for a silo 14 feet in diameter is 36 feet, of which at least 30 feet should be above ground.

What Colors for Farmhouse

By S. Williams

WHILE the exterior of a house is painted primarily to protect the lumber from decay and lengthen its life, the selection of harmonious colors is a matter of importance. Certain principles should be followed in the use of paint for the different parts of the building, such as the roof, body, trim, porch floor, porch ceiling, and doors.

Lighter colors are best for the small home; the darker or medium shades show to best advantage on the larger house. Many buildings appear to best advantage in three colors—one for the body, one for trim, and one on roof, but a house with many gables, divided walls, and towers may be treated in more colors, unless it is the desire of the owner to keep these features inconspicuous. In such cases the color of body, trim, and roof should be practically the same.

A building surrounded by heavy foliage, can be painted in the stronger, warmer colors. Have your home individual, but not odd. Consider the colors used on your right and left and let the combination of your home show your personal taste, but not destroy that of your neighbors' homes or counteract the pleasing architectural features.

To make a home appear larger, paint in light colors, and avoid a strong contrast between body, trim, and roof tints. To make a house appear higher, use a light color for trim and have some contrast with body tint; select a pronounced but not too dark roof color; paint the walls from the foundation to roof line in one color.

To make a narrow house appear wider, use first of all a horizontal dividing line, making upper and lower body, which should be in contrasting colors—the lighter below, and the darker, heavier one above. By lowering the apparent height, a house is made to appear wider. The roof can match the upper body color or be in contrast. The latter plan, however, has a tendency to increase the apparent height.

Durable Foot Bridge

By H. W. Weisgerber

IN MANY country communities there is as much use for a sidewalk as there is in a town, especially if it is along the



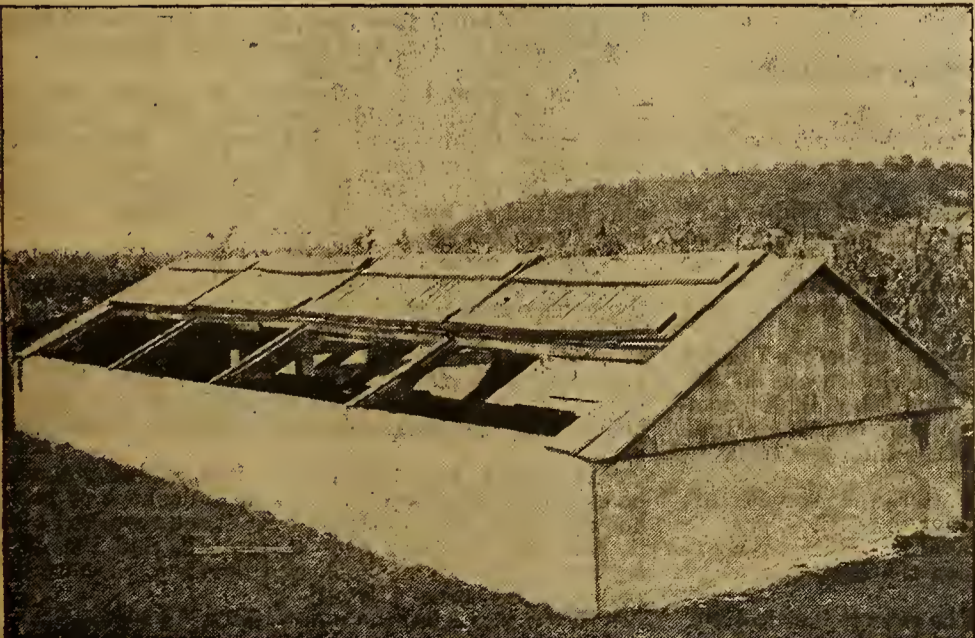
The substantial concrete work makes this bridge safe at all times

road that leads from the village to the depot. But even where there is a walk at the side of the road, many foot bridges are hardly safe to walk over. The picture shows how they can be constructed in a simple manner that at the same time is neat, substantial, and inexpensive. This one has concrete abutments, sides for the "sloping fill" at the ends, 2x6 plank timbers for the framework, and inch. boards for the floor.

Covered Water Tank

THE substantial nature of concrete permits watering tanks made of it to be covered in the manner shown in the picture. A cover with doors which may be opened or closed is the means of keeping dust and trash out of the water and of preventing excessive evaporation in hot weather.

While the wooden upper structure may be applied to a tank already built, it is best in planning a new one to imbed bolts in the end walls, to which the top may be securely anchored.



This watering trough is provided with cover which keeps out dirt and trash and prevents excessive evaporation in summer

Good-Health Talks

By DAVID E. SPAHR

A ONE per cent solution of salicylic acid, according to the Hygienic Laboratory of the Public Health Service, is eminently satisfactory in destroying flies that have escaped destruction in the larval stage.

Salicylic acid, unlike the more potent solution of formaldehyde, is not an objectionable substance, and destroys the flies that partake of it.

Cysts on Eyelids

Last summer I had a large cyst removed from my upper eyelid. Now I have four—two above and two below. Shall I have them cut out or is there an easier and better way?

E. S. B., Pennsylvania.

HAVE them removed by the surgeon's knife; there is no other way so speedy, safe, and rational.

Prickly Heat

When I become warm I do not perspire, but the skin gets covered with red spots, resembling measles. They itch and the skin seems to swell, but it all disappears after I get cool, and my skin is smooth again.

M. H., Ohio.

THE prognosis is favorable. Bathe with a solution of witch hazel or bay rum and water.

Itching Scalp

For about two years I have had a very disagreeable scalp trouble. The scalp itches continually, and seems to be getting worse. Rough spots as large as the end of a finger form. Is there a cure?

A. R., Washington.

RUB into the scalp to kill the germs a lotion made as follows: Carbolic acid, one dram; oil of sweet almonds, two ounces. Mix. Use night and morning.

Dry Cough

My husband is thirty-five years old, weighs 160 pounds. He looks well, but has a dry cough and feels badly. He is so tired all of the time. Has a sweetish taste in his mouth, and frequently has night sweats. He is a farmer and works very hard. I feel uneasy about him, as his mother and some of his aunts died of tuberculosis. Mrs. B. D. H., Indiana.

YOUR husband's clinical symptoms point strongly to tuberculosis. It is high time that something should be done. He should sleep in the open air and put himself under the care of a good doctor, or seek a better and more equitable climate, before organic changes have occurred.

Inflammation of Joints

I am fifty-five years of age, and have arthritis. The fingers on both hands are quite deformed.

Mrs. O. M., Michigan.

I SUPPOSE you refer to arthritis deformans, a chronic disease of the joints, accompanied by much suffering and helplessness. But it is not usually fatal. There are periods of apparent rest, and cures may be effected in the early stages. A warm, dry, equitable climate and complete rest, with application of superheated air, and with proper medical treatment administered by your own physician, under his special direction, is the best treatment.

Hay Fever

My daughter took a very bad croupy cough sometime after undergoing an operation for appendicitis. The doctors decided she had hay fever, and gave her the serum treatment hypodermically, and she got better. Lately, however, it has occurred again, and the treatments do not appear to relieve her. Do you think it might be an after effect of the ether?

Mrs. P. N., Mississippi.

I SHOULD hardly think so. It might be well, though, to use a tablet of one-third grain of calcidin in a tablespoonful of hot water every hour or oftener for the cough, in connection with the other treatment.

Urticaria

MR. W. C. D., Louisiana, writes us that he had suffered with urticaria and bold hives for many years and could find no help or relief. He was finally cured by an old-time doctor who prescribed an ounce of a saturated solution of iodide of potash and taking three drops in milk three times daily, increasing a drop each day until the medicine made the nose run, then decreasing again. He repeats this prescription each year.



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Secretary, "The Bicycle Club" FARM AND FIRESIDE Springfield, Ohio

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If you have an amateur mechanic in your family who loves to take things apart and put them together again, you can sympathize with Mrs. Higgins

John Fixes the Cuckoo Clock

The Story of a Handy Husband Who Could Repair Anything

By ELLIS PARKER BUTLER

"YES'M," said Mrs. Higgins, casting her eyes at the shelf over the melodeon, "we got a cuckoo clock; but it don't cuckoo no more. I don't know as I mind it not cuckooing either. First off, when you get a cuckoo clock you take real enjoyment out of hearing it. Seems sort of companyish to have the door flop open and the little bird come out and say, 'Cuckoo! Cuckoo! Cuckoo!' now and ag'in, and the children just go mortally wild over it; but bimeby you do get sort of cuckooed out of patience. Come noon and your dinner ain't ready and you know John will be home in a minute, it sort of riles a person to have a fool wooden bird pop out at ye and start squawkin' 'Cuckoo! Cuckoo! Cuckoo!' at ye a dozen times hand runnin'. Many's the time I've shook my fist at it and said, 'Oh, hush! Yes'm! Gettin' on my nerves that way!

"But John he never felt that way about it—until the end. First off, when he bought it, him and me and the children we used to stand in a row and wait for the little birdy to come out and cuckoo.

"Along about hour time John would start lookin' at his watch, and begin to get uneasy, and start roundin' up the children. 'Oh, Georgie,' he'd holler, 'come quick! The cuckoo's goin' to cuckoo!' and 'Hurry, Mary, if you want to hear the little birdy!' and 'Come, Toodles! Toodles goin' hear pretty birdy sing!' and then it would be 'Mama, don't you want to hear the clock,' and I'd have to drop whatever I was doin' and hurry into the parlor to hear that mis'able bird lift up its wings and say, 'Cuckoo! Cuckoo! Cuckoo!'

"It's all right for a man that's away at business all day, and just comes home meal times and to sleep, to take pleasure in a cuckoo clock, but when a woman is around the house day in and day out and has one of them clocks hootin' at her all the time she gets mortally tired of it.

"'Bout two months after the novelty has worn off the cute little birdy don't look nothin' but a piece of carved wood, and the noise it makes don't sound like no sound ever made by livin' critter. It don't sound like 'cuckoo' no more at all, but sort of like 'hookhoo.' I got so I almost wished the house would burn down, if might be that clock would burn with it, with it hookhooin' at me wherever I happened to be. If I was in the parlor, I'd hear 'Hookhoo!' and if I was down cellar I'd hear 'Hookhoo!' 'Drat it!' I used to say, 'I wish the thing would hookhoo its head off and be done with it!'

"Well," said Mrs. Higgins with a sigh, "I had my wish. Come a day when the cuckoo didn't hookhoo no more. 'Stead of that the clock just started whirrin' when the hour come—'Whir-r-r-r-r! Whir-r-r-r-r! Whir-r-r-r-r!' and the door flopped open and the bird come out on its shelf and flapped its wooden wings and opened and shut its beak like a chicken with the pip, like it was dyin' of thirst. 'Land sakes!' I says, it was so comical. I hadn't no idea a deaf an' dumb cuckoo clock could be so comical. It was real funny to see the bird come out at eleven o'clock and gasp for water eleven times and then back into the clock sort of disappointed like. 'Serves you right!' I says. 'I hope you choke to death, drat ye!'

"But when John come home he was real worked up about it. 'Ain't that too bad!' he says, like it had been one of the children got the measles. 'But don't you worry,' he says. 'To-morrow is Sunday, and I'll fix her!'

"He's a wonderful fixer, John is. He can fix most everything, give him plenty of time. He's a real mechanical genius, I tell him, the way he can fix locks and my sewing machine, and put washers in the sink pump, and all. So Sunday he went to work and he worked all day, and by nine o'clock he had the cuckoo as good as ever it was, except that it-hooed before it hooked.

"'There!' he says, real triumphant. 'I knew I could fix her, give me time enough. How's that, Mama?' and he turned the hands around.

"'Hoohook! Hoohook! Hoohook!' says the bird—only one wing don't flap any more.

"'Pretty good for an amateur mender, ain't I?' he says, as proud as a parson. 'Next Sunday I'll fix up that wing and get her so she'll hook before she hooos. and she'll be as good as new.'

"'Hoohook! Hoohook! Hoohook! Hoohook!' says the clock.

"John hoohooked her clear around the dial until she was at ten minutes before nine,—which was what time it was,—and then he went to bed. He was all tuckered out, poor critter, workin' so hard at the

clock all day! But he was contented with his work.

"'Well, I fixed her!' he says, after he was in bed. 'She was as good as gone; but I fixed her.'

"'All right,' I says. 'Go to sleep, and let me have my rest.'

"'So he was still for a while, and then he says, 'Ma!'

"'I let on to be asleep.

"'Ma!' he says again.

"'Well, what?' I says, knowin' he'd keep on until I waked up.

"'Did you notice if that clock cuckooed at nine o'clock?'

"'No, I didn't,' I says, real provoked, 'and what's more, John Higgins, you know as well as I do that if it went off at all it didn't cuckoo! It cocucked. So go to sleep and forget about it.'

"'Say,' he says, 'I wonder if she did cocuck, or if she didn't? It would be the dickens and all if I worked all day on that clock, and then she didn't cocuck or cuckoo or nothin'. I'm goin' to get up.'

"'Lie still, and don't be so foolish,' I says. 'You'll have plenty time come mornin' to see about that clock.'

"'Can't get to sleep,' he says, 'for wonderin' does she or don't she. I'll just get up and take a look at her,' he says.

"'So he did.

"'I heard him fallin' over chairs and bumpin' into tables, and then I didn't hear nothin' more, and I

"But all three of the children were fighting to get the bird. John had to box their ears to get it away from them.

"'Now you let this bird be,' he says, putting it up by the clock. 'I don't want none of you to touch it, because I'm going to mend that clock to-night, and you might break it. Don't touch it!'

"Well, of course, after that all of them had to have a hand on it before the day was over; but I guess they didn't harm it none, and I didn't say anything to John about it. He didn't ask me. He hurried through his supper and got out his tools. He had a gimlet, and a pair of tweezers, and his pocket knife, and my screw driver from my sewing machine, and he set right to work.

"IT TOOK John a couple of nights to get the clock together again after he had it all apart, and then he says:

"'Now! Now, Mama!' just as proud as pumpkins, and he pushed the hand around to the hour mark. 'Now you listen to her!' he says, and the little door flipped open and out come the bird.

"'Whir-r-r-r! Whir-r-r-r! Whir-r-r-r!' goes the clock, and then the bird opened its mouth and it says 'Huk!' Just like that, it says it, 'Huk!'

"'What's the matter with the contraption, anyway?' says John, real mad. 'You go to bed if you're so tired you got to be yawnin' like the Mammoth Cave,' he says. 'I'm goin' to fix this clock, or know why!'

"So I went to bed. John didn't come till I don't know when. I woke up when he come, but I didn't say anything. He wasn't in any mood to be said to. So I kept still and waited to hear what time it was, but I couldn't hear. Birdy wasn't hookhooing. So I went to sleep.

"Next morning John didn't seem to wish to converse about the clock, so I let it pass; but he hadn't no sooner left the house than it come the full hour, and out popped the bird. 'Whir-r-r-r! Whir-r-r-r! WHIR-R-R-R!' went the clock. I almost jumped out of my chair.

"'Great snakes!' I says. 'What has John done to that clock?' and then the bird tried to hookhoo.

"It flapped its wings three or four times, and opened and shut its poor little beak. It was real pitiful like. 'Ick!' it says, just as faint as faint. I looked for it to shut its eyes and keel over on its back and curl up its claws, it sounded so sickly.

"'Poor Birdy!' says Toodles.

"'I should think he would!

"When John set to work on the clock that night he was real grim about it. I seen it

wasn't no occasion for me to say much; so I complained of not feelin' just well, and went to bed. I dare say it was about one o'clock in the A. M. when John come to bed, and I knew he was real cross. He sort of muttered while he undressed, and then all at once he shouts out:

"'Oh, plague that kid—leavin' everything everywhere! Near murdered my heel on this mis'able snake!'

"Then I knew he had stepped on Toodles's toy snake. I guess it hurt John consid'able, especially in his state of mind just then, for it was one of them jointed wood snakes, and he was cross anyway.

"'Drat the snake!' he says.

"Next morning I understood why John was so cross. The birdy wouldn't even say 'Ick!' The clock only went 'Whir-r-r-r! Whir-r-r-r! WHIR-R-R-R!' when hour time come, and the birdy slid out and opened its poor, mute beak, and flapped one wing, and backed in again. It was the foolishlest lookin' bird I ever see try to burst into song.

"'Thank goodness, anyway,' I says to myself, 'it won't set me crazy hoo-hooking! Trust John to mend the noise out of a clock, give him time enough!'

"So when John come home that night, lookin' sort of studious and worn, I says to him, 'John, why don't you leave that clock the way it is? I think it's real nice as it is. I was tired to death of that eternal hoohooking and hookhooing, and I'm satisfied to let it be.'

"'All right,' he says, 'and it's just as well you are,' he says, 'for this clock isn't going to hoohook or hookhoo no more. I've pattered over it, and worked over it, and lost my sleep over it, and all, and I'm done trying to make it hoohook and hookhoo. Where did you put that screw driver?'

"'What you goin' to do now, John?' I says. "Do?' he says. 'Do? Why, Mother, the hoohook is all busted out of this clock, and I'm sick of it like you are anyway, and the children don't hanker after



"Come quick," he'd holler, "the cuckoo's goin' to cuckoo," and I'd have to drop my work and hurry into the parlor to hear that mis'able bird

guess I fell off asleep. What woke me up was John shaking' me by the shoulder.

"'What's the matter?' I says, sittin' right up in bed, for Toodles has the croup off and on, and I always git scared.

"'Ma,' says John in a whisper, 'where did you put that little screw driver when I got through usin' it this evening?'

"'In my sewin' machine drawer, right hand, top,' I says, and I went to sleep again.

"'I don't know when John come to bed next. He wouldn't say, come mornin'.

"'Fix the clock?' I says.

"'Fix nothin'!' he says as grumpy as you please.

"'Won't she cuckoo?' I says.

"'No, she won't!' says John, cross-like. 'She won't cuckoo, and she won't cocuck, and she won't coo, and she won't cuck.'

"JUST then the clock went 'Whir-r-r-r! Whir-r-r-r! Whir-r-r-r!' and the little door slammed open like it was angry, and the bird popped out like a shot out of a gun, and she says, 'Hoohookhoohookhoohookhoohook!' all in one breath like, and the door slapped shut so fast it hit the bird in the nose.

"'I thought you said—' I began; but before I could get the words out of my mouth the clock went 'Whir-r-r-r-r-r-r-r-r-r-r!' again, and the little door slapped open, and the bird popped out, and went 'Hoohookhoohookhoohookhoohook!' and was back in the clock again.

"'Gosh!' says John, looking at the clock with his mouth wide open. 'Gosh!' he says.

"'At that the clock set at it again. 'Whir-r-r-r-r-r-r-r-r-r!' she goes. Bang! comes the door open, and out slams the bird.

"'Look out!' says John; and he says it just in time, for the bird comes clear loose and falls on the table right along my ham and egg. 'Hoo—oo!' says the clock—and then says no more.

it any more. I've worked over the crazy contraption until I'm so put out with it that the sight of that wooden bird comin' out of that door and hoohookin' at me is more than mortal man can bear. But I've got an idea—I've got a notion—

"Yes, sir," says John, sort of pleased-like, "I got an idea! Where's that snake of Toodles's I got a stone bruise with last night?"

"Georgie," I says, "go fetch Father Toodles's snake."

"So George went and got it. 'What yuh goin' t' do, Fawther?' he asks."

"You wait an' see!" says John. "You just wait an' see!"

"You won't wait to see to-night, George Higgins!" I says. "It's your bedtime right now. Up-stairs with you!"

"So George fretted a little, but he went, and John seemed so happy and cheerful I thought maybe I'd stay down and watch him work. I'd been goin' to bed so early while he was tryin' to make the clock hookhoo that I'd got behind in my stockin' darnin'. So I set darnin' and John set fixin' the clock."

"YOU wait!" he says once in a while when I asked him how he was gettin' along. "This is goin' to be the biggest surprise you and the kids ever had."

"Then he'd tinker awhile, and set off the clock. She'd go 'Whir-r-r-r! Whir-r-r-r!' WHIR-R-R-R!" and then John would chuckle. He was real pleased with hisself and what he was doin'. I like a man to be that way."

"Now then, Ma," he says, come eleven o'clock or so, "I got her fixed!" and he laughed out loud, he was so pleased. "This is goin' to be the biggest surprise the kids ever had. It'll be worth a dollar bill to see 'em in the mornin'," he says. "Now here's what I done," he says. "I've took this bird clear off from the clock," he says, showin' it to me.

"So you have," I says.

"Yes," he says, "because this bird is past hookhooing," he says. "It has hooked its last hook, and hooded its last hoo; so what's the use of it? Nothing!" he says. "But I got an idea last night when I stepped on the snake," he says, as proud as pickled persimmons. "Here's a clock," I says to myself, he says, "that's goin' 'Whir-r-r-r! Whir-r-r-r!' like a rattlesnake, and here's the snake lyin' around and doin' nothin' but givin' me stone bruises on my heel, and what's the matter with makin' a rattlesnake clock out of that cuckoo clock?"

"I seen he wanted to be praised some, like men do want to be; so I says, 'John Higgins! Do you mean to tell me you've been able to turn that cuckoo clock into a rattlesnake clock with nothin' but a screw driver and a penknife to do it with?'"

"With them and a gimlet," he says, prouder than ever.

"Well, you're wonderful!" I says.

"YOU wait till I show you," he says, "and then see what you say. Great idea for teachin' the kids natural history, ain't it?" he says. "Now wait till I wind her up," he says. "There, now!" he says, "I wish I could wake up Georgie and Mary and Toodles right now, and let them see it. See? The hour comes around. "Look out for the rattlesnake!" I says. "Big rattlesnake in the clock! Look out for him!" Then they listen. "Whir-r-r-r! Whir-r-r-r! Whir-r-r-r!" goes the rattlesnake in the clock. "Look out!" I says, and bang! comes the door open, and out comes the snake where the bird used to be, and wags its head as many times as the hour is, and backs in again. Now, Mother!"

"Well," said Mrs. Higgins, "sure enough! The minute he pushed the hands to the hour mark the clock went 'Whir-r-r-r! Whir-r-r-r! WHIR-R-R-R!' for all the world like a rattlesnake. It was real creepy to hear. Slap! come the little door open, just like John said it would, and out popped the head and about two joints of Toodles's snake, the red tongue waggin' and the green bead eyes a starin'. It was real scary—yes, indeed! Only—"

"Only—" said the visitor. "Only," said Mrs. Higgins, "as soon as the snake had its head out of the clock it sort of turned to look at John, and then turned to look at me, and said 'Cuck-oo! Cuck-oo!' plainer than the bird had ever said it in its life. Yes'm. 'Cuck-oo!' it says. 'Cuck-oo!'—twelve times. It was real comical to see that fierce-lookin' snake waggle its head and sing like a bird that way. 'Cuck-oo!' it says to me, and 'Cuck-oo!' it says to John."

"Huh!" says John, gettin' red in the face. "Huh! So that's what you say, is it? I'll snake you! I'll natural-history-lesson you! I'll show you there can't no rattlesnake hang around here singing like a canary bird, I will! Come out of that clock!"

"So that," said Mrs. Higgins placidly, "is why our cuckoo clock don't cuckoo no more."

The June-Country Wedding

By Emily Rose Burt

FORTUNATE is the girl who lives in the country when the time comes to decorate for her wedding. A wild-rose wedding which one bride planned was wonderfully attractive. In one corner of the living-room an arch of woven wire was erected, and covered with graceful wild clematis vines and wild roses. On each windowsill stood a jar of wild roses, and the mantel was banked with them.

The two bridesmaids wore pale green dresses, and carried baskets overflowing with wild roses; the maid of honor wore a gown of wild-rose pink, and carried an arm bouquet of wood maiden-hair ferns and wild clematis.

The dining-table was decorated effectively. A crystal bowl filled with wild-rose sprays which trailed over the sides and along the table was placed in the center on a mat of hardy sword ferns. From above the middle of the table four garlands of wild clematis were looped down to the edge of the round table and held with bows of green tulle.

Glass dishes of olives and pink, green, and white candies on the table still further carried out the color scheme.

The menu, which was served in buffet style, was pink and white. It consisted of strawberry and pineapple cocktail, with a sprig of green mint in each glass, sliced ham and pressed chicken, potato chips, hot rolls, raspberry ice, white-frosted cakes cut in the shape of bells, pink-frosted cakes in the shape of hearts.

Fruit punch, pink with strawberry juice and green with mint, was served on the rose-bowered porch by a pretty girl in a rose-flowered frock.

ANOTHER country bride used the field flowers for decorating.

Big jars of daisies, buttercups, wild carrot, red clover, and tasseled grasses stood in the corners of all the rooms and filled the empty fireplace.

Four little girls, dressed in white with yellow sashes and hair fillets, carried a daisy chain to form an aisle for the bride and her attendants, and the ceremony took place under a big bell of field daisies.

The bridesmaids wore pale yellow Georgette gowns, and carried bouquets of black-eyed Susans, the maid of honor wore old-gold Georgette, lightened with white, and carried a loose bunch of daisies and buttercups.

In the center of the dining table a high-handled white-enameled basket held a natural arrangement of sweet white clovers, grasses, and yellow buttercups, and was linked by several streamers of yellow baby ribbon, with four smaller white baskets at the corners which held smaller bouquets of the same flowers. A fluffy yellow bow was tied to the handle of each basket.

The menu was also yellow and white and consisted of hot bouillon, sprinkled with grated hard-boiled egg yolks; chicken jelly salad with mayonnaise; tiny bread and butter sandwiches; frozen custard in ice cups trimmed with white paper petals, so that each individual serving looked like a daisy; small squares of sponge cake, and angel food iced in yellow; yellow and white candies.

The boxes of wedding cake were piled on the hall table, and each one had a wee daisy blossom tied into the knot of white ribbon on top.

Everyday Helps

ICE FOR PICNICS—Crushed ice may be easily carried in a vacuum bottle for lemonade, etc.; but if you have no vacuum bottle to use, a tin pail, tightly covered and wrapped in several thicknesses of newspaper, will do quite as well even in the hottest weather.

E. M. W., Washington.

IMPROVING THE FLAVOR—A little sugar added to peas or corn in cooking and to butter in making is a great addition. A little salt added when making candy will kill the oversweet taste and bring out the flavor, especially of chocolate. It is an improvement in all very sweet things.

C. B., Florida.

TO REMOVE WHITE SPOTS from a polished surface rub with a soft cloth wet in essence of peppermint until spot disappears; then polish with flannel. This will not injure the most highly polished wood.

MRS. O. W. G., Maine.

PREVENTS MANY BURNS—Perhaps others have found the ordinary holder inadequate when removing boiling pots from the stove or in draining vegetables. I use an ordinary Canton flannel mit, with palm and thumb padded with cotton and a loop of tape sewed to the wrist for a hanger. The protection it gives the back of the hand is obvious.

MRS. L. W., Missouri.

SAVES HALF THE EGG COST

ROYAL BAKING POWDER

Effects this Great Economy!

By adding a small additional quantity of Royal Baking Powder, about a teaspoon, in place of each egg omitted, you can make wholesome, appetizing cakes, muffins, doughnuts, etc., at a substantial saving in cost.

You must use Royal Baking Powder, which is made from Cream of Tartar—derived from Grapes, to obtain the best results. Royal makes food of delicious quality and leaves no bitter taste, which is often apparent in food leavened with cheaper baking powders made from materials derived from mineral sources.

Royal Baking Powder contains no alum nor phosphate

Try these egg saving recipes:

A good cake to adopt for a regular standard dessert; delicious and will please everybody.



Chocolate Layer Cake

1/2 cup shortening	4 teaspoons Royal Baking Powder
1 cup sugar	1/4 teaspoon salt
1 cup milk	1 teaspoon vanilla
1 1/4 cups flour	1 egg

DIRECTIONS:—Cream shortening; add sugar gradually, beaten egg, one-half the milk and mix well. Add one-half the flour which has been sifted with salt and baking powder, the rest of the milk, then the rest of the flour and add the flavoring. Bake in greased layer cake tins in moderate oven 15 to 20 minutes.

Chocolate Filling and Icing

2 cups confectioner's sugar	1 1/2 ounces unsweetened chocolate
Boiling water	(1 1/2 squares)
1 teaspoon vanilla	1/2 teaspoon grated orange peel

DIRECTIONS:—To the sugar add boiling water very slowly to make a smooth paste. Add vanilla, melted chocolate and orange peel. Spread between layers and on top of cake.

(The old method called for 3 eggs)

Everyone knows the great nutriment in corn. Here it is in most appetizing form.



Corn Meal Muffins

3/4 cup corn meal	4 teaspoons Royal Baking Powder
1 1/4 cups flour	2 tablespoons sugar
1/2 teaspoon salt	1 cup milk
	2 tablespoons shortening

DIRECTIONS:—Sift dry ingredients together into bowl; add milk and melted shortening and beat well. Bake in greased muffin tins in hot oven for about 20 minutes.

(The old method called for 2 eggs)

These and many other good recipes, which economize in eggs and other expensive ingredients, appear in a new cook book which will be sent free on request. Address

ROYAL BAKING POWDER CO.

124 William Street

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Lift Corns out with Fingers



A few drops of Freezone applied directly upon a tender, aching corn stops the soreness at once and soon the entire corn or callus loosens and can be lifted off with the fingers without even a twinge of pain.

Freezone

Removes hard corns, soft corns, also corns between the toes and hardened calluses. Does not irritate or inflame the surrounding skin or tissue. You feel no pain when applying it or afterward.

Women! Keep a small bottle of Freezone on your dresser and never let a corn ache twice.

Small bottles can be had at any drug store in the U. S. or Canada

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FRUIT PRESERVATIVE Requires no sugar, keeps fruit indefinitely, and retains original flavor. Recipe \$1.00. J. D. Leisure, Columbus, Indiana.

SQUAB BOOK FREE Make money breeding PR squabs. 1917 markets highest on record. Start at once. Enlarge. We teach you how to sell best as well as how to raise. Write at once for this free book to the founder of the squab industry. **PLYMOUTH ROCK SQUAB CO., 503 HOWARD ST., MELROSE HIGHLANDS, MASSACHUSETTS.**

THE NATION NEEDS NURSES

The Jamaica Hospital has offered to the Government part of the hospital and the lawn for tents. To take care of our soldiers we need more nurses. A few vacancies are now open for intelligent and patriotic young ladies who want to serve the Nation in its need. The course covers two years and two months, one year High School required for entrance. Board, room, laundry and \$10.00 per month paid while learning. Two weeks' vacation each year. Graduates earn \$28.00 per week. For particulars address,

Superintendent, The Jamaica Hospital Jamaica, New York

\$1000 PER MAN PER COUNTY Strange invention startles the world—agents amazed. Ten inexperienced men divide \$40,000. Korstad, a farmer, did \$2,200 in 14 days. Schleicher, a minister, \$195 first 12 hours. \$1,200 cold cash made, paid, banked by Stoneman in 30 days; \$15,000 to date. A hot or cold running water bath equipment for any home at only \$6.50. Self-heating. No plumbing or water-works required. Investigate. Exclusive sale. Credit given. Send no money. Write letter or postal today.

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Shoo Fly Plant

KEEP FLIES OUT OF THE HOUSE

Flies will not stay in a room where it is grown. Very mysterious, but tests show such to be the case. Blooms in a short time (60 days from planting). Flowers both summer and winter. Package of seed by mail with catalogue, 10 Cents. **JAPAN SEED CO., Desk N, South Norwalk, Conn.**

Canning

Easy, quick and economical to can the simple National Way. Fruits, vegetables and meats canned without spoilage and with full flavor. National Steam Pressure Outfits \$12 to \$1000, for home or commercial uses. An economic necessity. Details free. Write.

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STEAM PRESSURE CANNING OUTFITS

213 Atlases Damaged by Printer's Blunder

A printer's blunder caused the type matter on the cover of the first few copies of our New War Atlas to read badly. The mistake was discovered after 213 copies had been printed. The damage is slight; it doesn't hurt the book a bit, but we are going to sell them at exact cost while they last. One copy only to FARM AND FIRESIDE subscribers who wish to renew. Read the offer below.

A Wonderful Atlas

This is the first atlas to diagram the great retreat of the Germans before the avalanche of French and British. One of its many maps shows the position of the armies on the Western battle front as they were five months ago, clinched in a mighty deadlock. It shows the great advance, mile by mile, with every village, every city, every fortress on the Western battle front.

There is, also, a map of the Eastern theatre of war, and a map showing the situation on the North Sea. Then there are maps of Europe, of France, of Turkey, of Germany—12 colored page and double-page maps.

Visualizes the War

The atlas contains fifty-five magnificent halftone pictures. The great machines of war are illustrated—"caterpillar tanks," trench periscopes, anti-aircraft guns, mines, etc., are all brought vividly before the reader.

For 78 Cents We will send you the atlas postpaid and extend your subscription to FARM AND FIRESIDE for one year.

We reserve the right to refund your money in case your order reaches us too late. (This advertisement was written 12 days before publication and another announcement will have appeared in the meantime.) There were 213 imperfect atlases on hand the day this advertisement was written. To-morrow they may be all sold. Make up your mind NOW whether you want it or not. If you make up your mind that you DO want it then ACT.

FARM AND FIRESIDE, Springfield, Ohio

Gentlemen—I enclose, herewith, 78 cents. Send me one of the Imperfect War Atlases and extend my subscription one year.

Name.....St. or R. F. D.....

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Housewife's Club

A Khaki Party

Put on your khaki overalls, Your khaki hats and khaki shawls; For wartime doings please appear On Independence Day this year.

Time, 8 P. M. July 4th.

SUCH may be the invitations sent out for a little neighborhood social—a wartime affair for the Fourth. Though the guests may not follow the invitation to the letter in their wearing apparel, they will doubtless enjoy entering into the spirit of it by donning some khaki garment or symbol.

The party may be held indoors or out, but a piazza or lawn affair would be especially pleasant. In that case, a string of red, white, and blue lanterns may be used for decorating. In the house the lights may have paper shades in khaki color and the tables may have covers of khaki-colored cloth. Bouquets of red, white, and blue garden flowers will brighten the somber effect of so much olive drab. The games and contests should all relate to the times.

First comes a potato-peeling contest—old, yes; but the object of this is to see who can peel a potato most economically. The person who makes the thinnest peeling is announced winner and receives a little potato man made of potatoes held together with toothpicks and wearing on his head a home-made khaki soldier hat.

When it is time for refreshments, the notes of a bugle or horn are heard as a signal. The menu in most of its details follows the khaki color scheme, and is very simple. Brown-bread sandwiches filled with chopped olives and cream cheese, vanilla ice cream with maple-syrup sauce, molasses cookies, and ginger snaps may be served. Last of all, each person may be surprised with a little khaki tent from the tip of which waves a tiny American flag. On the floor of the tent are heaped sweet chocolate torpedoes, twisted up in red, white, and blue tissue paper.

NOTE: Three patriotic games to play at the Khaki Party will be sent on receipt of a stamped, self-addressed envelope by the Entertainment Editor, FARM AND FIRESIDE.

Rose Beads

By Almira V. Trunick

COLLECT all colors of rose petals—a peck is none too many. Grind through a meat grinder each day for from four to nine days. New petals may be added at each grinding. After each grinding place in a rusty iron pan, and add a few rusty iron nails. This turns the pulp black.

Should you wish a stronger odor, add a little rose water or oil of roses before grinding; but old-fashioned roses make as strong a scent as most people can stand.

When your pulp is putty-like, form into balls twice the size you wish your beads, so as to allow for shrinkage in drying. Place each bead on a pin for the hole. Place in a dry warm place till dried. To polish, rub briskly with chamois or flannel. Carve while damp if you wish a design.

To Launder Embroideries

By Monica Kelly

IT IS sometimes difficult to launder pillow tops, centerpieces, and table covers embroidered in colors, but I have found that by my method colored embroideries wash very well without fading the colors or roughening the surface of the work.

I never allow such pieces to become very dirty, because this means that they must be rubbed hard in order to remove the soil.

I immerse the pieces in suds of a good white soap and warm water, and squeeze and work them around in the suds until they are clean. Then I rinse in warm water and again in cold until they are entirely rid of all soap. I never rub the pieces nor apply soap directly on them.

After rinsing I fold the pieces flat and squeeze or press out the water, and dry by spreading them out on a table covered with a towel.

When nearly dry I place them face downward on the ironing board, thickly padded or covered with a doubled linen towel, and over them put a piece of thin white cloth to protect the silk from the heat of the iron. I iron with a moderately hot iron until thoroughly dry. Too hot an iron will affect the color and fiber of the silk.

One reason for my success in laundering embroideries is that for wet work I always use the best quality of floss, guaranteed to hold its color.

Kitchen Curtains

By Mildred Henderson

THE most desirable material for kitchen curtains is a good quality of cheesecloth, because it is durable, easily laundered, and inexpensive. How many housewives know the real secret in laundering and ironing the kitchen sash curtains? To give the best results, it is a safe plan to enclose a large white sack (a flour sack will do) with the curtains—for in this way there is no danger of tearing the curtains or getting them out of shape. Iron them while they are very damp, joining the

Baby's Carriage Robe



ANY baby would be happy tucked under a crocheted robe like the one illustrated. Only the center of the robe is shown. Complete directions for making it will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio.

four corners to form a rectangle, and crease once more on the lengthwise folds. Then, when ready to hang up, the curtains will hang in much more graceful folds than they otherwise would.

Kitchen curtains will not soil nearly so quickly if the curtain rod is placed on the window itself rather than on the casing, for when the windows are raised the curtain follows, giving the curtains no chance to flap against the screen which they would do if they were on the casing.

Another good plan to prevent the curtains from soiling is to have them quite short—at least an inch and a half from the window sill. In this way the bottom of the curtains are kept from dust and dirt.

Floor Fillers

By Lillian Trott

CRACKS and crevices in old floors may be filled with the time-honored paper pulp, made by boiling newspapers to jelly, draining, and mixing with glue. The substance is jammed in with a knife, then painted over.

But sawdust, mixed also with glue, is more satisfactory, and saves time. Cornstarch, moistened with turpentine or linseed oil, makes an excellent filler for porous-grain wood, to be applied before paint, stain, or wax. If desirable, tint with ocher, burnt umber, or lamp black.

Commercial fillers ready to apply may be bought at any paint store and, of course, save time and trouble.

To Hold a Cookbook Open

By Nia C. Hall

THE most satisfactory thing I ever found with which to keep a cookbook open when in use was a sheet of glass bound with passe-partout binding and kept for this purpose. The book is opened wide, and the glass laid over the opened pages not only keeps your place but prevents the pages from becoming soiled while in use.

Choosing Canning Equipment

By Cecelia Sharp

THE woman who is just beginning to can and does not wish to put up a large amount may easily get along with utensils she has in the house for her first canning outfit. A wash boiler, a lard pail, or a large galvanized pail fitted with a tight cover will serve for a vat. For the false bottom, nail strips of lath to two crosspieces, and make a rack to fit the boiler or pail. Wire handles will help in placing the rack or removing it from the vat.

If a good deal of canning must be done, the housewife will do well to purchase a commercial canner. There are four types in general use at present, all of which economize on time and labor over the home-made outfit. Hot-water bath outfits, which operate on the same principle as the home-made canners, are the least expensive. While simple in construction, they are manufactured especially for canning and are adapted to hold cans economically. They are excellent for canning fruit for which a high temperature is not necessary and the processing is short.

Water-seal outfits, steam canners, and high-pressure aluminum cookers all sterilize at a higher temperature than the hot-water bath outfits. The water-seal canner is made with a double jacket with an air space between, and sterilizes by means of live steam generated in the bottom of the outfit.

The steam-pressure canner is useful if meats are to be canned. It is more rapid than either of the above types and, because of the high pressure, meats and vegetables may be sterilized in much less time than with a hot-water bath outfit. In canning fruits there is little to be gained by using a high-pressure outfit, since they require but little processing.

A type which is popular in high altitudes is the aluminum pressure cooker which admits of intense heat and high pressure. Since this canner is small, it is adapted especially to the household in which only a few cans are

put up at a time. Of course it cans rapidly, so that a good many jars may be filled in a day.

Among the smaller items which help in canning are the hot-jar lifter or tongs and the hot-pan lifter. Peelers, apple corer, cherry stoner, and peach seeder are very useful, and indispensable if a large amount of any one product is canned. To aid in packing, it is necessary also to have a flexible paddle of bamboo, hickory, or some other pliable wood. A thermometer is a great aid in successful canning.

FILLING FOR LEMON PIES—Two heaping tablespoonfuls of cornstarch. Mix with just a little cold water. Add two cupfuls of boiling water, stirring continually. Then add the grated rind and the juice of two lemons, one-half tablespoonful of butter, one cupful of sugar, and the yolks of three eggs well beaten. This will make enough for two pies.

Place this mixture in a double boiler and boil until quite thick, stirring all the time. When sufficiently thick let cool, before pouring into the baked under crust of the pie. To the beaten whites of three eggs add three-fourths cupful of sugar, spreading meringue on pies. Place in the oven then for just a few minutes, until brown.

R. A. M., Idaho.

QUICK SALMON FRITTERS—Free a can of salmon from skin and bones, and flake it in small pieces. Beat two eggs, stir in the salmon, drop by spoonfuls into deep fat, and fry until browned.

C. B., Vermont.

How I Got the Colt

By R. S. Satterfield

A HALF-DOLLAR looks mighty big to a boy on a poor mountain farm who has never had money enough, all told, to pay for a yearling calf, and a yearling is one of the first things a boy on the farm longs to call his own. The next possession, according to his sense of business success, must be another yearling; that is, two yearlings—a yoke and a sled. When well broken, or by the time they are two years old, these may be "swapped" for a year-old colt. This is the pinnacle of success.

I was longing for a chance to get possession of a calf when I learned that the State paid 50 cents apiece for the killing of crows. It was spring, and the crows were pulling up the young corn. Why shouldn't I take the old musket and kill some crows?

Up on the hill beyond the cornfield was an old dead tree in which the crows took turn about in sitting and looking out for danger. While the watchman remained in the tree the other crows would go to the cornfield. If anybody approached the field, the watchman in the tree would give a warning cry of danger and all the crows would fly away to a place of safety. If not bothered, they would pull up the young corn and eat the grains which come up with the roots, or take a few of the grains in their mouths and fly away to the tree where they would rest for a little while and then fly off into the woods some distance away where there were several old pines.

I decided to work my way around through the woods to this clump of pines, feeling sure that I would get a shot at Mr. Crow there. On reaching the pines, I found that in the top of one of the larger ones there was a crows' nest.

There came to my mind immediately a plan about which I had heard "Uncle Charlie," an old negro, tell. I resolved to try it.

My plan did not please Mother. She said it was cruel. But Father said, "Oh, let him go." I could not keep the good news from my chum, Lee, who lived on the east of us. He already owned a yoke of one-year-old yearlings. He was delighted with my find, and agreed to help me execute the plan merely for the fun of it, allowing me all the half-dollars received for dead crows.

THE next day we went over and built a blind near the tree in which was the crows' nest. A blind is a lot of bushes cut and set together in which you conceal yourself.

We waited three more days. They were about the longest three days of my life I think, for the crows to get used to the blind. This was necessary, for crows are very suspicious and cautious about coming near anything that has the appearance of danger.

At last Saturday afternoon came. We were ready. With four old muskets and plenty of powder in a horn strapped over the shoulder, shot in a little gourd with the handle cut off, a piece of popcorn cob for a stopper, plenty of paper for wadding, a box of gun caps, and with the old house cat we started for the clump of pines. Lee stopped over near the old dead tree and fired off his gun to frighten the crows away while I went to the blind.

Leaving my guns and ammunition in the blind I climbed the tree as quickly as possible—the tree was not large or very tall—with the old cat tied to me. There were four young crows in the nest.

I placed the cat on a limb near the nest and tied her securely. She commenced mewling piteously and kept it up. I felt sorry for her and hated to leave her there, but got down, nevertheless, in a hurry and took my place in the blind with Lee, who had come while I was up the tree.

Minutes seemed like hours, but we did not have to wait long until we heard the sound of wings in the treetops above, followed by a shrill note of alarm by the old crow. She called again and again for help. Her calling was not in vain. The crows seemed to come from every direction. In a very short while the air was black with them. There must have been 200 or 300. They were pouncing down on the cat at a terrible rate, but she held her own.

We examined our muskets again and got our ammunition conveniently arranged for reloading. Then, both at once, we fired. The battle was on. The noise the crows made was almost deafening.

We brought crow after crow down, some dead and others wounded. The latter fluttered about in the dry leaves and added to the excitement of those in the air. They would dash right down to the ground in their efforts to rescue the wounded. So great was the noise made by the crows and by our

When Hot Weather Comes

YOU will certainly want to add at least one of these costumes to your summer outfit. Order patterns from Pattern Department, FARM AND FIRESIDE, Springfield, Ohio.



No. 3251—Blouse with Applied Straps and Novelty Pockets. 32 to 40 bust. A splendid sport blouse for outdoor times. Can be made of sport silk or cotton. Price of this pattern, fourteen cents



No. 3290—Blouse with Left Side Closing. 34 to 42 bust. Pattern, fourteen cents



No. 3301—One-Piece Negligee, Short Sleeves. One size only. An easy-to-put-on garment for leisure hours. Shown below in flat effect for pressing. Pattern, fourteen cents



No. 3203—Boy's Romper with Tacked Front. 2 to 6 years. Suitable for the hardest playtimes. The price of this pattern is fourteen cents



No. 3291—Two-Piece Skirt with Gathered Side Sections. 22 to 30 waist. Width, two and one-half yards. The price of this pattern is fourteen cents

No. 3288—Girl's Dress with Bloomers. 4 to 10 years. Bloomers shown below. Price of this complete pattern is fourteen cents



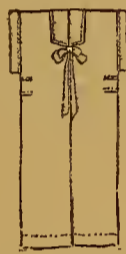
No. 3290



No. 3251



No. 3288



No. 3301



No. 3301



No. 3288

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shooting that neighbors came, some a mile, to see what was the trouble.

When it was all over we gathered up 23 dead crows. These, together with the four young ones in the nest and one old one that had lodged in the tree, made 28 in all.

The next week I found another nest and added eight more to the number, making 36 altogether. In due time the \$18 came. Father was so pleased that he gave me \$12 to go with it. With the \$30 I bought—not the red calf from Mr. Sparger, or even a yoke of yearlings, but a colt. I was happy, and nothing I have since done has brought more satisfaction to me.

Willow Whistles

By Anna Nixon

EVERY small boy delights in a whistle, and here is one that he can make for himself.

Take a young growth of willow at any time after the buds have swelled

they may be cut out with the pieces of wood and bark removed in making the whistle.

With a sharp knife cut out wedge-shaped pieces as indicated by dotted lines A and B in Fig. 1. Ring the bark carefully at dotted line C, and peel off the bark below C.

Lay the stick on a table and with the knife handle gently tap the remaining bark, moving the stick during the process so that the bark is evenly loosened. If this part of the work is not done carefully the bark may split. Test by twisting lightly, and when the bark is loose draw it off and lay it aside.

Cut the wood in two at dotted line D of Fig. 2, and from the short piece take a strip as indicated by dotted line E.

Slip the short piece (Fig. 3) back into place in the bark and at the other end of the bark insert the end of the longer stick for about an inch. The whistle is now complete, as shown in Fig. 4.

When not in use, keep in a pan of water, or the bark will dry and crack.

The dimensions given may be increased or diminished as desired. The sound varies with the size. The larger the whistle the deeper its note.

Young chestnut growths and butternut or walnut sprouts also are excellent woods for making whistles.

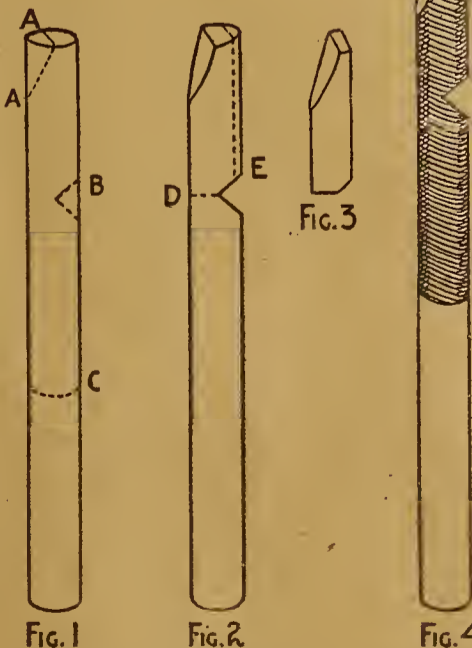


Fig. 1

Fig. 2

Fig. 4

in the spring and the bark peels off easily. Cut a straight, smooth piece about one-half inch in diameter and five or six inches long. It is almost impossible to find a piece of this length without buds, but two or three will not matter, providing they are spaced so that



Neolin Soles Save the Farmwife's Walk-work

Neolin Soles for the farmer—certainly!

But how about the women folk with their miles of walk-work in the kitchen?

Why not Neolin Soles—easier soles, better soles? Better because springier, more flexible, more foot-comfortable. Better because they take the strain off steps and standing and let your feet feel the good, sensible, uncrippled difference at the day's end.

Better because they are waterproof soles—which you'll thank often enough as you pick your way to the barn or feed the chickens on a slop-foot day.

Also, Neolin Soles last longer than the leather most people can afford. Much longer than farm shoe-soles. Much longer than children's shoe-soles.

In white, black, tan. If your dealer hasn't Neolin Soles insist that he get them next time.

To avoid imitations, mark that mark; stamp it on your memory: Neolin—

the trade symbol for a never changing quality product of

The Goodyear Tire & Rubber Co. Akron, Ohio



Neolin Better than leather

New Puzzles

Dividing the Change

Brown and his wife opened their savings box where they kept their loose change, and found they had a sum between \$1 and \$2, which Brown proceeded to divide in the proportion of 3 to 5. To this arrangement the wife readily agreed, but when he was not looking, just for a joke, she slyly slipped three coins of like denomination from his pile to hers, which still left the two piles in the ratio of 3 to 5.

How much money did they divide?

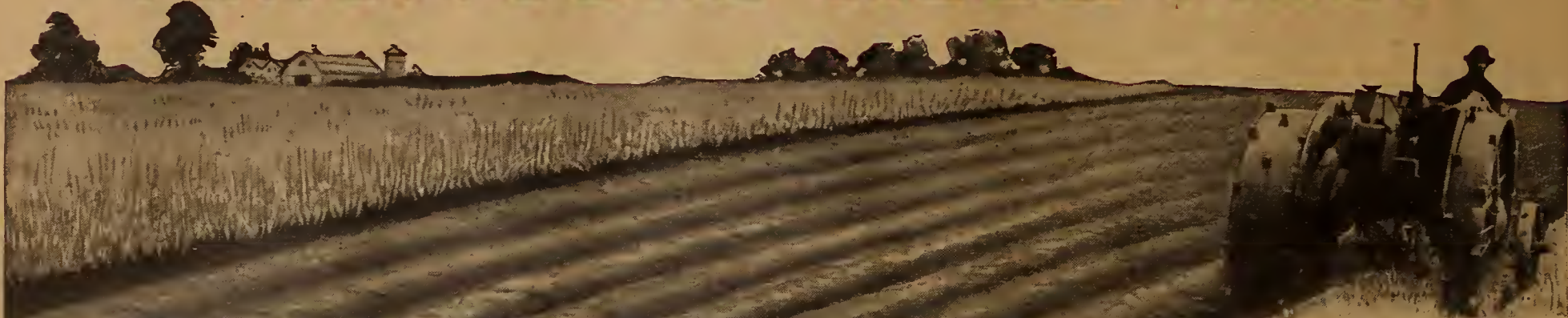
Answers to Puzzles

Puzzles Printed Last Issue

Concealed Geography

(1) Constantinople, (2) Samaria, (3) Thebes, (4) London, (5) Tours, (6) Metz, (7) Edinburgh, (8) Genoa.

The Kind of Trenches We Americans Need Most



Pres. Wilson Says:

in his wonderful proclamation of Apr. 15, 1917:

..... The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food, alike for the armies and the people now at war, the whole great enterprise on which we have embarked WILL BREAK DOWN, AND FAIL.

The world's food reserves are low. . . . Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nations. **MAY THE NATION NOT COUNT UPON THEM TO OMIT NO STEP THAT WILL INCREASE THE PRODUCTION OF THEIR LAND, etc.**

To the American Farmer

You heard the "call" from the head of your nation addressed directly to you. What have you done about it? The

"call" for maximum food production means greater acreages to be prepared, planted and cultivated. Are you equipped to answer your country's demand? You have done it in the past—you, no doubt, will do it NOW.

But conditions are different. Then, it was a "call to arms." Now it is a "call to farms"—to grow more food because there is a vast shortage in the world's food reserves. This means YOU must plow more; plant more; do it quicker; do it better; in order to do your full duty to your country's demand. You must plant every available acre, especially should your acreage of grain be extended. Your problem will be easier; your response to the "call" more helpful, if you will "enlist" the services of a

MOLINE UNIVERSAL TRACTOR

HERE is a light, handy, compact, two-wheel tractor which costs less than four horses, but will do the work of seven horses. No other tractor on the market will do such a variety of work. It is strictly a ONE-MAN, all-purpose tractor; heavy enough to do all farm work, yet light enough to work on soft plowed ground without packing the soil and is inexpensive to operate—in fact, it is cheaper than horses.

- It will CULTIVATE as well as plow.
- It will do your discing, harrowing, planting, mowing, haying, harvesting—in short, anything you can do with horses, also all belt work on the average farm.
- It will do all this easier, quicker, cheaper than with horses.
- It pulls two 14-inch bottoms and furnishes 10 to 12 h. p. on the belt.
- It is made and backed by one of the oldest, strongest, most dependable farm implement companies in the world and built in the largest tractor factory in the world.
- It is the only tractor which will do all farm work without horses. You ride the tool—not the tractor—where you can plainly see the work you are doing.

Write for free catalog-folder and see for yourself how this handy all-purpose, one-man tractor will not only help you answer the country's "call" more completely, but help you solve your power and hired help problems to your utmost satisfaction.

MOLINE PLOW COMPANY

Dept. 60 MOLINE, ILLINOIS

[7]

READ

this letter from a Moline user:

The Moline - Universal Tractor has proven to be one of the best investments that I have ever made. It has been doing more than I expected of it. I have plowed 60 acres this fall. The Moline - Universal Tractor and two horses constitute the power of my 160-acre farm and there is very little work left for the horses to do. When the week is past, we find that more time has been spent caring for the horses than for the tractor. It is a little wonder when it comes to pulling a load up hill.

NORMAN BIERY, Louisville, Ohio

A Moline 2-Wheel Tractor Hitched to a Moline Two-Row Cultivator



The Moline Line Includes:

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons; also

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